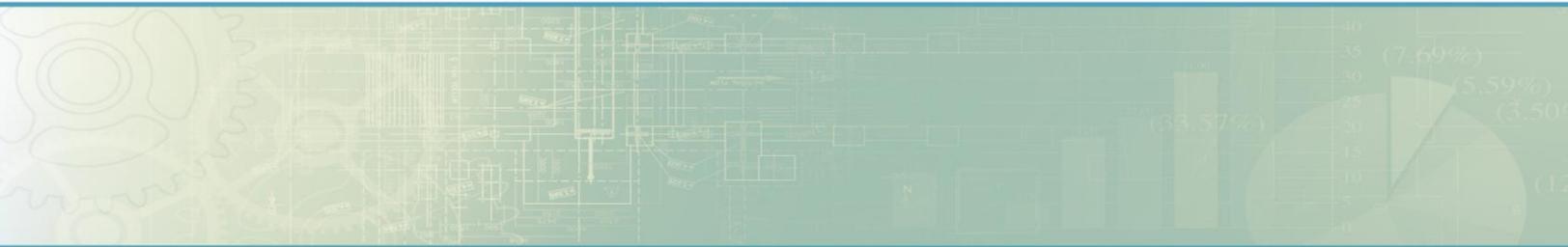


# Health Information Exchange Economic Sustainability Panel: Final Report

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## EXECUTIVE SUMMARY

The National Opinion Research Center (NORC) is pleased to provide this report outlining key findings from the “Health Information Exchange (HIE) Economic Sustainability Panel,” a project funded through a contract with the Office of the National Coordinator for Health Information Technology (ONC) in the Department of Health and Human Services (HHS). The report provides ONC with information to inform current and future deliberations and decision making related to increasing engagement in HIE nationwide. This effort developed four broad policy approaches to promote sustainable HIE and analyzed their costs, benefits, risks, and feasibility.

This report focuses on how to achieve a reality where health care stakeholders have the means and motivation to securely share individually identifiable data effectively, in order to improve quality, safety and efficiency of health care delivery. In particular, the various approaches emphasize the incentives necessary to increase demand for HIE among health care providers, payers and health care consumers and to enhance the supply of HIE mechanisms to meet this demand. As part of this focus, this report discusses potential changes to the payment system including options that emphasize health outcomes and care coordination.

Coming on the heels of the passage of the American Recovery and Reinvestment Act of 2009 (ARRA), this report may help inform the provision in the law that requires ONC to report to Congress about additional funding or authority needed to engage all health stakeholders in a nationwide health information technology (IT) infrastructure. With its incentives to encourage the adoption of electronic health records (EHR) that have data-exchange capabilities, the Health Information Technology for Economic and Clinical Health Act (HITECH) provisions of ARRA may help address a critical prerequisite of information exchange by increasing the amount of data that is available in an electronic form.

The extent to which HITECH leads to widespread engagement in nonproprietary HIE will depend on several factors, including:

- 1) Standards and policies are established to ensure the interoperability of the data in EHRs;
- 2) Eligibility criteria to receive EHR-related incentives appropriately emphasize HIE (e.g., definition of “meaningful use”); and
- 3) The infrastructure necessary to support HIE is in place in time to meet the ambitious schedule laid out in the legislation.

Broader payment policy change or health care reform efforts may also influence the sustainability of HIE, after funding in HITECH has expired. Thus, throughout the document, we emphasize both the impact of HITECH on HIE and the role that sustainable HIE might play in upcoming deliberation on health care reform. Executive Summary Table 1 highlights some of the relevant provisions in HITECH.

## DEFINING SUSTAINABLE HIE

This project focused on exploring what is needed to assure that key stakeholders engage in the exchange of health information that is consistent with (1) improving the safety, quality and efficiency of the health care system; (2) enhancing the capacity to monitor and improve population health; and (3) providing access to aggregate, de-identified data that can be used to test the impact of various policy options on clinical and financial outcomes in a manner that assures the anonymity of the information.

Having sustainable HIE means achieving a reality in the United States where: (1) It is feasible for any health care provider, health care consumer or payer to electronically share individually identifiable data to support efficiency and quality of care in a standards-based format using non-proprietary mechanisms and in a manner compliant with all state and federal security and privacy laws, regulations, and policies; and (2) The costs and benefits of HIE are aligned such that, once established, HIE will be funded through mechanisms that reflect the advantages that are accrued from HIE (e.g., third party reimbursements, fees for specific transactions) rather than through extraordinary sources (e.g., ongoing blanket government subsidies). The most critical challenge to achieving sustainable HIE—and the one this project primarily addresses—remains the lack of financial incentives for HIE and the situation where the entities benefiting from HIE are different from the entities bearing the costs.

## THE APPROACHES

Based on an environmental scan and conversations with expert panelists, the project developed the following policy approaches. This section concludes with a discussion of how elements of these approaches might be integrated.

**Nonfinancial Assistance.** This approach entails a comprehensive review of current federal efforts to promote HIE and a reprioritization of those activities. It calls for the continuation, or potential expansion, of existing projects on standards, assimilation of privacy regulation, certification of HIE-related software and other ongoing efforts to lessen barriers to HIE participation.

If the assumptions underlying this approach are correct, this approach may be able to achieve sustainable HIE with relatively minimal new governmental investment. However, many panelists assert that the establishment of a mature HIE market will require a larger governmental intervention than the one contemplated in this approach.

**Federal Government Focus.** This approach calls for modifying legislation and rules governing all federally underwritten health care benefits and services including those led by the Centers for Medicare and Medicaid Services, the Federal Employees Health Benefits Program (FEHBP), the Veterans Health Administration, the Indian Health Service, the Department of Defense and others. This approach would demonstrate the federal government’s willingness to use its leverage as the largest health care purchaser in the country to encourage all members of the health care sector to get involved in developing models of HIE that spread costs in a way that reflects which entities stand to benefit the most.

This approach establishes a progression of positive and negative incentives within Medicare. At first, financial incentives could be direct; per HITECH, bonus payments will be made to providers who use an EHR that has the capacity for HIE. After several years, positive incentives will be replaced by penalties in the form of lower payments for providers who do not demonstrate “meaningful use” of an EHR. Eligibility for incentives could also shift over time from an initial emphasis on whether or not providers exchange information to a requirement that providers demonstrate effective engagement in HIE. There is also flexibility in the types of reimbursement incentives. For example, providers could be given greater opportunity to benefit from efficiency gains that are enabled by HIE, or they could be more accountable to the outcomes or cost-effective delivery of care, which could be made more coordinated and less prone to medial error through HIE.

Eventually, all providers who receive Medicare reimbursement and all payers who offer Medicare Advantage or Part D Prescription Drug Plans could be required to engage in HIE. To help providers comply with these new requirements,

this approach would include some direct subsidization to support the development of health information organizations (HIOs) and technical assistant and financial assistance to help providers engage in HIE.

Parallel to the efforts to promote HIE in Medicare, this approach also seeks to leverage other health programs underwritten by the federal government. FEHBP could impose similar conditions of participation on the insurers in that program. Medicaid providers could also be encouraged to engage in HIE.

By leveraging all aspects of federal health care, this approach would likely have a dramatic effect on the use of HIE in the next five to ten years. Because insurers and providers who participate in Medicare, Medicaid, and FEHBP also operate in the private sphere, there would likely be a spillover effect on private-pay patients as well. If this approach successfully uses reimbursement mechanisms to place the emphasis on effective exchange of health information that influences patient outcomes or increases efficiency, it could demonstrate to patients, private insurers and providers the important benefits of HIE.

There is a risk, however, that providers will engage minimally in HIE simply to comply with requirements and not in ways that would ultimately generate value by increasing efficiency or quality of care. This risk could be particularly problematic given that the costs to the federal government (and therefore to taxpayers) for the technical assistance and other start-up support might be substantial. Also important to consider is the cost to providers of gaining the capacity to exchange information, which might be particularly burdensome for small providers.

**State Government Focus.** This three-pronged approach seeks to leverage the ability of states to promote HIE in a way that is consistent with the on-the-ground market realities in each state. Given the current financial circumstances of most states, substantial federal funding would be required; however, governance and administration of the new policy could take place on the state level. As the first prong of this approach, the federal government would allocate grants to states to develop and implement plans for fostering HIE through a variety of mechanisms. This could include: conditions of participation for state-administered health insurance programs, licensure and accreditation practices, reimbursement mechanisms, malpractice reforms, direct financial support and technical assistance. Importantly—and consistent with provisions in HITECH—this approach could involve direct subsidies to states or state-designated entities to establish HIOs in areas where there are currently limited options for engaging in HIE. Second, this approach would seek to strengthen the safety net by allowing for greater flexibility in Medicaid to structure payments to reward engagement in HIE or otherwise promote the exchange of health information among Medicaid providers. Third, the federal government would play a coordinating role to ensure that states have the opportunity to learn from each other and that HIE infrastructures allow for interoperability across state boundaries.

One aspect of this approach that could yield the greatest benefits is the support to help build HIE infrastructure. Although costly, this activity addresses a crucial supply concern by establishing pathways to allow providers to engage in HIE. However, the mere existence of such a pathway, without a concerted effort to increase demand, may not be enough to encourage a provider to take advantage of it. Also, if efforts to build the supply are not adequately aligned with the ultimate benefits, new HIE mechanisms might not be able to deliver the benefits of better coordinated, higher quality, and more efficient care. Thus, efforts to help build HIE infrastructure should be informed by and coordinated with broader payment and health reform initiatives.

In looking at the impact of this approach on different stakeholder groups, providers stand to gain, particularly if direct support is provided without an associated requirement that they meet certain goals using HIE. Also, greater availability of HIOs might lower burdens for practices to begin exchanging health information. Individuals might

benefit from gaining access to HIE through Medicaid and other safety net providers. The impact on patient care would depend on how well providers use these resources, which implies that technical assistance and continuing education might be valuable to transform the delivery of care.

**Private Sector Focus.** This approach creates new tax advantages for stakeholders to establish infrastructure for exchange and participate in that exchange on an ongoing basis. Existing tax policies that benefit expenditures on health care, such as tax exemptions for employer health insurance expenses, may be modified to include new HIE-related requirements for eligibility. The approach also makes use of direct subsidies or guaranteed loans to health care providers and stakeholders to create an effective “supply” of HIOs.

Ideally, these tax incentives would provide a sufficient level of up-front financial support to help health care market participants develop effective means for exchanging health information and to motivate continued participation in HIE. Even if only a segment of the market takes advantage of tax incentives, it could represent the critical mass necessary to reduce the costs and increase the benefits associated with participation in HIE, thereby encouraging widespread adoption.

There are, however, risks and challenges associated with this approach. The strategy of using tax incentives to encourage the establishment of HIOs may be difficult to monitor and may not be as cost-effective as more directive approaches. Without a clear path towards sustainable HIE, there is the potential that entities will receive tax advantages without substantially achieving intended policy objectives, such as improving health outcomes or care coordination. Another risk is that channeling incentives through the tax exemption for employer-sponsored insurance might prompt some employers to stop offering coverage.

**Integrating Approaches.** According to the panelists, the federal government might have a particularly important role in providing oversight for the development of one uniform set of guidelines for HIE architecture and consistent technical standards for interoperability and privacy policies. At the same time, states may be well positioned to support the development of the HIE infrastructure. In addition, because there are elements of HIE infrastructure that resemble a public good, state or federal governments could avoid a free rider problem by requiring that all insurers contribute a set amount per member that would help pay for the infrastructure used by all providers. The private sector also has a crucial role in implementation. Purchasers and insurers might impose conditions of participation and incentives through reimbursement systems to encourage providers to engage in HIE.

To ensure widespread, sustainable HIE, the sequencing of events is also critical. First, groundwork may need to be established to support nationwide HIE, including developing architecture and standards and policies for interoperability and privacy. It is also important to ensure an adequate supply of mechanisms to allow for the exchange of health information. As interoperability guidelines and requirements for receiving incentives emerge, it may be appropriate to begin implementing policies to encourage providers, payers and purchasers to engage in HIE. As outlined in Executive Summary Table 2, this could include subsidies and technical assistance to facilitate participation; positive incentives to award participation; and, ultimately, requirements and penalties for providers who do not engage in HIE.

**Executive Summary Table 1: Provisions in HITECH that Relate to the Approaches**

Approach	Relevant Provisions in HITECH
<b>Nonfinancial Assistance</b>	<ul style="list-style-type: none"> <li>▪ HITECH helps lay the groundwork for HIE by requiring HHS to adopt a series of standards, implementation specifications, and certification criteria. An initial set of these standards and criteria must be adopted by the end of 2009, which will prompt rapid action in these areas.</li> <li>▪ HIT Policy Committee and the HIT Standards Committee are established to make recommendations related to implementing a nationwide health IT infrastructure.</li> <li>▪ Research and technical assistance may be provided through the Health IT Research Center, regional extension centers, and grants for academic programs.</li> <li>▪ Privacy and security provisions in HIPAA are expanded to a larger number of HIE stakeholders and additional notifications are required related to security breaches. Additionally, regional offices of HHS will provide education and guidance about privacy and HHS will report to Congress on privacy.</li> </ul>
<b>Federal Government Focus</b>	<ul style="list-style-type: none"> <li>▪ HITECH includes incentive payments for Medicare providers who demonstrate “meaningful use” of EHRs and also covers a substantial portion of the costs of purchasing and operating an EHR for Medicaid providers who forgo the Medicare benefits. The way “meaningful use” is defined will affect how these provisions incentivize HIE.</li> <li>▪ A state loan program to purchase and use certified EHRs and seed funding for HIOs provide additional resources to help ensure that providers have a means of engaging in HIE.</li> <li>▪ Federal agencies that implement or upgrade health IT systems, as well as health care providers and insurers that are under contract with federal agencies and implement or upgrade health IT systems, are required to use systems that meet the standards developed through HITECH.</li> </ul>
<b>State Government Focus</b>	<ul style="list-style-type: none"> <li>▪ Grants to states or qualified state-designated entities could support the design and implementation of HIOs or other mechanisms for exchange. This grant program could also support other efforts to promote HIE within the state.</li> <li>▪ The federal government will provide states and Indian tribes grants to establish loan programs to help providers purchase and use EHRs.</li> <li>▪ Through incentives that cover a substantial portion of the costs of purchasing and operating EHRs, Medicaid providers would likely be generating data in structured forms that would facilitate HIE. Technical assistance and other administrative funds in the legislation could also help to ensure the meaningful use of such applications.</li> </ul>
<b>Private Sector Focus</b>	<p>Although HITECH does not use the tax system as a primary tool for promoting the adoption of health IT or increased engagement in HIE, it does provide some funding that could potentially spur on private-sector activity in HIE in ways that are similar to those contemplated in this approach:</p> <ul style="list-style-type: none"> <li>▪ A loan program is established to support the purchase of certified EHRs by health care providers.</li> <li>▪ State-designated entities are eligible for grants to develop HIE infrastructure or otherwise promote HIE. The federal government will provide states and Indian tribes grants to establish loan programs to help providers purchase and use EHRs.</li> <li>▪ Payments to Medicaid providers would reimburse a large share of the costs of purchasing and implementing EHRs.</li> </ul>

**Executive Summary Table 2: Integrating Across Approaches**

Phases	Key Activities	Stakeholders / Potential Role	Opportunities in HITECH
<b>Lay the groundwork</b>	<ul style="list-style-type: none"> <li>▪ Development of a nationwide architecture</li> <li>▪ Establishment of interoperability standards</li> <li>▪ Alignment, clarification of privacy/security requirements</li> <li>▪ Education on HIE benefits</li> </ul>	<p><b>Federal:</b> Serve in a leading role to ensure nationwide HIE. Provide overall direction on nationwide architecture. Establish which standards and privacy policies must be in place in order for IT applications to qualify for certification and for health care entities to qualify for federal funding (Medicare, Medicaid, subsidies). Fund/deliver education to providers/patients on HIE benefits.</p> <p><b>State:</b> Provide input on policy development.</p> <p><b>Private sector:</b> Provide input and demonstrate models of successful HIE.</p>	<ul style="list-style-type: none"> <li>▪ ONC is legislatively authorized to coordinate health IT adoption efforts</li> <li>▪ ONC is charged with adopting initial HIT standards by 12/31/09. HIT Standards Committee is established</li> <li>▪ Expanded security and privacy requirements under HIPAA</li> <li>▪ Research and regional TA program</li> </ul>
<b>Ensure supply</b>	<ul style="list-style-type: none"> <li>▪ Establishment of HIOs</li> <li>▪ Development of a competitive market for technology service providers</li> <li>▪ Dissemination of best practices for establishing and governing HIOs</li> </ul>	<p><b>Federal:</b> Provide funding either to states to allocate or directly/indirectly to HIOs in the form of tax incentives, loans, and grants. Highlight best practices.</p> <p><b>State:</b> Develop statewide HIE mechanisms or provide oversight/guidance of and administer federal funds for regional efforts.</p> <p><b>Private sector:</b> Providers, payers, and purchasers can participate in development and governance of HIOs. Non-profit and for-profit entities can operate exchanges that reflect local medical markets.</p>	<ul style="list-style-type: none"> <li>▪ Grant program to states or state-designated entities could provide seed funding for HIE infrastructure</li> <li>▪ Health IT Research Center, regional extension centers, and programs at academic institutions could support studies on best practices</li> </ul>
<b>Facilitate participation</b>	<ul style="list-style-type: none"> <li>▪ Direct subsidies</li> <li>▪ Technical assistance (TA)</li> </ul>	<p><b>Federal:</b> Provide substantial support through tax incentives or other subsidies to help providers and payers purchase the necessary software and hardware for exchange, re-arrange work practices to take advantage of it and potentially support maintenance. Help cover costs for FQHCs and other safety net providers. Provide TA to maximize potential benefits of HIE.</p> <p><b>State:</b> Administer/provide oversight for federal grant programs. Implement state tax incentives. Support HIE for public health, other safety net providers. Deliver TA.</p> <p><b>Private sector:</b> Recipients of direct subsidies.</p>	<ul style="list-style-type: none"> <li>▪ Grants to states or tribes for loan programs for purchase/use of EHRs</li> <li>▪ Funding to Medicaid providers for adoption and use of EHRs</li> <li>▪ Funding for community health centers to acquire health IT systems</li> <li>▪ TA through Health IT Research Center and extension centers</li> </ul>
<b>Reward participation</b>	<ul style="list-style-type: none"> <li>▪ Positive payment incentives</li> <li>▪ Malpractice premium assistance</li> </ul>	<p><b>Federal:</b> Reward engagement in, or outcomes from, HIE in Medicare, Medicaid, FEHBP, VHA, IHS, etc.</p> <p><b>State:</b> Implement payment incentives (pay for performance, care coordination models) in state employee benefits plans, Medicaid. Work with malpractice insurers to lower premiums for providers who exchange information or reduce liability for privacy breaches if providers engage responsibly in HIE.</p> <p><b>Private sector:</b> Providers and payers would need to implement HIE and re-organize their delivery of care to improve health outcomes. Payers and purchasers could implement similar rewards for providers seeing private-pay patients.</p>	<ul style="list-style-type: none"> <li>▪ Incentives to Medicare providers who demonstrate meaningful use of EHRs</li> </ul>

Phases	Key Activities	Stakeholders / Potential Role	Opportunities in HITECH
<p><b>Require participation</b></p>	<ul style="list-style-type: none"> <li>▪ Conditions of participation</li> <li>▪ Negative payment incentives</li> <li>▪ Certificate of need</li> </ul>	<p><b>Federal:</b> Make engagement in HIE a requirement for providers and payers in FEHBP, Medicare. Reduce Medicare reimbursements for providers not exchanging information. Potentially make tax exemption for employer sponsored insurance contingent on HIE.</p> <p><b>State:</b> Initiate conditions of participation for state employee benefits plans. As part of CON application, require hospitals investing in health IT to connect to HIOs.</p> <p><b>Private sector:</b> Providers and payers would need to engage in HIE or risk losing potential sources of payment. Payers (in Medicare or FEHBP) might need to implement plans to incentivize their providers to take up HIE. Employers might exert pressure on third-party administrators to ensure compliance with new requirements.</p>	<ul style="list-style-type: none"> <li>▪ Penalties phased in over time for Medicare providers who do not demonstrate meaningful use of EHRs</li> </ul>

## CONCLUSIONS AND FUTURE IMPLICATIONS

This report covers a wide range of approaches that could be employed by policy makers seeking to establish and sustain HIE in the United States. While the project did not seek to achieve consensus on a specific approach, it does outline areas of agreement regarding the universe of policy options and the key considerations inherent in pursuing those options. We end with a series of analytic conclusions that may provide useful guidance as state and federal policy makers take stock of their new responsibilities under HITECH and the future of health care reform.

**HIE is integral to broader health care system objectives.** Promoting sustainable HIE is an important component of improving the quality, safety and cost effectiveness of care delivered in the United States. To achieve these types of goals, providers may need to be able to do more than just exchange data and view data from multiple sources—they may also need to be able to integrate those data. If all data related to a given patient is available to providers in an easily retrievable, consistent format decision support tools could be applied to those data to improve care. To this end, it may be important to move to pay for performance policies. These policies may both require HIE for their implementation (i.e., to allow purchasers and payers to access information across care settings to accurately measure quality of care and health outcomes) and incentivize providers to participate in HIE in a manner that creates quality and cost benefits.

**Relationship between supply and demand is complex and both must be addressed.** Although generating demand for HIE—from both providers and patients—is a prerequisite for sustainable HIE and a challenge in the current market, generating demand alone may not be sufficient. Many members of the expert panel suggested that investment, beyond the seed money for planning and establishing regional HIOs provided in HITECH, may be necessary to ensure the infrastructure to exchange health information exists so that providers who want to engage in HIE have a mechanism for doing so. (A recent study noted only 55 operational regional HIOs, many of which receive inadequate revenue from participating entities to cover operating expenses, suggesting that many providers may not currently have access to a sustainable HIO.) Panelists urged quick action to increase the supply of non-proprietary HIE mechanisms, vendors and network service providers, given that incentives for EHR use will be introduced in 2011. Absent policy attention on the issue of how best to supply HIE, there may be a risk that proprietary models of exchange become the dominant practice, which would not support population health and reporting objectives. Ideally, HIE mechanisms would support payment options such as bundling, pay for performance, episodes of care based payments and payments to medical homes.

**Policies should focus on effective models for exchange.** Panelists also noted the potential importance of assuring that organizations leading HIE initiatives adopt data architectures, processes and procedures that give providers the tools to work together and with other stakeholders to reduce morbidity, mortality and costs associated with poor management of chronic illnesses, less than adequate provision of preventive care and other health and health care priorities. For example, some panelists noted that a patient-centered model for providing coordinated care may hinge on specifics such as the presence of a federated vs. non-federated data architecture or the extent to which applications allow effective integration of complex data. Similarly, if consumers assume greater responsibility for engaging in healthy behaviors and helping to manage their chronic conditions, it may be important to assure that individuals have access to their health information in a way that is meaningful to them. Because different visions for

health care delivery may imply different models for HIE and different nationwide architectures, it may be appropriate to map out the implications of health reform initiatives—once those priorities emerge—as they relate to HIE.

**ARRA / HITECH is an important first step, but key factors are unresolved.** Although HITECH provides an important opportunity to increase adoption of health IT and the amount of structured clinical data available in interoperable applications, the extent to which HITECH encourages sustainable exchange of these data rests on the rules ultimately adopted around “meaningful use” of EHRs. Given that the majority of funding under HITECH goes to incentives for EHR use, it may be important for future initiatives to focus more explicitly on incentives for exchanging data from EHRs.

**True sustainability may require an ongoing policy focus and payment policy is key.** Because policies that create new incentives can lead to opportunistic behavior to achieve short term advantages, policy makers need to have mechanisms to monitor and evaluate the sustainability of any measure enacted and have authority to restrict advantages, subsidies and enhanced reimbursements to entities that can demonstrate the sustainability of their HIE efforts. Ultimately, panelists noted that achieving true sustainability will necessitate a payment system that requires regular cross-provider coordination and participation in HIE as a core element of providers’ work.

By using a broad range of levers to support and incentivize HIE, policy makers can work towards a reality where health care providers, consumers and payers electronically share data in a sustainable manner and in a manner that aligns the costs of HIE with quality and efficiency benefits.

## METHODS

The foundation of this project is an expert panel with representation from a diverse array of stakeholders including providers and insurers with firsthand experience with HIE; federal and state government representatives; and economists and other researchers specializing in payment policy. Technical advisors with experience implementing HIE efforts provided additional guidance. To help focus the discussions of this panel, NORC conducted a rigorous environmental scan and developed background memos and briefing presentations.

In the fall of 2008, we held two sets of conference calls and a series of one-on-one conversations with panelists to introduce the project and to discuss an initial set of policy approaches that we had drafted. Based on those conversations, an interim report was developed. On January 16, 2009 the panelists came together for an in-person meeting where they provided additional recommendations about the four policy approaches. Following the passage of ARRA, we revised the paper to include discussion of HITECH provisions as they relate to the proposed approaches. We also reconvened the panel in a final series of conference calls to get their perspectives in light of the relevant portions of the law.

## INTRODUCTION AND MOTIVATION

The National Opinion Research Center (NORC) is pleased to provide this report outlining key activities and findings from the “Health Information Exchange (HIE) Economic Sustainability Panel,” a project funded through a contract with the Office of the National Coordinator for Health Information Technology (ONC) in the Department of Health and Human Services (HHS). The effort assesses a menu of policies designed to increase engagement in HIE nationwide. The report provides ONC with information to inform current and future deliberations and decision making.

We present this report immediately on the heels of the passage and signing into law of the American Recovery and Reinvestment Act of 2009 (ARRA). Title XIII of this Act, the “Health Information Technology for Economic and Clinical Health Act” (hereinafter HITECH) establishes new federal investment and authority to set policy, standards and financial incentives to rapidly expand adoption of interoperable health information technology (IT) applications in the United States and sets ambitious goals regarding the adoption and effective use of health IT over the next five years. While the mechanism and process used to develop this report pre-date deliberation and passage of HITECH, this final report reflects our understanding of the potential for sustainable HIE in the post-HITECH environment. Throughout this report, we provide information that can be used to help inform implementation of HITECH as well as potential follow-on or complimentary initiatives that focus specifically on sustainable HIE. We also emphasize the role that sustainable HIE might play in upcoming deliberations on health care reform.

It is in this context that the report introduces four broad approaches for using public policy to promote sustainable HIE. The detailed summary of each approach and analysis of its costs, benefits, risks, and feasibility are informed by a review and assessment of available literature as well as extensive deliberation with a panel of current and former public officials, health care industry executives, health policy professionals, academic researchers and HIE experts.

These approaches rely on a variety of stakeholders to work towards and maintain sustainable HIE. Some of the approaches involve active federal or state governments to establish incentives and enact requirements to advance HIE, whereas other approaches envision a more limited government role of providing support or subsidization for private-market-driven efforts. While the approaches are built around specific policy components grouped for assessment purposes around federal government, state government and market actors, we recognize that actual policy and program decisions will likely combine ideas across the approaches represented here. Therefore, we conclude the report with a discussion of how elements across the various approaches may be combined to establish effective programs and policies.

**Focus of This Report.** This project makes a unique contribution by focusing not on the technical or operational details of developing an HIE infrastructure, but on the incentives necessary to increase demand for HIE among health care providers, payers and health care consumers and to enhance the supply of HIE mechanisms to meet this demand. A key challenge that has slowed the widespread engagement in HIE to date is a lack of financial incentives or a situation where the entities that benefit from HIE are not the same entities that bear the costs. The current system for reimbursing health care often does not adequately reward the coordination of care among multiple providers. In some cases existing payment policy may create disincentives for the type of efficient, coordinated care that HIE can help foster. For these reasons, this report discusses more fundamental changes to the payment system which may be necessary to sustain HIE over time, among all actors in the health care system.

HIE holds the potential to increase the efficiency, cost effectiveness, quality, and safety of our health care system. It could also facilitate monitoring, planning and analytic activities such as disease surveillance, research in clinical effectiveness and the evaluation of health care policies and resources. In order to address these goals, this report focuses on the broader question of how to achieve a reality where health care stakeholders have the means and motivation to securely share individually identifiable data effectively and in a non-proprietary context. By emphasizing exchange broadly, this report compliments and extends findings from a series of recent reports that focus on policies and programs to support the adoption of specific technologies such as electronic health records (EHRs) or electronic prescribing of medications (e-Rx). In addition, the report makes a unique contribution by focusing on key policy levers such as payment incentives, tax advantages and direct government support for sustaining HIE on a large scale and in a manner that supports health care reform.

**Why Now?** The time is right for building a foundation for recommendations of how to promote the use of HIE. Recent projections from the Congressional Budget Office (CBO) place total spending on health at 25 percent of GDP by 2025—up from 16 percent in 2007.<sup>1</sup> At the same time, the quality of care does not always match the high expenditures. An Institute of Medicine report estimated that in addition to exacting a large human toll, preventable medical errors might cost the country \$29-billion a year.<sup>2</sup>

This report comes at a critical time to inform significant expenditures of resources on health IT and HIE to support more efficient, higher quality health care. With its provisions to encourage the adoption of EHRs that have data-exchange capabilities, the recently passed ARRA is an important step towards greater engagement in HIE. The incentives in this legislation may help address a critical prerequisite of information exchange by increasing the amount of data that is available in an electronic form, assuming that standards and policies are established to ensure the interoperability of these data. However, the degree to which this initiative advances HIE may depend in part on how eligibility to receive EHR-related rewards is defined. Panelists emphasized the importance of integrating HIE into this major investment in health IT adoption, in part by including the exchange of health information in the requirements for providers who engage in “meaningful use” of EHRs. It is also critical that the infrastructure necessary to support HIE is in place in time to meet the ambitious schedule laid out in the legislation. A recent study noted only 55 operational regional HIOs—many of which receive inadequate revenue from participating entities to cover operating expenses—suggesting that many providers may not currently have access to a sustainable HIO.<sup>3</sup> This report can help inform the implementation of provisions of ARRA, including the provision that ONC report to Congress within one year on “additional funding or authority needed to achieve full participation of stakeholders in the adoption of a nationwide health information technology infrastructure.”<sup>4</sup> At the same time, this report can lay the groundwork for wide diffusion of HIE in a way that can support broader health reform efforts.

There is significant anticipation that the government will investigate and pursue reforms in the methods for financing health care and improving access to care. HIE may be both necessary for these reforms and enabled by them. For example, a more effective and efficient health care system may reimburse care based on health outcomes rather than the number of services provided. HIE could provide critical information in evaluating performance and, therefore, serve as a basis for this potential shift in payment structure. At the same time, if rewards are grounded in outcomes—and increasingly based on care provided across settings—providers might have more incentive to use HIE to improve the quality of the care they deliver. Efforts to strengthen the nation’s health care system might place more of an emphasis on patient-centered care by administering payments to providers who take responsibility for coordinating the care of individuals, and by paying providers for demonstrated improvements in performance relative to that goal.

HIE may be a key ingredient in building necessary inter-provider communications for that type of coordinated care. Indeed, some panelists argue that truly coordinated care among providers who are not part of the same integrated health care delivery system may only be possible in the presence of robust HIE, and that establishing sustainable HIE is crucial to the successful implementation of payment strategies that focus on providing a single payment scheme for a bundle of services (e.g., episode of care payments). These types of reimbursement changes may create an environment that is more conducive to sustainable HIE and, potentially, an environment that relies on sustainable HIE in order to function financially.

The subsequent section of this paper discusses the methodology employed to develop this analysis. Next, the paper reviews background information on HIE, its benefits and the barriers to sustainability. It also offers some key definitions that will guide our discussion. The report then highlights several overarching themes, including sources of funding for policy initiatives, the task of operationalizing the definition of sustainable HIE, and the challenge of ensuring accountability for investments in HIE. Next, the paper provides a brief summary of four broad approaches for supporting HIE that were identified during the course of the project. This overview includes two summary tables; the first outlines stakeholder roles in implementing the approaches, and the second provides a side-by-side analysis highlighting the feasibility, upfront costs, potential rewards and risks of each approach. The bulk of the paper consists of a more in-depth discussion of the approaches. The paper concludes with a discussion about integrating elements across approaches and future implications for decision makers.

## METHODOLOGY

As noted above, the information presented in this report is drawn from a number of important sources. We conducted an environmental scan, encompassing a review of research and trade literature on the current state of HIE as well as potential benefits and costs of HIE. We also engaged in discussions with a range of researchers conducting related projects including the National Governors Association (NGA) State Alliance for e-Health and the State Level Health Information Exchange Consensus Project supported by ONC, as well as the State and Regional Demonstration contracts sponsored by the Agency for Healthcare Research and Quality (AHRQ). Finally, we reviewed and synthesized a myriad of reports published over the last year outlining broad approaches to health care reform and the role of HIE. These materials include those published by the Congressional Budget Office, the eHealth Initiative, the General Accountability Office Commonwealth Fund, the Health Information Management and Systems Society, the American Health Information Management Association (AHIMA) and others.

Concurrent with this review, we identified potential candidates to sit on the expert panel and worked to select the final panelists based on input from ONC. The panel has representation from a diverse array of stakeholders including providers and insurers with firsthand experience with HIE; federal and state government representatives; and economists and other researchers specializing in payment policy. To supplement the expertise of the panel, several technical advisors with a wealth of experience implementing HIE efforts provided additional guidance (see front cover for a list of the panelists and advisors). NORC prepared several memos and briefing presentations to provide background information on HIE and to articulate the goals and assumptions underlying the project. These documents were informed by the environmental scan described above as well as through discussions with ONC and project

advisors from AHIMA, AHRQ and the NGA. Throughout the project, liaisons from those organizations were given the opportunity to review the project's plans and offer input and feedback.

In September 2008, through a series of conference calls, the panelists reviewed the background documents and were introduced to the project. Following those calls, NORC developed a draft of potential policy approaches. The panel came back together for a second series of conference calls in November to provide initial feedback on those policy approaches and criteria for assessing them. To gather additional perspectives on these approaches, NORC staff conducted one-on-one conversations with nearly all the panelists. Based on those conversations, an interim report was developed. On January 16, 2009 the panelists were convened for an in-person meeting in Bethesda, Maryland. During this meeting, the panel provided additional recommendations about the four policy approaches as well as other important overarching themes.

Following the passage of ARRA and HITECH, our team rigorously reviewed the new legislation and the myriad of summaries that were released in the days following passage. We revised the paper to include discussion of specific HITECH provisions as they relate to the proposed approaches. We also reconvened the panel in a series of conference calls in March, providing an opportunity to reflect on this report in light of the relevant provisions in that law.

This document represents the culmination of the project. It incorporates the background research conducted as part of the environmental scan and reflects the insights gained through the panelists' deliberations during the course of the project. Most of this report will focus on the policy approaches that were developed through this process and present an analysis of those approaches. First, we will provide some background information on sustainable HIE and a discussion of some of the issues that apply across all of the approaches.

## BACKGROUND: DEFINING SUSTAINABLE HIE

Many agree that HIE can facilitate improved decision making by allowing the "right" individual access to the "right" information at the "right" time and that, in doing so, can significantly address quality, safety and efficiency challenges facing health care delivery in the United States. While there are currently functioning examples of how HIE can help achieve these goals, they are few in number and their sustainability and replicability is uncertain. Before describing the challenges that may account for the lack of widespread HIE engagement, this section reviews definitions adopted for the purpose of this project and also summarizes common understandings of the benefits and goals of sustainable HIE.

**What is Sustainable HIE?** In order to assure a common grounding in basic concepts surrounding HIE, this project adopts several definitions developed by the National Alliance for Health Information Technology (NAHIT) as part of its ONC-sponsored work:<sup>5</sup>

- ▶ Health information exchange – The electronic movement of health-related information among organizations according to nationally recognized standards. The types of data involved in HIE may include demographic data and patient medical history, data on medical conditions, diagnoses, procedures, allergies and therapies collected at the point of care, as well as data collected and used for administrative purposes such as claims.

- ▶ Health information organization (HIO) – An organization that oversees and governs the exchange of health-related information among organizations according to nationally recognized standards. These organizations may be regionally focused, represent multi-provider organizations such as hospital systems and integrated delivery systems, or include horizontal networks of providers such as health center networks.

The focus of this project is neither the specific types of data that are most important to exchange nor the data architecture that is most effective. Rather, the project focuses on what is needed to assure that key stakeholders take up the task of engaging in some type of exchange that is consistent with the definition above, in a manner that is sustainable and non-proprietary. In the context of this project, having sustainable HIE means achieving a reality in the United States where:

- ▶ It is feasible for any health care provider, health care consumer or payer to electronically share individually identifiable data to support efficiency and quality of care in a standards-based format using non-proprietary mechanisms and in a manner compliant with all state and federal security and privacy laws, rules, and policies; and
- ▶ The costs and benefits of HIE are aligned such that, once established, HIE will be funded through mechanisms that reflect the advantages that are accrued from HIE (e.g., third party reimbursements, fees for specific transactions) rather than through extraordinary sources (e.g., ongoing blanket government subsidies).

This vision does not imply a single system for exchanging information or a single HIO model, but multiple systems accessible to each other through a nationwide health information network.

**Potential Benefits of HIE.** HIE can support many functions, including exchanging clinical and administrative information, creating medication history summaries, e-prescribing, quality reporting, public health reporting and surveillance, eligibility determinations, claims processing, and various services related to electronic health record (EHR) implementation and hosting. Successful performance of these functions could have many benefits.<sup>6</sup> At the point of care, the ability to view information from all of a patient’s providers (as opposed to relying solely on an electronic medical record that may only contain information from one doctor’s office) can improve the quality and efficiency of care by reducing duplicative procedures and avoiding adverse drug interactions. In addition to streamlining coordination and communication among providers, HIE can reduce administrative and billing burden and facilitate interactions among primary care physician offices, hospitals, pharmacies, laboratories, specialists and patients. Payers can use data gathered through HIE for pay-for-performance or other quality improvement efforts and can use the data as a tool to implement advanced payment strategies that incentivize care coordination, effective management of chronic illnesses, and a reduction in redundant interventions.

Overall, patients or health care consumers may stand to gain the most from HIE. HIE could engage consumers in their health care by giving them access to health information from all of their providers to assist consumers in their decisions. While the use of personal health record (PHR) applications and secure messaging by individuals to track information on their health status, manage interactions with the health care delivery system and communicate electronically with their health care providers is relatively new, PHRs are tools for HIE that potentially improve patients’ self management and the coordination of their care. There have been important strides in this area,

particularly for individuals who are members of integrated delivery systems such as Kaiser Permanente or Group Health Cooperative of Puget Sound.

The exchange of health information might also enhance population health through better and faster disease reporting, identification of outbreaks, and biosurveillance. Also, pending the establishment of appropriate consent policies, HIE can result in a vital source of information for clinical, public health and health care services research. Finally, HIE could help disseminate the results of research, for example, by sending alerts about emerging health threats from public health departments to providers.

One study that attempted to quantify the potential benefits of nationwide health information exchange and interoperability concluded that fully implemented, it could yield a net value of nearly \$78 billion per year.<sup>7</sup>

The discussion above provides some sense of the potential gains from HIE. For the purposes of this project, we adopt the following broad characterization of the goals of sustainable HIE:

- ▶ Improve the safety, quality and efficiency of the health care system;
- ▶ Enhance the capacity to monitor and improve population health; and
- ▶ Provide access to aggregate, de-identified data that can be used by the government and the private sector to test the impact of various policy options (including administrative and payment changes) on clinical and financial outcomes, in a manner that assures the anonymity of the information.

Broadly speaking, most stakeholders agree that the notion of achieving sustainable HIE is an important part of any vision to improve the way health care is delivered and financed in our country, and to assure that every health care stakeholder, from patients and providers to public health officials and payers, has access to the right information at the right time.

***Challenges to Achieving Benefits through HIE.*** As noted above, although there are many potential benefits to HIE, there are relatively few examples of sustainable exchanges of health information. This is due, in part, to a range of challenges involving privacy, data security and technical capacities and, importantly, achieving consensus across health care organizations on formats and architecture for exchanging data. Because HIE requires interoperability across systems, one obstacle to HIE is establishing agreed-upon data standards that enable interoperability by encoding health information using a common ‘language’ that multiple systems can read.<sup>8</sup> Interoperability requires standards for both messaging (the way information is passed between systems) and data (the content of these messages). It is also imperative that standards are implemented consistently. Depending on the implementation guide employed there are typically variations in how different systems use the same standard.

Through the efforts of various Standards Development Organizations (SDOs) and ONC-supported efforts, there are a number of standards ready for industry use. Yet, obtaining widespread adoption of available standards remains difficult, in part because of the legacy costs associated with moving from proprietary systems to standard systems. Even in cases where coordination and adoption of standards is feasible, data rich organizations often have a competitive interest (perceived or real) in not sharing their data. Finally, in the current environment where there is limited demand for HIE, it is not always the case that systems developers and vendors have incentives to support prevailing standards.

Work is already underway to surmount these hurdles. In addition to efforts to promote a common set of standards, governance models for supporting necessary coordination are being established and a growing field of vendors is emerging to fill technical need. In addition, several consortia have been developed to try to harmonize different privacy, data security and interoperability policies. A number of other initiatives are also working to address these challenges by developing models for financing, accountability and oversight of HIE and otherwise promoting the exchange of health information.

These efforts, many of which have received federal support, include the National eHealth Collaborative (formerly the American Health Information Community and the American Health Information Community 2.0), Health Information Technology Standards Panel (HITSP), Certification Commission for Healthcare Information Technology (CCHIT), State Alliance for e-Health, Health Information Security and Privacy Collaboration, State-Level HIE Consensus Project and the work of the eHealth Initiative. These efforts have provided valuable insights that have helped shape this paper and their work is complementary to that of this panel. Expanding and enhancing efforts to establish standards and certification requirements as part of a federal strategy for promoting expanded and effective use of health IT broadly represents a core portion of several provisions of HITECH. One such provision entails the creation of authorizing legislation and substantial increases in funding for the Office of the National Coordinator for Health IT. While it is important for this project to be aware of the obstacles that still remain in these areas, resolving these challenges is not the focus of this project.

***Emphasis for this Project.*** The most critical challenge—and the one this project is primarily addressing—may be the lack of financial incentives to advance HIE, or a misalignment between which entities stand to benefit from HIE and which ones bear the costs. Some HIE experts argue that the way in which health care is reimbursed in this country (often through fee-for-service type payment mechanisms) encourages creation of data silos and does not reward the coordinated care that robust exchange of health information could support.<sup>9</sup> Indeed efforts to shift reimbursement policy to place a higher emphasis on efficiency may cause some revenue loss on the part of some providers.

Payers and insurers may gain from increased efficiency and reductions in duplicative care or avoidable complications. Yet health plans may be reluctant to subsidize HIE expenses because the benefits of the system as described above would be shared by a large number of patients, not solely the ones that are covered by the insurer. The value of administrative data and the services offered by payers using these data might also diminish as standardized clinical data are more available from HIE. The diffuse nature of the benefits and costs may make it particularly difficult to line up stakeholders to invest in the start-up of HIE infrastructure, which is an expensive aspect of the HIE enterprise.

To make HIE sustainable, it is important to demonstrate that the functions it supports lead to gains in efficiency or improvements in the effectiveness of care.<sup>10</sup> It is also important that the returns from HIE be shared among those who invest in it. Finally, it is crucial to understand the most effective and appropriate role for the private sector, state government and federal government to play in establishing and sustaining HIE, the appropriate sequencing of activities and phases and the financing and legal authority required at each phase.

## OVERARCHING ISSUES

There are several considerations that are common across all of the approaches that are presented in this report. Each approach requires financial resources from the federal government and this section describes potential sources for that investment. In addition, criteria will need to be developed to determine whether an entity is eligible for HIE incentives, and policies will need to be implemented to ensure adequate oversight and accountability for new federal programs. Finally, in all approaches, special attention may be needed to foster HIE among rural and safety net providers.

**Sources of Funding.** There are many costs associated with the start-up of an HIO, including convening stakeholders; setting up an organization for governance; establishing policies and procedures and documents and agreements to comply with regulatory requirements; conducting an inventory of data sources; and procuring the appropriate technical and professional resources to design and deploy an exchange. After the HIO has been established, there are a number of operational costs, which can be grouped into the following categories: professional services (financial management/accounting, marketing, legal, intellectual property, liability insurance, and policy development); personnel; overhead; data center/hardware; ongoing software licensing costs; interface creation and maintenance; training/help desk for end users; accreditation/certification; and marketing and business development.<sup>11</sup>

Existing HIOs often rely, particularly in start-up, on support from federal or state governments as well as contributions from health care stakeholders such as employers and insurers. Once operational, HIOs may charge a transaction or subscription fee for data users or suppliers.<sup>12</sup> In addition to possibly facing some of the costs for HIE through fees for their participation in an exchange, providers and other data users and suppliers also must bear the costs of purchasing and maintaining their own hardware and software. Providers may also have to adjust their normal workflow to meaningfully incorporate HIE into their practice.

Our discussion of policy approaches focuses on the role of federal and state government in financing and supporting the establishment of HIE. Many of the panelists expressed that public funding is appropriate to the extent that HIE mechanisms take on many of the characteristics of a public good, in that they are resources that are best supplied through targeted investment and stewardship by a small number of entities, but whose benefits are diffuse and enjoyed broadly by all. Although a hybrid market-public funding approach may ultimately be the key for sustainable HIE, some argued that because the societal and public benefits are greater than the benefits to any one stakeholder, building the infrastructure for HIE may be seen at least partially as a public good.

There are several potential sources of revenue for these new spending initiatives:

- ▶ The American Recovery and Reinvestment Act (ARRA) of 2009<sup>13</sup> – The recently passed stimulus package provides over \$20 billion in funding for health IT. These provisions, known collectively as the Health Information Technology for Economic and Clinical Health (HITECH) Act, include \$2 billion allocated for ONC and \$17.2 billion going to Medicare and Medicaid reimbursement incentives to encourage adoption of EHRs. The incentives for EHR adoption will only be provided over the next five years to those with certified EHRs that include patient demographic and clinical health data, as well as clinical decision support with physician order entry. Eligible professionals must also demonstrate “meaningful use” of the technology. This standard will be determined by the Secretary of HHS and will require the capability for

the electronic exchange of health information to improve the quality of care and the ability to submit clinical quality measures. Over time, the incentive for EHR adoption in Medicare will disappear and a penalty will be imposed for those who are not meaningful users of EHRs. Although the bulk of this investment is directed towards promoting the adoption of EHRs, the law also includes a more limited pool of money to support standards and policy development and to provide seed funding to help build infrastructure for data exchange. Funding from HITECH will certainly facilitate electronic exchange of health information—particularly if “meaningful use” is defined in such a way that HIE is an integral component—but it does not establish a solution for the long-term economic sustainability of HIE.

- ▶ Assessments on insurers – States could impose an assessment on all insurers on a per member basis or a charge per claim. (Federal action might be required to allow states to levy such an assessment on self-funded plans.) This policy lever would eliminate the barrier created by insurers who may be less willing to invest in the infrastructure for HIE that would benefit patients not covered by their plans.
- ▶ Increasing premiums for government-sponsored health care – For HIE incentives delivered through Medicare or Medicaid and government employee benefit programs, increased premiums might represent a pool of money that could then be disbursed to providers to cover the costs of complying with new HIE requirements in these programs or to help cover ongoing costs associated with maintaining HIE activity.
- ▶ General tax revenues – If HIE is considered a public good that accrues benefits to all Americans, an increase in taxes for all citizens might be appropriate.
- ▶ Consumption-based taxes – Taxes could be raised on items like tobacco. Tobacco taxes have been criticized in the past as unreliable sources of long-term funding. Because raising the price of tobacco products is an effective deterrent to new users, revenues diminish over time. While this reduction is a problem for ongoing programs, federal funding for HIE is often viewed as primarily serving a “start up” or “seed money” role, rather than providing an ongoing subsidization by the taxpayers, so this type of tax may be well designed for the policy purpose at hand.

Although it is anticipated that the expenses associated with the policy approaches will be particularly high in the short term to support start up, funding and redistribution of monies in the system may also be necessary to support ongoing participation and diffusion of HIE across all actors in the health care system. While some of these revenue sources only supply short term investments (e.g., HITECH, consumption-based taxes), others have the potential to provide funding for HIE over the long term. Also, to the extent that direct funding may be inadequate to cover the start-up expenses for establishing mechanisms for HIE, loans and other forms of financing may also be required.

**Operational and Legal Criteria.** A common thread running through many of these approaches is the need to establish operational criteria for what constitutes engaging in HIE for each stakeholder. These criteria would be necessary in legislation or regulations to determine (depending on which options are implemented) which entities: are eligible for incentive payments; meet participation requirements; or qualify for loans, grants and tax incentives. The definition may need to have different versions to apply to different categories of health care entities. In other words, the definition of engaging in HIE may be different for practitioners, hospitals, insurers, laboratories, pharmacies, HIOs, or others. This project does not offer such a definition. However, there are certain principles spelled out in the objectives of HIE described above that might help guide the development of a more specific definition and its accompanying criteria.

Some panelists argued that the bar for what is considered HIE in determining eligibility for incentives should be set at a relatively modest level to make take-up less burdensome. Others questioned whether participating in limited exchange would have the ability to change the delivery of care sufficiently for health care participants to see gains in efficiency or for health care consumers and policy makers to experience improved quality of care. Without these benefits, it is less clear whether HIE would be sustainable. To delve further into these intricacies, it may be appropriate for an independent policy advisory council, with representation from providers, insurers and patient groups, to establish a set of criteria to determine what activities constitute engaging in HIE.

Similarly, some of the incentives may be structured to provide initial support for an effort that is designed to be sustained beyond a limited funding period. In those cases, it may be helpful to establish indicators that a project has adequate potential for sustainability to qualify for a grant, loan or tax advantage.

One key criterion is the definition of what constitutes “meaningful use” of EHRs for Medicare providers eligible to receive incentive payments under HITECH. The legislation notes that in order to be a meaningful user of an EHR, an “eligible professional [must] demonstrate...to the satisfaction of the Secretary [that] certified EHR technology is connected in a manner that provides, in accordance with law and standards applicable to the exchange of information, for the electronic exchange of health information to improve the quality of health care, such as promoting care coordination.”<sup>14</sup> The way that this requirement is further elaborated will critically affect the extent to which the incentives in HITECH will generate demand for increased engagement in HIE. The specification of this requirement will also influence whether the information exchange that results may be limited to point-to-point exchanges between, for example, one physician and one laboratory, or if it will be a broader exchange that might make longitudinal health information about one patient available to authorized persons or entities.

Although some incentive programs may be tied explicitly to the use of certain technologies (e.g., pay for use incentives), other forms of rewards may be linked to achieving particular outcomes (e.g. pay for performance incentives). As described in more detail in the discussion of the Federal Government approach below, some potential changes in the way health care is reimbursed, which are centered around incentivizing better health outcomes, might create additional motivation among providers to improve quality of care and thus may indirectly prompt them to engage in HIE. It may be appropriate, therefore, to foster greater use of HIE through a combination of direct (focused on the act of exchange) and indirect (focused on clinical outcomes) incentives.

**Accountability and evaluation.** Another critical component to each approach will be establishing the mechanisms to hold accountable entities (private markets, state governments, and federal agencies) that are provided resources and have responsibility to meet policy and programmatic objectives. An important consideration for any approach is the extent to which metrics, reporting, and assessment processes can be defined and put in place at the inception of the investment, as well as the reliability and validity of these processes. In other words, there may be a case for preferring policy initiatives where progress towards the objective of achieving sustainable HIE can be effectively measured rather than approaches in which the ability to measure effectiveness is severely constrained. At the same time, there is some risk, as one panelist cautioned, in being too prescriptive in setting out evaluation criteria as it may stifle innovation. There are, therefore, reasons to allow some flexibility in how stakeholders meet particular goals, so long as those goals are clearly stated.

**Establishing sustainable HIE in phases.** One of the key considerations we explore relative to each of the approaches relates to the overall trajectory of change from the current state of health care delivery to one where sustainable,

non-proprietary forms of HIE are standard practice. Some have noted that data that are already available in electronic format such as claims data (including Medicare claims) and clinical laboratory results represent “low hanging fruit” that should be made more accessible to assist in treatment decisions or, under the appropriate restrictions, for quality and efficiency assessments. It should be noted that although these data currently exist electronically, they may not be readily available without regulatory changes. For example, Medicare claims data are not widely shared and provisions in the Clinical Laboratory Improvement Amendment and some state laws restrict the exchange of laboratory results. Efforts to achieve gains through the exchange of these data, some argue, should precede efforts for broader exchange. By allowing providers to be data consumers first, they might appreciate the value of HIE and be more likely to contribute as data enterers.

Another facet to phasing encompasses the question of whether incremental steps, such as one-to-one exchange between individual providers or across providers within a single integrated health care system, are ultimately useful outside of the context of regional or community-wide HIE taking place across multiple institutions. Although there was some disagreement among the panel about whether an incremental or full-scale approach is more desirable, there was consensus that whatever the approach, it is valuable to have a master plan laying out what the state of HIE should be over time. In this way, policy efforts can attempt to both capitalize on the infusion of resources in the short term from HITECH, while laying the groundwork for more fundamental changes down the road.

In general this report strives to remain agnostic on the questions of what types of data should be exchanged and how broadly. However, we do discuss phases to the extent that we seek to understand how the need for government investment will change over time under each approach. We describe phases in greatest detail as part of Table 3 near the end of the report.

***Rural and safety net providers.*** It is important to note the special issues for rural and safety net providers that cut across these approaches. For rural providers, issues of access to broadband Internet and inclusion of telehealth applications as part of the HIE incentives are particularly important. For some classes of safety net providers such as community health centers (CHCs), changes in Medicare or private health plan reimbursement will not create significant incentives. In addition, even under Medicaid these providers are reimbursed based on special rules that need to be amended separately from rules for reimbursing other providers. CHCs and others rely heavily on federal and private sector grant funding as a core source of revenue, so processes governing these grant programs would have to be changed as well. Unless adequate funding support is available, policies that establish new requirements for safety net providers risk creating the unintended consequence of eliminating these providers from the market and reducing access to care for vulnerable populations. Finally, to the extent that HIE leads to widespread improvement in quality of care in the privately financed health care sector but not among safety net providers, we could see an increase in health and health care disparities. Recognizing the special consideration due to these safety net providers, ARRA includes funding for the Health Resources and Services Administration to support investments in information technology in health centers. The law also allows states to cover a more generous share of the expenses that Medicaid providers incur for purchasing and maintaining EHRs that allow for HIE.<sup>15</sup>

## OVERVIEW OF APPROACHES

Based on the environmental scan and conversations with panelists, the project developed a list of policy components—strategies or levers that could be used by government to promote HIE. Some of the components focus on technical assistance and coordinating activities that might foster HIE. Other components address how changes to public and private rules governing conditions of participation and reimbursement to payers and providers might incentive HIE. Various regulatory strategies could also be employed, including licensure and accreditation standards, certificate of need requirements, and policies regarding malpractice insurance. Finally, direct subsidies could be offered in the form of direct payments to providers and payers or tax advantages. Many of these components are incorporated in HITECH and we try to highlight the areas in which the approaches presented here are consistent with that legislation.

After components were identified, they were bundled together to form the following policy approaches. The approaches are intended to represent different angles from which to address the challenge of promoting HIE. They are not mutually exclusive and there is a natural overlap among the components employed across approaches. Pieces of each approach could be combined into a more comprehensive policy initiative that broadly mixes federal, state and private market forces. (A discussion about integrating approaches is included at the end of this report.) Although the approaches were established to be either more or less intensive in terms of government involvement, because this project is sponsored by ONC, this discussion highlights the initiatives that can be influenced by government generally, and the federal government in particular.

***Nonfinancial Assistance.*** This approach envisions a continued government role in providing technical assistance, education, coordination and dissemination resources. It calls for the continuation, or potential expansion, of existing projects on standards, assimilation of privacy regulation, certification of HIE-related software and other ongoing projects to lessen barriers to HIE participation. Many of these activities are essential to lay the groundwork for the exchange of health information. As such, this approach may be seen as a necessary (although likely insufficient) piece of any effort to promote widespread HIE engagement.

***Federal Government Focus.*** This approach calls for modifying legislation and rules governing all federally underwritten health care benefits and services including those led by the Centers for Medicare and Medicaid Services, the Federal Employees Health Benefits Program, the Veterans Health Administration, the Indian Health Service, the Department of Defense and others to reflect the need for greater public and private sector investment in HIE. Key components of this approach include looking at conditions of participation in HIE as a prerequisite for payers and providers to participate in federally underwritten programs and adjustments to reimbursement to payers and providers under federal programs to create new incentives to participate in HIE.

***State Government Focus.*** This approach is similar to the federal approach, only it focuses on levers available to state officials. This approach could involve direct subsidies to states to establish HIOs in areas where there are currently limited options for providers and payers seeking to participate in HIE. Given the current financial circumstances of most states, federal grants to states would be required; however, governance and administration of policies developed through these grants could take place on the state level. In addition, states would be able to lead modifications in licensure, malpractice and provider regulation where they have jurisdiction. Key components of this approach could also include modification of state Medicaid plans to establish reimbursement rules to support HIE,

new licensure requirements for health care facilities and practitioners, adjustment of malpractice premiums to support HIE, modifications to state employee health benefits plans and other programs and initiatives supported and governed on the state-level.

**Private Sector Focus.** This approach directly subsidizes establishment and participation in HIE by granting tax advantages for HIE-related expenditures by for-profit entities or a combination of tax advantages and direct grants to for-profit and non-profit providers and payers to cover the costs of establishing and participating in HIE. Another way the tax system could promote HIE is by making the existing tax advantage for employer-sponsored insurance contingent on benefit plans engaging in HIE. The approach also includes subsidies for HIOs, such as a guaranteed loan program.

The set of tables below are designed to highlight the key points of the approaches, and are followed by lengthier discussions of each approach. Table 1 coincides with the discussion of implementation for each of the four approaches that follows. The table is designed to provide a quick snapshot of each of the approaches (listed in the left-hand column) and, as such, only focuses on top-level elements such as the lead policy actor, legal mechanisms contemplated, target for incentives and key components representing the incentives themselves. The right-hand column outlines how the approach fits into the current policy environment and draws parallels between the key components in the approach and HITECH legislation. The discussion, which begins after the tables, provides greater elaboration of implementation issues including flexibility within options, discussion of phasing components and modifying them over time and options for funding. The narrative about each approach concludes with an exhibit that again highlights the relationship between the approach and provisions in HITECH or other relevant policy initiatives.

Table 2 maps to subsequent sections in the narrative description of each approach that deal with the feasibility of implementing each approach, the initial cost of each approach and the potential benefits and risks associated with each approach. Although this project did not seek to formally cost out the various approaches, Table 2 indicates whether the costs for different stakeholder groups are anticipated to be high, medium or low, relative to other affected stakeholders. We also provide an overall sense of whether each approach represents high, medium or low costs relative to the other approaches. These qualitative descriptors are grounded in the discussions of the approaches that follow the tables.

**Table 1: Policy Approach Implementation Summary**

	Policy Lead, Policy Tools and Mechanisms	Key Components	Implementation Responsibility	Incentive Targets	Financing Considerations/ Current Policy Environment
<b>Nonfinancial Assistance</b>	Policy led from the Office of the Secretary at HHS. Continue, extend existing programs with a focus on interoperability and privacy policies and standards	<ul style="list-style-type: none"> <li>▪ TA</li> <li>▪ Education</li> <li>▪ Convening</li> <li>▪ Direct support for demonstration projects</li> </ul>	Federal gov't: <ul style="list-style-type: none"> <li>▪ HHS agencies such as ONC and AHRQ</li> </ul>	All providers and payers	Limited need for increased financing relative to pre-HITECH level of effort. HITECH infused additional resources and set an ambitious timeline for carrying out activities in this approach related to privacy and interoperability.
<b>Federal Government Focus</b>	Policy led from the Office of the Secretary at HHS, including Executive Orders and new legislation, regulation as necessary  New federal programs, regulation and enforcement, which could require OS, CMS and FEHBP to assume new administrative roles  New oversight for program investments at VA, DoD and IHS	<ul style="list-style-type: none"> <li>▪ TA, education, convening</li> <li>▪ Conditions of participation</li> <li>▪ Reimbursement</li> <li>▪ Direct support</li> </ul>	Fed gov't: <ul style="list-style-type: none"> <li>▪ HHS agencies (such as CMS, OS, HRSA, AHRQ, SAMHSA), OPM, VA, DoD, IHS</li> </ul>	Health care providers and payers participating in federally underwritten care	Likely to result in significant initial costs to help providers in federal programs to meet new requirements, as well as new administrative oversight tasks. HITECH includes substantial incentives for Medicare and Medicaid providers. Although HITECH does not contemplate broader payment policy changes, early signs suggest future health care reform might lead to more significant changes in payment policy.
<b>State Government Focus</b>	Policy led from states, including both Executive Orders and new legislation  Federal enabling legislation appropriating funds to states  New state programs, regulation with enforcement mechanisms  New administrative monitoring mechanisms at CMS and state agencies, including Medicaid and SCHIP	<ul style="list-style-type: none"> <li>▪ Licensure/ Accreditation</li> <li>▪ Conditions of participation</li> <li>▪ Reimbursement</li> <li>▪ TA, education, convening</li> <li>▪ Malpractice incentives</li> <li>▪ Direct support</li> <li>▪ Tax incentives</li> <li>▪ Certificate of Need requirements</li> </ul>	State gov't: <ul style="list-style-type: none"> <li>▪ Medicaid,</li> <li>▪ Public Health,</li> <li>▪ Licensure Boards,</li> <li>▪ State Employee Health Benefits</li> <li>▪ Insurance Commission</li> </ul> Federal gov't: <ul style="list-style-type: none"> <li>▪ CMS, HHS</li> </ul>	Providers, payers offering Medicaid/ SCHIP and state employee health benefits services  All licensed health care providers  Malpractice insurers	Initial financing would most likely have to come through federal grants to states. States would also face the costs of new oversight and administrative responsibilities. HITECH provides grants to states or state-designated entities to develop HIE infrastructure or promote HIE. Legislation also provides funding to help Medicaid providers adopt health IT.

	Policy Lead, Policy Tools and Mechanisms	Key Components	Implementation Responsibility	Incentive Targets	Financing Considerations/ Current Policy Environment
<b>Private Sector Focus</b>	Policy led from the Office of the Secretary at HHS and private markets New implementation-focused grants or contracts	<ul style="list-style-type: none"> <li>▪ Tax incentives</li> <li>▪ Direct support</li> </ul>	Federal gov't: <ul style="list-style-type: none"> <li>▪ IRS</li> <li>▪ HHS agencies such as ONC and AHRQ</li> </ul> State Gov't: <ul style="list-style-type: none"> <li>▪ State tax authorities</li> </ul>	For-profit and non-profit providers, payers, and purchasers, as well as HIOs	Would require significant outlays or reductions in revenue. Although HITECH does not rely primarily on the tax system, it provides for loans to providers and some seed money for HIE infrastructure development.

**Table 2: Summarizing Trade-offs**

	<b>Feasibility</b>	<b>Initial Costs</b>	<b>Potential Benefits</b>	<b>Potential Risks</b>
<b>Nonfinancial Assistance</b>	Basically continue pre-HITECH programs.	Overall cost: <b>Low</b> relative to other approaches  Fed Gov't: <b>Low</b> Payers: <b>Medium</b> Providers: <b>High</b>	Successful models may emerge, and they may be more sustainable than government subsidized models.	Limited form of support may not be enough to encourage HIE in the short term. May produce knowledge, findings that are not usable after a certain period of time.
<b>Federal Government Focus</b>	There is initial support for some of these measures in HITECH. Achieving agreement on specific eligibility criteria and operational definitions will pose a challenge. There may also be resistance to use of federal funds to establish infrastructure or resistance from providers on new participation requirements or risks of payment penalties.	Overall cost: <b>High</b> relative to other approaches  Fed Gov't: <b>High</b> Payers: <b>Medium</b> Providers: <b>High</b>	Robust level of exchange to assure greater efficiency, better quality and lower cost health care. Also, in the context of payment reform, HIE could facilitate evaluation and revisions in approach. Because federally underwritten care directly touches 30% of Americans, impact would be far reaching and could reach “tipping point” in establishing HIE as a standard of care.	The currently available HIE infrastructure may not have the capacity to expand quickly and efficiently enough to meet the new demand. Providers and payers may not be in a position to take advantage of incentives. Or, incentives might push market participants to focus on immediate returns, not sustainability.
<b>State Government Focus</b>	Given states’ financial status, it will be a challenge to find resources unless federal government foots most costs. Even if funding comes from federal government, states may not have adequate staff knowledge to administer, monitor and manage program changes.	Overall cost: <b>High</b> relative to other approaches  Fed Gov't: <b>Med/High</b> State Gov't: <b>Med/High</b> Payers: <b>Medium</b> Providers: <b>High</b> Malpractice insurers: <b>Medium</b>	State government or state-designated entities may represent the best locus for establishing HIOs that give all providers and patients access to benefits. Also, Medicaid/SCHIP and potential public health focus would improve efficiency and access for the most vulnerable populations and potentially decrease the cost burden associated with these programs.	Some states may choose poorly in terms of HIE infrastructure, leading to sunk costs and the need to keep a critically flawed HIE operating. HIE infrastructure could lie fallow if there is limited demand.
<b>Private Sector focus</b>	If framed as primarily a “carrot” based approach, there is less likely to be opposition. However, implementing mechanisms to oversee these subsidies will be challenging.	Overall cost: <b>Medium</b> relative to other approaches  Fed Gov't: <b>Med/High</b> Payers: <b>Low</b> Providers: <b>Low</b> Employers: <b>Medium</b>	Models for successful, sustainable HIE would emerge and adoption of these models would result in improved quality and efficiency of care. Depending on the size of federal investment, the number of patients affected would vary.	Tax incentives could lead to limited achievement of sustainable HIE. Also, specific models may fail because they are not broadly applicable.

## NONFINANCIAL ASSISTANCE

Under this approach, the government role is restricted primarily to technical assistance, dissemination and convening activities to assist the market in adopting HIE. To ensure these efforts are well targeted, the approach would begin with a comprehensive review of existing federal initiatives to promote HIE. Government activities considered under this approach aim to lower the cost of establishing and participating in HIE (the barrier to entry). If the barrier to entry is lowered, more providers will have the means to pursue HIE and the market would arrive at a “tipping point,” where stakeholders perceive that the cost of investing in HIE is equal to or less than the cost of not investing in HIE. Initially, the benefits of investing in HIE may come in the form of competitive advantage and marketing rather than in direct gains from efficiency. Notably, this approach recognizes the importance of continuing federal initiatives, which had been in place prior to the passage of HITECH, that are dedicated to harmonizing data exchange standards, defining key use cases for a nationwide health information network (NHIN) and supporting certification activities. This could build upon current federal support of entities like HITSP and CCHIT. Many of the elements of this approach—particularly the efforts to advance and harmonize standards and policies related to interoperability and privacy—are incorporated in HITECH. However, it is important to note that the legislation also provides subsidies and incentives to promote HIE. This reflects the assumption that the types of nonfinancial assistance contemplated in this approach, although necessary, may be insufficient to achieve the goal of widespread, sustainable exchange of health information.

## IMPLEMENTATION

The Office of the Secretary at HHS would have lead federal responsibility for both policy development and implementation. The approach would initially involve a review of the ONC-coordinated Federal Health IT Strategic Plan and existing efforts funded by the government to encourage HIE and an assessment of the activities that have been most effective from a process perspective (i.e., achieving the goal of disseminating new knowledge, convening stakeholders and establishing consensus). This initial step would be conducted primarily by the federal government. However, after the initial review, federal officials may find that technical assistance and education resources are best administered at the state or local level and may re-design existing programs to transfer resources to other governments. Therefore, state and local authorities including Medicaid, public health and insurance regulators could also take part in this process.

## MECHANISMS

This approach may be the least burdensome from the perspective of its limited need for new policy tools. Assuming federal and state governments continue investing in HIE-related programs at a level consistent with pre-HITECH funding, this approach would simply require some reprioritization and more targeted programming of these efforts. In addition, to the extent that new state or local government based programs are contemplated, there may be a need to expand authority under existing Medicaid/SCHIP waivers through the Centers for Medicare and Medicaid Services (CMS). We believe that most policy changes contemplated under this approach could be achieved either through Executive Order or Agency discretion over use of funds allocated for HIE and health IT.

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## FLEXIBILITY/OPTIONS

In many ways, this approach allows for the greatest flexibility in terms of options. Given the limited level of investment in infrastructure and actual technical applications contemplated under this approach, there will be great opportunities to target content and audiences for coordination, technical assistance, evaluation and knowledge dissemination to those areas where the greatest need is exhibited. In order to be most successful, this approach may have to be targeted towards those stakeholders that are considered drivers in the private market and that would otherwise not participate in HIE. The assessment and selection of investments to continue, discontinue, enhance or lessen should be based on the initial review of existing efforts as well as a comprehensive needs assessment to be re-visited annually.

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## PHASING

Overall, this approach assumes that some assistance and leadership on the part of the federal government in early stages of the advancement of HIE would be necessary to achieve greater adoption and sustainability, and that the need for government resources may lessen over time. In addition, the nature of the investment would change over time. Initial investments would be made in generating and disseminating information related to establishing the infrastructure for HIE and new opportunities for providers and payers to engage in HIE; later investments would focus on helping providers and payers take advantage of those opportunities

Relative to other approaches, this approach lays out a limited role for government. Still, the review referenced above would likely identify new needs and motivate substantially increased investment in convening, research and evaluation, and synthesis of best practices. The increased funding for ONC established in HITECH and its support for health IT-related research and technical assistance may create opportunities to focus a larger set of resources on generating and disseminating best practices from markets where HIE has taken hold effectively. HITECH also establishes a December 31, 2009 deadline for adopting an initial set of standards, implementation specifications, and certification criteria necessary for the Medicare and Medicaid provider incentive programs.<sup>16</sup> This will likely require HHS to take a more rigorous, intensive approach to achieving consensus on use cases, data standards and accreditation criteria.

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## FINANCING CONSIDERATIONS

While we discuss opportunities to expend more resources under this approach, in general, the approach can be implemented using existing levels of effort on HIE related projects by agencies including AHRQ, HRSA, CMS and ONC. The assessment may reveal the need to modify the approach to some existing activities, however, it is likely resource centers that are already in existence or being planned as a result of HITECH can take on this function effectively without necessarily requiring additional funding.

## FEASIBILITY

Because this approach is largely already being pursued by the federal government, and because there likely will be technical assistance, evaluation and knowledge dissemination elements to whatever investments are ultimately made, we do not see any substantial political or market based challenges associated with implementing this approach.

## COSTS, BENEFITS AND RISKS

If this approach were implemented in the absence of more substantial HIE-related investments, incentives and requirements, its success would rely on the assumption that a consensus is forming among health care industry stakeholders about the benefits of HIE and that initial private sector investments are forthcoming as soon as better information and supports are available. If this premise is correct, this approach may be able to achieve market-driven and sustainable HIE with relatively minimal new investment on the part of the government. If this core premise is not valid, there is a risk that this approach would amount to insufficient support for the expensive start-up and maintenance costs associated with HIE.

If successful, an approach that depends on market forces rather than external requirements, like the one contemplated here, may represent greater value to the market and may be more sustainable than adoption that is driven by government policy. Also, because there are no new costs associated with this approach, it does hold the greatest potential for net gains. In particular, HIE stakeholders may be able to use government support to identify key leverage points that, if resolved, could result in wider spread implementation and participation in HIE at relatively lower cost than would be required from larger scale government subsidies. For example, some have suggested that if steps are taken to address key barriers, such as lack of a unique identifier for all individuals obtaining health care in the United States and concerns about the liability that HIOs and providers exchanging health information may assume, the barriers to private sector investment in HIE would be reduced significantly.

Most agree that the role for the federal government described in this approach is essential. However, many also contend that this approach in isolation will not be adequate to simulate the market to move fast enough to meet current goals for the exchange of health information within the next five to ten years. There are aspects of the health care market that may complicate the ability of market forces to generate the desired effects. As discussed above, insurers may be reluctant to invest in HIE because they fear that such investments might benefit other insurers who do not contribute.<sup>17</sup> Providers may view the information they possess about their patients as proprietary and may see little incentive to share it. Finally, although providers and payers would no doubt appreciate any improvements in health outcomes and efficiency resulting from HIE, in many cases, financial incentives for providers do not align with those benefits. As such, investments in TA, convening and other nonfinancial supports may fail to yield dramatic results unless paired with more sizable carrots and sticks for providers and payers.

Also, given the complex nature of health care delivery and information systems, in order to be most successful, new knowledge generated from demonstrations and evaluations should be useful to the industry and government right away, particularly given that incentives for HIE will be implemented by 2011 according to HITECH. The ultimate misinvestment would occur if the industry was not able to take advantage of the benefits of this approach in the timeframe under which those benefits are useful.

**Nonfinancial Assistance and the Current Policy Environment**

Several of the aspects of this approach are consistent with provisions in HITECH:

- HITECH helps lay the groundwork for HIE by requiring HHS to adopt a series of standards, implementation specifications, and certification criteria.
- HIT Policy Committee and the HIT Standards Committee are established to make recommendations related to implementing a nationwide health IT infrastructure.
- Research and technical assistance may be provided through the Health IT Research Center, regional extension centers, and grants for academic programs.
- Privacy and security provisions in HIPAA are expanded to a larger number of HIE stakeholders and additional notifications are required related to security breaches. Additionally, regional offices of HHS will provide education and guidance about privacy and HHS will report to Congress on privacy.

**FEDERAL GOVERNMENT FOCUS**

Under this approach a series of incentives would be employed to promote the exchange of health information by providers whose costs are underwritten by the federal government and by insurers who administer plans through these programs. The approach would leverage the federal government's position as the largest single purchaser of health care in the United States to establish new conditions of participation and reimbursement policies that would drive payers and providers towards establishment and engagement in HIE. Roughly 30 percent of the US population receives their health care through a federally funded mechanism including Medicare, Medicaid, FEHBP, the Veterans Health Administration (VHA), the Department of Defense (DoD), the Indian Health Service (IHS), the Substance Abuse and Mental Health Services Administration (SAMHSA), the Health Resources and Services Administration (HRSA) and others.<sup>18</sup>

Due to the government's role in financing and administering these programs, they represent areas where the federal government can move directly. Because so many providers and insurers would be affected by these policies, it is likely that the reach of this approach will extend to many individuals who receive care that is not ultimately paid for by the federal government as well. This approach would demonstrate the federal government's willingness to use its leverage as the largest health care purchaser in the country to encourage all members of the health care sector to get involved in developing models of HIE that spread costs equitably and focus burden on those entities that stand to benefit the most from HIE. While it is acknowledged that continued assistance of the kind described under the first approach and some direct subsidization would be necessary, this approach relies primarily on the potential for regulatory change to create greater direct incentives for engagement in sustainable HIE.

**IMPLEMENTATION**

The Office of the Secretary at HHS would have lead policy and implementation responsibility. This would include directing and coordinating the efforts of the HHS agencies (e.g., CMS, IHS, SAMHSA, HRSA and AHRQ), as well as other essential agencies outside HHS, such as the Office of Personnel Management (OPM), VHA and DoD. As part of the HHS centered actions, CMS would establish a schedule for phasing in a requirement that all providers who seek

reimbursement for services for Medicare enrollees and all insurers who offer Medicare Advantage or Part D prescription drug plans engage in the exchange of health information. By ten years after enactment of this initiative, participation in HIE would be a condition of participation for the Medicare program. CMS and the Office of the Inspector General of HHS would assume the additional administrative burden of monitoring compliance and enforcement for these conditions. As discussed in the “Overarching Issues” section above, establishing clear criteria for these requirements is prerequisite for this approach.

As a prelude and a complement to the participation requirement, Medicare will modify its payment systems to provide tangible benefits for engaging in information exchange. At first these financial incentives could be direct; per HITECH, bonus payments will be made to providers who use an EHR that has the capacity for HIE. Over time, the nature of the financial incentives will shift. Positive incentives created in HITECH will be replaced by penalties in the form of lower payments for providers who do not demonstrate “meaningful use” of an EHR. (As discussed above, the way “meaningful use” is defined will affect the type of exchange of health information that is incentivized by this legislation.) Moving beyond the framework established in HITECH, reimbursement policy could also reward providers based on the results of their effective use of HIE, rather than based on whether they are using an EHR or exchanging data. Finally, there are some potential reimbursement and payment strategies whose implementation may require payers, such as Medicare, to use data provided by a functioning HIE (e.g., to structure payments for episodes of care involving multiple health care encounters). As discussed in the flexibility section below, these incentives could take several forms; providers could be given greater opportunity to benefit from efficiency gains that are enabled by HIE, or they could be more accountable to the outcomes or cost-effective delivery of care, which could be made more coordinated and less prone to medial error through HIE.

Rewards for engaging in HIE may not be sufficient to enable all providers to participate in HIE. Although new reimbursement mechanisms might help cover the costs of maintaining HIE systems, it is unclear that they would be sufficient to support start up. These start-up expenses include the purchase and implementation of hardware and software by providers, as well as the development of HIOs or other mechanisms for exchange on a multi-stakeholder level. Some providers, particularly small practices or those in rural areas might face particular challenges in ramping up their ability to exchange health information. Thus, the federal government would administer grant programs or provide other forms of financial support to help ensure that all Medicare providers who are interested in engaging in HIE have a path forward for adopting it. Several initiatives in HITECH—including state-run loan programs for providers to purchase EHRs, and grants to states or state-designated entities to develop HIE infrastructure—could serve as the cornerstone of this support.

Simply having access to the technology to engage in HIE may not be adequate for providers to be able to use it effectively in order to improve efficiency or quality of care, nor would it likely be adequate to qualify for federal funding. As such, the federal government would be responsible for ensuring the availability of high-quality technical assistance (TA). This could be administered through Quality Improvement Organizations, HHS Regional Offices, or other entities. The HITECH-funded Regional Extension Offices would be another source of this type of assistance.

Parallel to the efforts to promote HIE in Medicare, this approach also seeks to leverage other government underwritten health programs. In fact, as discussed in greater detail below, HITECH does provide for specific support for EHR adoption among Medicaid providers with the caveat that providers cannot receive incentives from both Medicare and Medicaid.<sup>19</sup> As described in greater detail in the state approach, CMS could begin by encouraging states

to develop state plan amendments outlining how they would use reimbursement structures to incentivize HIE directly or indirectly through quality improvement programs that would reward coordinated care facilitated by HIE. This could include allowing Medicaid providers to share in efficiency gains and cost savings that result from engaging in HIE. Alternatively, an enhanced Federal Medical Assistance Percentage (FMAP) could be made available for states that establish HIOs to which Medicaid providers can connect. The Medicaid Transformation Grant program could also be expanded to further promote the engagement of Medicaid providers in HIE.

In addition, the FEHBP could establish requirements that all insurers who participate in that program engage in HIE and establish plans for incentivizing their providers to do so as well. Because the insurers who participate in FEHBP also offer plans in the private market, their efforts to make FEHBP plans compliant with the requirements might also affect individuals whose care is not underwritten by the federal government.

Similarly, in instances where the federal government is responsible for the direct provision of care, efforts could be expanded to further engage in the exchange of health information. Funding could be allocated to help expand existing efforts like the VHA VistA system or the IHS iCare. Importantly, any coding to implement these systems would be open source and its use could be promoted more broadly to private-pay health care providers as well.

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## MECHANISMS

Because this approach is focused on entities that are under the control of the federal government, some progress may be made through executive order. For example, executive order could direct OPM to implement new requirements for insurers who participate in the FEHBP. Similarly, executive authority could be exercised over VHA and IHS. To adjust requirements and reimbursement policies for Medicare and Medicaid, legislation may be more appropriate. Finally, in order to provide the direct support that may be necessary to enable providers to meet new requirements and to engage in HIE in a way that improves the delivery of care, additional funds for loan and grant programs would need to be appropriated through legislation.

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## FLEXIBILITY/OPTIONS

One of the primary areas of flexibility within this approach is the various mechanisms for restructuring reimbursement to provide incentives for HIE. Consistent with the framework established in HITECH, bonus payments could be applied first to all providers who engage in HIE in a minimal capacity and over time the criteria for that bonus payment (the amount/type of data that is exchanged or the way that it is used) could become more stringent. Indirectly, pay for performance mechanisms that emphasize health outcomes—particularly for conditions that require coordination among multiple providers—could also incentivize HIE.

Another way to better align reimbursement policy with health outcomes is to develop a greater emphasis on care coordination. This shift in focus would require a provider to have greater interaction with the other providers who care for a particular patient. Some panelists argue that in order to move towards these types of payment policies, HIE may be a prerequisite. One possible way to insert care coordination into payment policy is to expand current Medicare demonstrations that emphasize the medical home model, through which responsibility for all of the patients' health care rests with one provider or provider organization that is responsible for coordinating and integrating care across

others in the health care system. Some primary care physicians advocate this model because of its potential to address more comprehensively the needs of individuals with chronic illness and improve the care for all patients by improving coordination of care.<sup>20</sup> If Medicare provided additional payments to provider groups that act as medical homes, engaging in HIE could be one criterion for eligibility to serve as a medical home. Even without this explicit requirement for HIE, if medical home providers were able to capture some of the gains for making care better coordinated and if HIE facilitates these gains by shoring up coordination among providers, this reimbursement mechanism could indirectly incentivize the exchange of health information.

Another possibility involves restructuring reimbursement for acute services around an episode of care, such that there would be one bundled payment for care provided in and outside of hospitals. This might provide incentives for hospitals and the providers in their areas to invest in HIE in order to enhance the coordination and minimize the costs of care provided in multiple settings related to the same acute episode. This type of payment would require health information on a patient across settings of care to measure and administer payment based on their outcomes, hence its reliance on and interdependency with HIE.

A final strategy would be to allow hospitals to pass on to physicians some of the savings that accrue from increased efficiency, a practice referred to as “gainsharing.” Medicare has recently begun demonstration projects to experiment in many of these areas. As these demonstrations progress and evaluations are carried out, it will be important to draw on the lessons of these demonstrations when rolling out programs on a wider scale. Based on our review, evaluation information resulting from these demonstrations has yet to be published.

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## PHASING

Although ultimately conditions of participation would likely be the strongest aspect of this approach, it would not go into full effect for several years. It would be important to state from the outset the schedule for enacting such requirements, but not to start enforcing them until after other supports in the form of direct subsidization and technical assistance are rolled out. In addition, use of conditions of participation as a broad policy strategy for Medicare would require expansion of existing law to allow CMS more flexibility to make changes in the determination of who is eligible to receive Medicare reimbursement.

The conditions of participation, themselves, should be phased in gradually. There are several ways of structuring such a gradual implementation. One approach would be to start with a lower threshold of data exchange and make it more robust over time. Under guidance from an advisory panel, a series of benchmarks would be established. For example, the type of data that is required to qualify as engaging in HIE could be expanded over time from an initial requirement that pharmacy, laboratory, patient-level demographic and claims data be exchanged to a requirement involving more comprehensive clinical information. Similarly, the types of providers who are subject to the requirement could become more inclusive over time (e.g., initially only for providers who participate in demonstration projects or to providers who serve more than a certain number of federally insured individuals). This would allow the specific design of the participation requirements to be refined before “going to scale” on the entire Medicare program. Over time, as demonstration projects yield examples of effective exchange of health information, involvement with HIE would become a prerequisite for all Medicare providers. It might also make sense to grant small or rural providers temporary exemptions to allow them additional time to develop capacity. This gradual rollout would also allow time to establish

necessary administrative mechanisms. For example, CMS would need the authority to monitor physicians' compliance with the requirements. In addition, the national certification process for EHRs and other applications used in the exchange of health information may need to lay out increasingly comprehensive standards for certification to mirror the growing stringency of the requirements.

Incentives delivered through reimbursement could also be implemented gradually, with more direct incentives and bonus payments implemented first and then moving to more outcomes-based incentives and penalties for noncompliance over time as more providers gain the capacity to exchange health information. The implementation of incentives will need to be carefully coordinated with health care reform efforts, particularly those related to payment reform. The interdependencies will require a carefully planned strategy to ensure that the network services for HIE and participating providers are adequately prepared to meet the challenges and demands associated with a new payment mechanism developed and implemented by CMS and other private payers.

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## FINANCING CONSIDERATIONS

Imposing conditions of participation alone would only carry the costs of administration. Similarly, over time, reimbursement adjustments could be designed to be budget neutral—the bonus payments to providers who engage in HIE or meet outcome targets could be offset by reduced payments to providers who fail to meet those targets.

However, ramping up this program and offering the necessary technical assistance and direct financial support to ensure that all providers have access to exchange mechanisms could require more substantial expenditures. Financing could draw on the same variety of funding sources that currently support health care programs, such as Medicare Trust Funds, and premiums for FEHBP and Medicare Parts B and D. However, given the current strain on the Medicare financing system, there would likely need to be more sizable appropriations. (See above under “Overarching Issues” for a discussion of potential streams of new or increased revenue.)

## FEASIBILITY

The feasibility of this strategy will rest on the government's ability to work with affected industries, including providers, labs, insurers and pharmacy benefit managers, to assure that they understand their contractual requirement to participate in data exchange, the legal exemptions under which they are able to share these data without violating existing federal and state law and rules, and the guidance on how to leverage their existing technology and data management systems to meet the requirements for adequate HIE engagement. The health IT provisions in the recovery legislation represent progress towards buy-in for some of the principles described in this approach, yet some challenges remain. Negotiations about reimbursement policies would likely be monitored carefully by membership associations representing providers. Passage of HITECH has paved the way for bonus payments and penalties tied to Medicare reimbursement, but more fundamental changes in payment policy, such as moving to a case rate approach, may remain controversial.

The political feasibility of implementing adjustments in the Medicaid program might be particularly challenging. Unlike the other programs discussed in this approach, which are primarily under the jurisdiction of the federal government, Medicaid changes require negotiation among all 50 states. At a time when state budgets are particularly strapped, it

may be difficult to enlist support without substantial federal funding. As such, HITECH calls for the federal government to shoulder most of the costs associated with the Medicaid incentive program.

Because conditions of participation are such strong incentives, it seems likely that there will be ample demand from the provider community for HIE. What is less clear is whether there currently exists an adequate supply of entities that can enable the exchange of health information. It will be important that whatever grant funding is allocated to help develop HIOs is adequate and designed systematically to ensure that all providers will have the ability to connect to a system by the time any requirements are implemented. This will also depend on the resolution of various technical obstacles—including finalizing robust standards for interoperable exchange of information and demonstration of functional models for organizing that exchange—before investment is made into building this infrastructure for exchange. HITECH establishes an ambitious timeline for overcoming some of those obstacles and, for example, requires the establishment of initial standards by the end of 2009. The federal approach may have an advantage in this area because the efforts to promote HIE will be centralized in the federal government. It might therefore be easier to establish the HIE infrastructure in a systematic manner.

## COSTS, BENEFITS AND RISKS

By leveraging all aspects of federal health care, this approach would likely have a dramatic effect on the use of HIE in the next five to ten years. As mentioned above, a substantial portion of the US population receives care that is funded in part through the federal government. Additionally, because insurers and providers who participate in Medicare, Medicaid and FEHBP also operate in the private sphere, there would likely be a spillover effect on private-pay patients as well. Starting HIE in the context of a federal program would significantly decrease the costs associated with extending participation in HIE to privately insured individuals.

The impact of this approach would be greater still if, as has been proposed, the FEHBP is opened up to allow other individuals to purchase health insurance. Similarly, if the federal government were to adopt the role of overseeing another entity to serve as a “connector” to manage the marketplace for private insurance, the experiences in implementing conditions of participation and other incentives in FEHBP could serve as a valuable model.

If this approach succeeds in using reimbursement mechanisms to place the emphasis not only on the exchange of health information, but on effective exchange that influences patient outcomes or increases efficiency, it could demonstrate to patients, private insurers and providers the important benefits of HIE. This could be a crucial step in increasing the demand for HIE among individuals who do not receive care through one of the federal programs targeted in this approach. However, if conditions of participation encourage providers to engage in HIE simply to comply with requirements, there is a risk that providers will use HIE in ways that do not ultimately generate value in terms of increased efficiency or quality of care.

Because such a large portion of the patient population would be touched by this plan, and because the federal government could be well positioned to gather and aggregate data on individuals whose care it underwrites, this approach could also yield substantial information for researchers on the effectiveness of treatments. By implementing some of the reimbursement plans gradually in carefully evaluated demonstration projects, this approach could also contribute to our understanding of the impacts of different payment policies.

As discussed above, the costs to the federal government (and therefore to taxpayers) for the technical assistance and other start-up support might be substantial. Also important to consider is the burden to providers of gaining the capacity to exchange information. These costs are not only for the necessary hardware and software for providers to begin engaging in HIE, but also for the training and the workflow changes necessary for effective use of HIE. Maintenance over time is another serious expense both for HIOs and for providers who would need to ensure that their EHRs and other software and hardware necessary for HIE remain up and running. In addition, providers may face some of the start-up and maintenance costs of HIOs, to the extent that those expenses are passed on to providers in the form of subscription or transaction fees. Collectively, these expenses might be particularly burdensome for small providers. Consequently, it may be important to either give them a longer time period for meeting requirements or structuring assistance programs to give priority for funding to smaller practices. As a reference for the potential cost of incentivizing providers to implement the technology necessary for engaging in HIE, the CBO projected that the Medicare and Medicaid health IT provisions in an earlier House version of HITECH would cost about \$30 billion. These expenditures are estimated to yield a savings of \$12 billion through the Medicare, Medicaid and FEHBP programs.<sup>21</sup>

Although individuals who would gain access to providers engaging in HIE may benefit from improved quality of care, there is a potential that individuals may be adversely affected by this approach. An unintended consequence of conditions of participation could be deterring providers from participating in Medicare, although the risk is relatively small given that the vast majority of U.S. physicians do participate in the program. A more serious concern relates to Medicaid beneficiaries who might have even greater trouble finding Medicaid providers, if some leave the program as new requirements are introduced.

**Federal Government Focus and the Current Policy Environment**

Although HITECH does not go as far as the federal approach, with regard to implementing conditions of participation related to HIE, the legislation does contain provisions that would support elements of this approach:

- HITECH includes incentive payments for Medicare providers who demonstrate “meaningful use” of EHRs and also covers a substantial portion of the costs of purchasing and operating an EHR for Medicaid providers who forgo Medicare incentives. The way “meaningful use” is defined will affect how these provisions incentivize HIE.
- A state loan program to purchase and use certified EHRs and seed funding for HIOs provide additional sources of funds for helping providers.
- Federal agencies that implement or upgrade health IT systems, as well as health care providers and insurers under contract with federal agencies that implement or upgrade health IT systems, are required to use systems that meet the standards developed through HITECH.<sup>22</sup>

Additionally, there are aspects of this approach that are compatible with the Obama Administration’s proposed first steps towards health care reform. The President’s FY2010 budget describes establishing a reserve fund to help pay for broader reform. Two of the potential sources of revenue for that reserve fund relate to changes in payment policy meant to encourage more efficient, higher quality care—expanding pay for performance efforts and bundling payments to hospitals to include both hospitalizations and post-acute care.<sup>23</sup>

**STATE GOVERNMENT FOCUS**

Recognizing states’ knowledge about the on-the-ground health care market conditions in a given area, as well as states’ roles as funders and regulators of health care, this approach offers several mechanisms of federal support for

state efforts to promote HIE. First, the federal government would allocate grants to states that could be used to create new incentives through a variety of means, such as regulatory changes in conditions of participation for state administered health insurance programs, licensure and accreditation practices, reimbursement mechanisms, malpractice reforms, direct financial support and technical assistance. Second, this approach would seek to strengthen the safety net by allowing for greater flexibility in Medicaid to promote HIE. Third, the federal government would play a coordinating role to ensure that states have the opportunity to learn from each other and that HIE infrastructures allow for interoperability across state boundaries.

In addition to building on local knowledge to create more carefully tailored strategies to incentivize HIE, the state approach would encourage innovation by allowing states to act as laboratories to experiment with different models for using HIOs to establish interoperability and exchange in a manner consistent with the NHIN. Concentrated efforts to encourage coordination among health care providers and the exchange of information amongst them might have greater value if carried out on a state or more local level because individuals are likely to consult multiple providers within one region as opposed to on a national level. Although these efforts would be based on the unique demands of different states and regions, they would be developed under a framework of consistent standards and architecture that would be compatible with nationwide exchange.

The state approach also has the potential to promote the development of infrastructure for HIE and therefore address supply shortages and help ensure that providers interested in pursuing HIE have a path forward. The state approach would also target providers and patient groups that might be left out of a federal initiative. By focusing on Medicaid, the program would help ensure that the safety net keeps pace of progress in integrating HIE in patient care. In addition, HIOs established around Medicaid and SCHIP programs could be expanded to include all health care underwritten by the state and all state-level health information stakeholders (e.g., public health and state employees).

## IMPLEMENTATION

The Office of the Secretary at HHS would have lead federal responsibility for both policy development and implementation. This would include coordinating with the states and developing the enabling legislative proposals and administrative mechanisms to facilitate state efforts, while providing federal oversight. In order to prompt additional action on the state level to promote HIE, the federal government would administer a grant program to states. Similar to the program for state bioterrorism funding, states or state-designated entities would be asked to submit a plan detailing how they would use federal funds in order to spur the exchange of health information in their states. States would be offered a menu of policy components they could consider in crafting their plans. These could include developing the infrastructure for HIE, requiring and/or incentivizing HIE as part of the health benefit plans of state employees, providing direct funding and technical assistance to individual providers, and using the states' roles in licensing and certifying health care professionals and facilities. As discussed in the flexibility section below, depending on national priorities, the grant program could be designed to place priorities on particular components—such as developing or supporting HIOs—or could give more latitude to states to design programs that they feel are appropriate. Along this vein, HITECH calls for the development of a grant program to states or qualified state-designated entities for the planning and implementation of HIE mechanisms.

A second aspect of this approach is to allow states to experiment with adjusting Medicaid reimbursements to reward, either directly (through add-on payments or pay-for-performance rewards) or indirectly (through programs that incentivize high-quality, coordinated care on a capitated basis), providers that engage in HIE. CMS could offer guidance to states to encourage them to submit state plan amendments to establish more outcomes-based reimbursement methods. In order to offer stronger incentives for states, CMS could consider offering an enhanced match for some demonstration projects or other efforts in this area. For example, just as CMS pays a 75% match for expenses for operating the Medicaid Management Information System (and a 90% match for start-up funding for the MMIS), CMS could offer to pay a more substantial portion of the costs that a state incurs in developing an HIO through which Medicaid providers could easily access and exchange administrative, pharmaceutical, laboratory and clinical data. To help jumpstart health IT adoption in the Medicaid program, HITECH contains funding to cover a substantial portion of qualified Medicaid providers' costs of purchasing and operating EHRs. After the initial year of funding to cover the costs of implementing an EHR, Medicaid providers may receive payments to support most of their operational expenses, so long as they demonstrate "meaningful use" of the EHR. Depending on the definition of "meaningful use," this provision could emphasize HIE. (The Medicaid provisions in HITECH also provide payments for certain hospitals, but those payments are more consistent with the formulas used for Medicare incentives.) There may also be opportunities for states to leverage the technical assistance and administrative funding from this legislation to promote sustainability planning related to the meaningful use of EHRs to support HIE.

The Medicaid Transformation Grants (MTGs) present another mechanism for promoting HIE. A significant portion of the \$150 million in grant funding has been allocated to activities such as supporting EHR development for Medicaid populations, disease management and/or care management initiatives, and helping to establish statewide HIOs to serve Medicaid and other populations.<sup>24</sup> As many MTG grantees have already been using their MMIS systems to push claims data out to providers, leveraging MMIS dollars could further streamline existing systems with currently developing statewide HIE networks.<sup>25</sup> Given that this has been a successful federal funding mechanism to date, a state approach could encourage the continuation of providing further funding through MTGs.

Any development in this area should be consistent with the framework and models laid out in the Medicaid Information Technology Architecture (MITA) initiative. To ensure that children also benefit from access to providers who are exchanging health information, incentives in the Medicaid program could also be carried over into SCHIP. Over time, as state efforts to increase HIE in Medicaid programs yield success stories, CMS could consider imposing requirements that HIE promotion be integrated into state plans in order for states to participate in the Medicaid program.

The third prong of federal involvement in supporting state HIE efforts is to play a convening role in bringing states together to learn from each other and coordinate their efforts. Currently operating federally supported efforts such as the State Alliance for e-Health, the State and Regional Demonstration projects, HISPC and the State-level HIE Consensus Project provide models that could inform states now as they develop and implement initiatives to promote HIE. As part of this approach, the federal government would continue to provide a forum for states to present their challenges and successes in HIE and to work together to ensure that efforts in each state would still allow for interoperability across borders. This forum might also provide an opportunity for states to influence accreditation standards at the national level.

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## MECHANISMS

Federal legislation would be required to appropriate funding for the state grant program, although some such funding may already be accessible through HITECH. For the Medicaid options, CMS could encourage and provide assistance to states to adjust their reimbursement mechanisms in a budget-neutral manner. However, if funding beyond what is allocated in HITECH for payments to Medicaid providers who purchase and operate EHRs and to states to administer those programs were required to extend a special enhanced match to states, legislation might be required.

Another requirement of this approach is the establishment of a process for determining how to allocate grants to states. Although the strength of the state plans will be an important consideration, other factors could be considered as well. If the emphasis is to support providers who may be particularly unlikely to engage in HIE on their own, it may be appropriate to provide more funds to states that are earlier in their development of an HIE plan than to those states that have already invested heavily in HIE. On the other hand, if the goal is to demonstrate value, it may be appropriate to help several states develop gold-standard HIE promotion initiatives to serve as models to other states.

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## FLEXIBILITY/OPTIONS

The greatest flexibility under this approach is in structuring the grant program for states. There are a variety of activities that states could incorporate into their plans in order to promote HIE, including the following:

- ▶ **Governance Entities:** States could support the development of sustainable state-level HIE governance entities or of regional or other forms of HIOs through various financial mechanisms such as appropriations (i.e. budgetary spending), grant and contract funding, and agency operational funding.<sup>26</sup> Such an effort may have an initial emphasis on ensuring that providers and insurers involved in Medicaid and state employee health benefits plans have access to a mechanism for exchanging health information.
- ▶ **Public Utility Model:** States could use grants to establish HIOs that are heavily regulated private entities where supply is guaranteed and prices are structured following a public utility model.
- ▶ **Private Matching Funds:** States could leverage federal funds by requesting that governmental funding be matched by similar contributions from the private sector. This could help stimulate initial buy-in from large health care stakeholders who would substantially benefit from predominately state-sponsored HIE. As the regulators of health insurers, states could assess health insurers a set amount per member or transaction—an approach being used in Vermont. (However, an Employee Retirement Income Security Act (ERISA) exemption might be required to allow those assessments to extend to self-insured plans.)
- ▶ **Carrots and Sticks for State Insurers and Providers:** Consistent with the discussion of the FEHBP in the federal approach, states could develop a series of carrots (reimbursement, start-up funding) and sticks (participation requirements) to providers or insurers who take part in providing health benefits for state employees.
- ▶ **Licensure and Accreditation:** Engagement in HIE could be integrated into the licensing and accrediting of health care facilities and states could support the development of accreditation standards and processes for HIOs. Additionally, education designed to help providers use HIE to improve the quality and efficiency

of care could be developed and could count towards continuing education requirements for physicians, pharmacists and other providers.

- ▶ **Health Planning:** Assessing the ability of a provider to engage in HIE could be incorporated into health planning efforts. For example, if a hospital decides to upgrade its health information technology system, it could be required to demonstrate plans to engage in state-level HIE as part of an application for a certificate of need (CON). (This strategy has been adopted by the State of New York.)
- ▶ **Direct Funding:** States could pass along direct funding to providers, for example by distributing grants or loans or implementing tax incentives, to support start-up expenses of providers who could demonstrate a plan to integrate HIE into their workflow to improve the quality of care. Direct financial support might be particularly important to subsidize public health reporting and HIE for safety net organizations—two areas that are unlikely to be initiated by market demand.
- ▶ **Technical Assistance:** States could ensure the availability of technical assistance to help providers effectively engage in and sustain HIE through either the direct provision of such assistance or by entering into contracts with third party vendors and generating a volume discount that could be passed on to providers. These state TA efforts could complement the assistance incorporated in HITECH.
- ▶ **Malpractice Insurance Premiums:** States could work with malpractice insurers to encourage them to reduce premiums for entities who engage in HIE. (Some medical malpractice companies do reduce premiums for HIE; however expanding the number who do so, or making those premium reductions more sizable, may prove challenging if there is insufficient actuarial data to support these reductions. A potential role for state or federal governments would be to conduct research to demonstrate the association between patient safety and participation in HIE.) Another strategy, which could break down an even greater barrier for providers, is enacting state law to indemnify providers who follow set privacy and security guidelines against liability for damages (or create a state fund to cover those damages) resulting from breeches in security or other risks that providers who take reasonable precautions may be exposed to by engaging in HIE.

An important decision on the federal level is whether to channel states towards certain mechanisms. For example, in an effort to ensure that all providers who are interested in engaging in HIE have access to a HIO, the grant program could require that at least a portion of the funds go towards the development of governance entities on a local, regional or state level, if such entities do not currently exist. The federal government could also place an emphasis on data exchange involving safety net providers and the exchange of public health data. For example, when New York State designed its grant program for HIOs, it included specific objectives related to making public health surveillance reporting more automated and making it easier to make Medicaid eligibility determinations.

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## PHASING

To increase the likelihood that state initiatives will lead to sustainable HIE, it will be important to provide states with adequate time to prepare rigorous plans or roadmaps. In order to advance strong leadership and support for e-health efforts on a state level, each state may need to consider developing a roadmap that strongly considers phasing by not only leveraging existing efforts, but also defining statewide objectives, specific steps for implementation and

measurable goals for adoption of health IT systems.<sup>27</sup> Thus, some states that have already developed careful plans for rolling out HIE on a broad level in their states may be able to apply for substantial implementation grants in the first year of the grant program, while other states that are less advanced may initially need more modest planning grants. This would also stagger the roll-out of state initiatives, which would allow later states to benefit from the experiences of pioneer states. Within the state plans, it is anticipated that states would demonstrate an understanding of the necessary phasing of their efforts. For example, states may want to put in place TA to help providers to use HIE in an effective manner that guards patient privacy before attempting to negotiate with malpractice insurers on premium reductions. Within the Medicaid prong of this approach, adequate support may need to be invested in developing an infrastructure for exchange before it is worth creating incentives to encourage effective engagement in HIE.

The duration of the grants is another important consideration, which would affect not only the funding commitment of the federal government but also the likelihood that initiatives would be designed to depend on federal support over the long term. Given that the goal is to promote sustainable HIE, it may be important to specify that the grants are meant to be time-limited and to require each state to demonstrate its plans for ensuring that efforts would continue after the grant ended. Because funding for some aspects of HIE—like public health reporting or HIE for safety net providers—may have less potential for sustainability, it may be appropriate to separate those from the overall grant program and allow for longer term federal or state subsidization for those components.

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## FINANCING CONSIDERATIONS

Given the current financial crises facing many states and their limited ability, relative to the federal government, to access resources to cover budget shortfalls, initial financing for this approach would likely come from the federal government. There is still the option to require matching funding from states and to vary the matching fund requirement. While this could lower the costs to the federal government and elicit greater commitment from local communities, it could dissuade some states from participating in the grant program. If matching requirements are implemented they could be structured like the FMAP to require higher matches from states with higher per capita income.

## FEASIBILITY

Currently, state budgets are strained. Although states might welcome an infusion of cash in the form of grants, substantial matching requirements might prove challenging at this time. It may be particularly difficult to persuade states to invest in their Medicaid programs unless there were very clear returns for doing so (i.e., a greatly enhanced match or clear gains in efficiency). Additionally, in tough economic times, states may be concerned about running into SCHIP spending caps, reducing the likelihood of expanding the scope of those programs. Furthermore, given that current Medicaid reimbursement rates tend to be lower than rates provided in Medicare, it may be difficult to develop budget-neutral reimbursement incentives—it may be challenging to withhold payment from all providers in order to establish a fund that could pay out benefits substantial enough to incentivize provider behavior. Similarly, although the vast majority of states do have some form of pay for performance or pay for participation system, Medicaid directors express concerns that penalties or differential payment structures might deter some providers from participating in the program.<sup>28</sup>

The approach's provisions for the development of state or local HIOs may be an important prerequisite for any broad initiative to encourage HIE. By helping to build the infrastructure for HIE, this approach addresses key shortcomings in the supply that might make other approaches less feasible. To lead to sustainability, efforts focused on building the supply for HIE would need to be complemented by initiatives to bolster the demand among providers or among the public. A better alignment of the benefits and costs of HIE may be necessary to build the business case for HIE and its sustainability.

## COSTS, BENEFITS AND RISKS

The scope of the costs for the federal government (and taxpayers) could vary widely depending on how the approach is implemented. Federal funding could either be presented as a spark to augment substantial state funding or as the driving force contributing the bulk of the funding. If one of the key aspects of this approach is the development of statewide infrastructures for HIE, those expenses would differ dramatically depending on the state and the model it chooses. For example, when Delaware established its system it received \$5-million from the state, \$2-million from the private sector, and \$5-million from the federal AHRQ for start up.<sup>29</sup> At the same time, New York is investing more than \$200 million to support health IT adoption and the development of an interoperable health information infrastructure.<sup>30</sup>

Although it may be costly to push the part of this approach that focuses on developing HIE infrastructure, this could yield the greatest benefits and have the most profound effect on the state of HIE over the next five to ten years. This addresses a crucial supply concern by establishing pathways to allow providers to engage in HIE. However, the mere existence of such a pathway may not be enough to encourage a provider to take advantage of it. Thus it is hard to know how great the impact of this approach would be if not supplemented with a concerted effort to increase demand. Also, if efforts to build the supply are not adequately aligned with the ultimate benefits, new HIE mechanisms might not be able to deliver more coordinated, higher quality, and more efficient care. In this case, the investment in the infrastructure may not be worth its costs. It is important, therefore, for efforts to help build HIE infrastructure to be informed by and coordinated with broader payment and health reform initiatives.

Providers stand to gain, particularly if there is the provision of direct support without an associated requirement that they meet certain goals using HIE. In addition, greater availability of HIOs might lower burdens for practices to begin exchanging health information.

Individuals might benefit from gaining access to HIE through Medicaid and other safety net providers. Yet again, the impact on patient care would depend on how well providers use these resources. Technical assistance and continuing education focused on transforming the delivery of care could help produce value for patients.

**State Government Focus and the Current Policy Environment**

Provisions in HITECH could support several aspects of this approach:

- Grants to states or qualified state-designated entities could support the design and implementation of HIOs or other mechanisms for exchange. This grant program could also support other efforts to promote HIE within the state.
- The federal government will provide states and Indian tribes grants to establish loan programs to help providers purchase and use EHRs.
- Through incentives that cover a substantial portion of the costs of purchasing and operating EHRs, Medicaid providers would likely be generating data in structured forms that would facilitate HIE. Technical assistance and other administrative money in the legislation could also help to ensure the meaningful use of such applications.
- Notably, providers are not eligible to receive EHR incentive funds from both Medicare and Medicaid.

**PRIVATE SECTOR FOCUS**

This approach focuses on the use of tax policy to create new incentives for stakeholders to establish infrastructure for exchange on an institutional, community or regional basis and to participate in that exchange on an ongoing basis. The approach also makes use of direct subsidies or guaranteed loans to health care providers and stakeholders to create an effective “supply” of HIOs. Effective use of tax policy would most likely mean new corporate tax exemptions and refunds accruing to for-profit providers, payers and employers to encourage expenditures associated with establishing and participating in HIE. Also, existing tax policies that benefit expenditures on health care, such as tax exemptions for employer health insurance expenses, may be modified to include new requirements for eligibility. New tax incentives could represent a rewards or “carrots” based approach, and the establishment of new requirements to maintain eligibility for existing tax benefits would represent a negative incentive for participation in HIE.

Tax incentives would give private actors new reason to implement practices that promote a public good. Because tax exemptions and refunds can be applied to a range of activities, this approach allows for extensive flexibility in terms of which aspects of developing opportunities for HIE it supports. For example, for-profit entities could recognize tax benefits from investment in a diverse set of activities from participation in governance and organization of a regional HIO to the purchase of software and applications to support sustainable participation in HIE.

The more detailed description that follows draws a contrast between exemptions or policies that exclude specific types of spending from taxable income and tax refunds, where specific types of activities would effectively be reimbursed by the federal government through tax returns. We note that while exemptions based approaches would only apply to for-profit entities, the “tax refund” concept ultimately amounts to a direct subsidy and that mechanisms can be established to offer subsidies to non-profit stakeholders as well.

**IMPLEMENTATION**

The Office of the Secretary at HHS would have lead federal responsibility for both policy development and implementation. This would include coordinating with the Secretary of the Treasury and developing the enabling legislative proposals and administrative mechanisms.

There are a number of different options available to policy makers for providing tax advantages to encourage HIE adoption. For providers with current tax liabilities—i.e., for-profit organizations—the current deductibility of HIE expenses could be enhanced by providing tax exemptions for HIE expenses. Going even further and providing financial incentives for those providers who currently do not face tax liabilities—i.e., non-profits—a tax credit for HIE adoption could be implemented. States could use a similarly broad array of tax incentive tools to promote HIE. Governments could also employ other forms of subsidies, such as developing a guaranteed loan program, to help establish entities to oversee and govern the exchange of health information. One of the strengths of this approach is the wide range of potential tax levers that may be employed and the different potential targets for incentives. The section on options below outlines some of the variations in the way this approach could be implemented.

As with any policy designed to modify the behavior of market participants through new incentives, there should be a clear understanding of the existing opportunities that for-profit entities have to establish and participate in HIE and how those opportunities will change over time. In other words, subsidization might need to be more substantial in earlier stages when there is limited existing infrastructure for exchanging health information. As more mechanisms for exchange are developed and a substantial portion of providers are engaged in these exchange activities, the subsidies could phase out. Ultimately, engaging in HIE could be considered a “cost of doing business,” rather than a behavior that merits rewards through the tax system.

Pursuing this policy approach requires the development of a clear understanding of the activities that would comprise participation in HIE. The ability of this approach to promote sustainable HIE depends in part on the ability to define the criteria for eligibility for the tax incentives precisely enough to ensure that only entities that are advancing HIE in a manner consistent with the program’s goals are able to claim the incentives. Additionally, in determining the appropriate dollar amounts for the incentives, it will be necessary to enumerate accurately the costs associated with those activities. Separate policies would likely have to be developed for providers, payers and employers, and separate rules would have to be developed to address each of those policies.

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## MECHANISMS

The path for defining and implementing tax based incentives would involve legislative change to elements of the tax code. This approach would also require development of detailed rules and regulations and the establishment of new processes for monitoring and assuring compliance with conditions for eligibility for tax benefits. It may also require extension of HIE related exemptions to federal anti-kick back and self-referral legislation.

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## FLEXIBILITY/OPTIONS

There are a number of possible strategies for implementing this approach. Several scenarios are outlined below.

- ▶ **For Providers and Payers in Places Where There Is an Existing HIO:** Entities that operate in locations where they are eligible to participate in exchange through a regional, state-level, or other HIO could be offered tax advantages for expenditures related to participation in the exchange consistent with national standards. These expenditures could range from the purchase of software on the part of providers to dues and fees associated with participation in the exchange and use of data provided through the

exchange. In addition, any time spent by a provider or payer organization's leadership in providing governance and oversight or participating in decision making committees necessary for the operations of the HIE could be subject to these tax incentives.

- ▶ For Providers and Payers in Places Where There Is No Existing HIE Infrastructure: Entities that do not have access to an existing HIO (the majority of entities currently) could be offered tax advantages for expenditures on efforts related to establishing new avenues for exchange. These activities could range from establishing individual exchange between entities such as ambulatory care providers, acute care providers, pharmacies and clinical laboratories or the establishment of a community or regional infrastructure for broader exchange. The incentive program could mandate that any such exchange be consistent with national standards in an effort to develop exchange mechanisms that may start off as one-to-one exchange, but could eventually also link into to a broader HIO or nationwide framework.
- ▶ For Employers that Offer Health Insurance to Employees: Under current law, employers offering health insurance benefits to their employees are exempt from taxation for income used for those benefits. In an effort to encourage non-government purchasers to create incentives for HIE, this exemption could hinge on whether employers require HIE participation on the part of payers or providers that participate in their health care benefit. Alternatively, employers that are able to establish HIE incentives as part of the benefit may be offered additional tax refunds.
- ▶ For Other Entities Engaged in HIE: HIOs could also be direct recipients of subsidies, rather than having funds trickle down through providers in the form of fees. For example, organizations that have established a plan to create a platform of exchange might be eligible to apply for loans through a federally guaranteed loan program to cover the costs of getting exchanges up and running.

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## PHASING

Direct subsidies (tax-based or otherwise) may be most extensive in the short term and taper over time. In designing these incentives, it will be important to assure that they continue to align with the overall objectives of HIE. For example, as the opportunities for participation in regional HIOs expand to more and more providers, it may no longer make sense to allow tax advantages in response to provider efforts to establish one-off exchange or to create new competing HIE mechanisms. In addition, as exchange becomes more common, the emphasis of this policy may shift to less generous tax advantages, e.g., deductibility, rather than a credit.

Tax policy designers have sometimes used very specific limitations in the originating legislation to both limit the overall tax expenditure and provide strong incentives for early adoption of the desired policy. The best recent example of this type of design is the federal deductibility for purchase of a hybrid vehicle. By limiting the deduction to the first 600,000 cars sold per manufacturer, it limited the size of the tax expenditure, provided a strong incentive for early adoption, and promoted competition between manufacturers. It may be important to establish sunset provisions in the legislation originally authorizing these tax incentives. In addition to motivating potentially eligible entities to engage in the desired behavior early on, sunset provisions may mitigate the risk that once introduced into the tax code, tax incentives can be difficult to remove at a later date.

## FINANCING CONSIDERATIONS

Depending on the way this approach is implemented, the total costs could vary substantially. A tax incentive limited to a modest number of providers with a short time duration would naturally be less costly than a set of tax incentives open to all eligible providers. Similarly, the dollar amount of the incentives could be set to cover a small portion of the expenses associated with engaging in HIE and to require a substantial investment on the part of the provider or payer, or to cover the vast majority of the total costs. Determining the appropriate proportion of the federal contribution is dependent on the ability to accurately estimate the minimum amount of incentive necessary to entice the intended targets of the program to take it up.

In the short to medium term, the federal government would see significant reduction in tax revenue as a result of this approach. There may be opportunities for limited offsets through modification of the exemption for employer-sponsored health care benefit expenditures; however modification of this exemption represents the most difficult to monitor and politically controversial option included in this approach. Other options for tax-based offsets include the establishment of new consumption-based taxes meant to discourage specific behaviors such as smoking or gasoline consumption. While these taxes are likely to generate revenues in the short run, they most likely cannot sustain medium or long term expenditures because they will ultimately lead to reduced consumption and less revenue.

Although this approach is primarily described as being driven by federal funding, similar efforts could also be carried out on a state level. It is also possible that such a program could be funded through an assessment on all covered individuals. Having all insurers liable to pay a set fee per member and channeling that money back into subsidies would not only provide a source of funding, but also help alleviate a key challenge to private sector investment in HIE. Although some insurers have helped finance the infrastructure for HIE and health IT in general, there is some reluctance to do so because the contributions of one insurer might benefit other insurers who are not making a similar contribution. Several panelists raised this concern about a free rider problem and suggested that a broad-based assessment might help address this obstacle.

## FEASIBILITY

This is a potentially popular approach among health care providers and payers. If tax exemption is emphasized over direct subsidization, there will be concerns from the perspective of non-profit payers and providers who may be excluded from many of the benefits. Naturally, the total cost of the subsidy program will also factor into its political feasibility. The approach may be more palatable if it is perceived to be a time-limited investment in HIE rather than an on-going subsidization. However, in order to be most effective, this approach will have to effectively combine subsidies and tax breaks meant to encourage supply (establishment) of HIE as well as maintenance (sustainability) of HIE, which may imply a longer time horizon.

Altering the tax exemption for health care, which could help reduce the costs of the program to the federal government, could also prove to be the most politically tricky to implement. Anything perceived to be a threat to the system of employer-sponsored insurance is likely to meet resistance.

## COSTS, BENEFITS AND RISKS

In the ideal scenario, the strategy of using private sector tax incentives to motivate establishment and participation in HIE would provide a significant level of up front financial support to help health care market participants develop effective means for exchanging health information and provide appropriate levels of support over time to motivate continued participation in HIE. Even if only a segment of the market decides to take advantage of tax incentives, they could form a large enough group to represent the critical mass necessary to reduce the costs and increase the benefits associated with participation in HIE, thereby encouraging widespread adoption of HIE.

There are also a number of risks and challenges associated with this approach. To the extent that the “supply” of existing HIOs is not broadly available, the strategy of using tax incentives to encourage the establishment of HIOs may be difficult to monitor and may not be as cost-effective as more directive approaches or the use of direct subsidies. Without a clear path towards sustainable HIE and the means to monitor and ensure that activities will lead to intended goals, there is the potential that entities will receive tax advantages without substantially achieving intended objectives. In general, as one panelist warned, the tax system can be a blunt tool with limited precision and ability to be accountable for accomplishing policy aims. While it carries some administrative challenges, it is possible for the Treasury to enforce that money is being spent to buy certain applications or pay fees for certain services. It would, however, be impossible to guarantee that those investments actually contribute to larger goals, such as care coordination or improving health outcomes.

To fully address supply issues related to HIE, a competitive, robust market of network service providers or vendors offering the necessary technology must also be available. This approach does not directly bolster this market, but assumes that with increased demand, such a market will emerge. However, while that market is maturing it is possible that governance entities interested in establishing mechanisms for exchange may not have access to sufficient choices in technologies and technical support services.

Another risk inherent in any form of subsidy is that a substantial portion of the funding may go to support entities for engaging in a behavior they would have adopted in the absence of the incentive. Although limiting the tax incentives to the first number of providers who engage in HIE might help lower the costs of the program, it is likely that those providers who are motivated enough to adopt HIE in the earlier days are the same ones who would have pursued it regardless of the incentive. Finally, once established, tax advantages can be challenging to reduce or eliminate.

Some have posited that, over time, if the policy succeeds in encouraging HIE on a broad scale, the government could see financial returns in the form of lower overall health care expenditures. Lower expenditures on health care could return financial benefits to the government in two ways. First, there is the opportunity for federally funded health care programs such as Medicare, Medicaid and the FEHBP to experience greater efficiency and reductions in health care expenditures. Second, as private sector expenditures on health care benefits decrease, so will tax exempt health care expenditures on the part of employers, increasing the share of private revenue that is taxable. It is important to note that there is little empirical evidence beyond expert opinion to support these conclusions regarding medium to long term return on investment based on a greater base of taxable income. Still, some estimates of the returns from HIE, including those generated by CBO,<sup>31</sup> do include modest increases in tax revenue resulting from lower health care costs.

It is also worth considering the impact of this approach on different types of stakeholders. As mentioned above, channeling the incentives through the tax exemption for employer-sponsored insurance might prompt some employers to stop offering coverage. This could leave some employees worse off if they have difficulty obtaining comparable coverage in the individual health insurance market. Larger employers would be more likely to change their plans to comply with new requirements. However, this might have the unintended consequence of spurring consolidation among insurers and third-party benefit administrators, as currently relatively few would likely have the capacity to meet such requirements.

The positive incentives emphasized in this approach are likely to be appealing to providers. However, it is important to note that not all providers would be affected in the same way. Unless funding mechanisms are designed specifically to be able to benefit non-profit organizations and are able to cover all or nearly all of the costs of start up and maintenance of HIE, it is unlikely that safety net organizations, such as federally qualified health centers (FQHC), would benefit from this approach.

#### **Private Sector Focus and the Current Policy Environment**

Although HITECH does not use the tax system as a primary tool for promoting the adoption of health IT or increased engagement in HIE, it does provide some funding that could potentially spur on private-sector activity in HIE in ways that are similar to those contemplated in this approach:

- A loan program is established to support the purchase of certified EHRs by health care providers.
- State-designated entities are eligible for grants to develop HIE infrastructure or otherwise promote HIE. The federal government will provide states and Indian tribes grants to establish loan programs to help providers purchase and use EHRs.
- Payments to Medicaid providers would reimburse a large share of the costs of purchasing and implementing EHRs.

## **INTEGRATING APPROACHES**

For the purpose of analysis, this report lays out four approaches. However, a combination of elements from these approaches may be appropriate to more effectively promote sustainable HIE. The panel emphasized the fact that many players will be involved in ensuring that Americans have access to care that incorporates information from all of their providers. In developing a comprehensive policy initiative, different entities can be called upon to play different roles. Panelists began to outline some of the key activities that must be accomplished in order to promote sustainable HIE and initial thoughts on which stakeholders may be best positioned to take a prominent role in addressing those functions.

One recurring comment from the panelists was the need for federal oversight in developing one uniform set of guidelines for HIE architecture and consistent technical standards for interoperability and privacy policies. Many raised concerns that if there is no central oversight in developing a nationwide health information network, there will be no way for individuals to have their care integrated across providers located in different states. HITECH may have planted the seeds for increased availability of health information through its incentives for EHR adoption. However, without standards to ensure the interoperability of those data, widespread exchange may not be possible. Consistency across states would also help employers, insurers and third party administrators that operate in multiple regions. Bringing

order out of chaos—as one panelist described the concept of making the infrastructure and policies of exchange more uniform across the country—may help to control the costs of HIE nationwide.

The federal government might be well-suited for these roles given its experience in coordination across states and its ability to leverage the necessary expertise to delve into complicated technical and privacy policy issues. There may also be a federal role in clarifying or modifying regulations and laws that might inhibit the exchange of health information—for example, the provisions of the Clinical Laboratory Improvement Amendment that impede the sharing of laboratory data. The federal government might also be able to provide guidance on the legal liabilities that HIOs and providers might be exposed to as a result of their engagement in HIE. These observations suggest the importance of maintaining and potentially expanding the role that the federal government currently plays as described in the first approach, “Nonfinancial Assistance.”

At the same time, states may be well positioned to support the development of the HIE infrastructure. With their knowledge of the on-the-ground conditions in the medical markets of each state, states may have a better understanding of local and regional needs and could tailor the design of HIO mechanisms to meet those needs. As regulators of health insurance, states may have unique levers for incentivizing provider participation in HIE. For example, states could use health planning and certificate of need authority to direct providers to engage in interoperable HIE. States might also try to work with entities that license medical providers or malpractice insurers to implement initiatives that are supportive of HIE.

Both federal and state governments might play key technical assistance and public education roles. They could help ensure that providers and insurers are engaging in information exchange in a manner that maximizes benefits to a number of players, including providers, insurers, payers and patients. If patients realize benefits from information exchange, they could exert pressure on providers by seeking out physicians and care facilities that use data from multiple sources to coordinate their care.

In addition, because there are elements of HIE infrastructure that resemble a public good, governments could develop financing mechanisms that reflect the many beneficiaries of HIE. Most notably, investments in HIE infrastructure can suffer from concerns about a free rider problem; insurers and purchasers may be reluctant to support the development of HIE infrastructure or to help providers with start-up costs because in so doing they might subsidize an infrastructure that could be used by beneficiaries of other insurers and purchasers. State or federal governments could organize subsidization schemes to avoid this scenario by requiring that all insurers contribute a set amount per member that would help pay for infrastructure that would be used by all providers in a state.

Particularly if governments help lay the groundwork for HIE by developing guidelines and standards, the private sector has a crucial role in implementation. Purchasers and insurers stand to gain from improved efficiency and from better health outcomes that result from HIE. As such, they might impose conditions of participation and incentives through reimbursement systems to encourage providers to engage in HIE. HIE initiatives that emerge from the market may be structured around areas that have the greatest potential for producing value. For example, HIOs that are motivated in large part by the private sector are likely to serve providers within one medical market, rather than risk fracturing medical markets by developing structures that are based on state borders. Innovation from the private sector may also be important in developing applications that generate the greatest demand from consumers.

One potential way to build on the innovation of the marketplace is to encourage the “franchising” of existing HIOs. Multi-stakeholder groups that come together to define governance structures and policies for exchange may contract with HIOs that have already demonstrated sustainable models, in order to take advantage of their technology and expertise.<sup>32</sup> This approach may also foster a quicker path to building HIE infrastructure compared to relying on each governing entity to start from scratch. (Franchising, as one panelist pointed out, might only be feasible once there is consensus about what services are valuable.)

In developing a comprehensive initiative to advance towards the goal of ensuring widespread, sustainable HIE, it is important to consider both the roles that these important stakeholders can play and the sequencing of events. Some groundwork may need to be established to support nationwide HIE, including developing architecture and standards/policies for interoperability and privacy. It is also important to ensure an adequate supply of mechanisms to allow for the exchange of health information.

Continued progress in the area of standards and infrastructure should be an important component of investment and effort in the short term, and it may be important to ensure that a strong foundation in this area is created before health care providers, vendors and network service providers invest in systems that are not ultimately compatible. It is also important that health care stakeholders understand precisely what will be expected of them as incentives are implemented. (In the context of HITECH, this includes the definition of “meaningful use” of EHRs and how it pertains to HIE, as well as whether there are also incentives for improved health outcomes or coordinated care.) As guidelines emerge, it may be desirable to begin implementing policies to encourage providers, payers and purchasers to engage in HIE. In particular, if providers and payers understand the projected timing for when incentives and penalties will be phased in, they may be better positioned to make decisions about what technology and applications to invest in and to begin making workflow changes to meet those goals.

Within these efforts to push health care entities towards participation in the exchange of information, it may make sense to follow a progression that first emphasizes steps to facilitate participation in HIE by helping to defray the initial start-up expenses and providing technical assistance to improve implementation. Next, positive incentives delivered through the payment system can encourage providers and payers to adopt and then meaningfully engage in HIE. Finally, positive incentives can give way to penalties, delivered either through payment policy or through other regulatory mechanisms, for those providers who do not participate in HIE. Incentives may also shift over time from process measures to results-oriented measures. For example, although in the first two years of the program an initial definition of “meaningful use” of EHRs for Medicare providers to be eligible for incentive payments may be based on whether providers exchange data, it may be appropriate for the definition to become more rigorous to require demonstration of improved coordination or better clinical outcomes in the third year. Table 3 presents these phases and describes the potential role of key stakeholders in each. It also highlights the opportunities to leverage funding in HITECH to help carry out those activities.

**Table 3: Integrating Across Approaches**

Phases	Key Activities	Stakeholders / Potential Role	Opportunities in HITECH
<b>Lay the groundwork</b>	<ul style="list-style-type: none"> <li>▪ Development of a nationwide architecture</li> <li>▪ Establishment of interoperability standards</li> <li>▪ Alignment, clarification of privacy/security requirements</li> <li>▪ Education on HIE benefits</li> </ul>	<p><b>Federal:</b> Serve in a leading role to ensure nationwide HIE. Provide overall direction on nationwide architecture. Establish which standards and privacy policies must be in place in order for IT applications to qualify for certification and for health care entities to qualify for federal funding (Medicare, Medicaid, subsidies). Fund/deliver education to providers/patients on HIE benefits.</p> <p><b>State:</b> Provide input on policy development.</p> <p><b>Private sector:</b> Provide input and demonstrate models of successful HIE.</p>	<ul style="list-style-type: none"> <li>▪ ONC is legislatively authorized to coordinate health IT adoption efforts</li> <li>▪ ONC is charged with adopting initial HIT standards by 12/31/09. HIT Standards Committee is established</li> <li>▪ Expanded security and privacy requirements under HIPAA</li> <li>▪ Research and regional TA program</li> </ul>
<b>Ensure supply</b>	<ul style="list-style-type: none"> <li>▪ Establishment of HIOs</li> <li>▪ Development of a competitive market for technology service providers</li> <li>▪ Dissemination of best practices for establishing and governing HIOs</li> </ul>	<p><b>Federal:</b> Provide funding either to states to allocate or directly/indirectly to HIOs in the form of tax incentives, loans and grants. Highlight best practices.</p> <p><b>State:</b> Develop statewide HIE mechanisms or provide oversight/guidance of and administer federal funds for regional efforts.</p> <p><b>Private sector:</b> Providers, payers and purchasers can participate in development and governance of HIOs. Non-profit and for-profit entities can operate exchanges that reflect local medical markets.</p>	<ul style="list-style-type: none"> <li>▪ Grant program to states or state-designated entities could provide seed funding for HIE infrastructure</li> <li>▪ Health IT Research Center, regional extension centers and programs at academic institutions could support studies on best practices</li> </ul>
<b>Facilitate participation</b>	<ul style="list-style-type: none"> <li>▪ Direct subsidies</li> <li>▪ Technical assistance (TA)</li> </ul>	<p><b>Federal:</b> Provide substantial support through tax incentives or other subsidies to help providers and payers purchase the necessary software and hardware for exchange, re-arrange work practices to take advantage of it and potentially support maintenance. Help cover costs for FQHCs and other safety net providers. Provide TA to maximize potential benefits of HIE.</p> <p><b>State:</b> Administer/provide oversight for federal grant programs. Implement state tax incentives. Support HIE for public health, other safety net providers. Deliver TA.</p> <p><b>Private sector:</b> Recipients of direct subsidies.</p>	<ul style="list-style-type: none"> <li>▪ Grants to states or tribes for loan programs for purchase/use of EHRs</li> <li>▪ Funding to Medicaid providers for adoption and use of EHRs</li> <li>▪ Funding for community health centers to acquire health IT systems</li> <li>▪ TA through Health IT Research Center and extension centers</li> </ul>
<b>Reward participation</b>	<ul style="list-style-type: none"> <li>▪ Positive payment incentives</li> <li>▪ Malpractice premium assistance</li> </ul>	<p><b>Federal:</b> Reward engagement in, or outcomes from, HIE in Medicare, Medicaid, FEHBP, VHA, IHS, etc.</p> <p><b>State:</b> Implement payment incentives (pay for performance, care coordination models) in state employee benefits plans, Medicaid. Work with malpractice insurers to lower premiums for providers who exchange information or reduce liability for privacy breaches if providers engage responsibly in HIE.</p> <p><b>Private sector:</b> Providers and payers would need to implement HIE and re-organize their delivery of care to improve health outcomes. Payers and purchasers could implement similar rewards for providers seeing private-pay patients.</p>	<ul style="list-style-type: none"> <li>▪ Incentives to Medicare providers who demonstrate meaningful use of EHRs</li> </ul>

Phases	Key Activities	Stakeholders / Potential Role	Opportunities in HITECH
<p><b>Require participation</b></p>	<ul style="list-style-type: none"> <li>▪ Conditions of participation</li> <li>▪ Negative payment incentives</li> <li>▪ Certificate of need</li> </ul>	<p><b>Federal:</b> Make engagement in HIE a requirement for providers and payers in FEHBP, Medicare. Reduce Medicare reimbursements for providers not exchanging information. Potentially make tax exemption for employer sponsored insurance contingent on HIE.</p> <p><b>State:</b> Initiate conditions of participation for state employee benefits plans. As part of CON application, require hospitals investing in health IT to connect to HIOs.</p> <p><b>Private sector:</b> Providers and payers would need to engage in HIE or risk losing potential sources of payment. Payers (in Medicare or FEHBP) might need to implement plans to incentivize their providers to take up HIE. Employers might exert pressure on third-party administrators to ensure compliance with new requirements.</p>	<ul style="list-style-type: none"> <li>▪ Penalties phased in over time for Medicare providers who do not demonstrate meaningful use of EHRs</li> </ul>

## CONCLUSIONS AND FUTURE IMPLICATIONS

This report purposefully covers a wide range of approaches that could be employed by policymakers seeking to establish and sustain HIE in the United States. The key inputs for the materials presented here include an extensive environmental scan of available information on the overlap between HIE and policy or programmatic initiatives and, most importantly, engagement from over 20 experts from the fields of public policy, economics, medicine, research and IT. While the project did not seek to achieve consensus on a specific approach, it does outline areas of agreement regarding the universe of policy options and the key considerations inherent in pursuing those options.

As we noted in our introduction, the project underlying this report began in the summer of 2008, well before widespread understanding of the extent of the downturn facing the American financial system and the broader economy, the 2008 national election and the imperative to pass ARRA. ARRA and HITECH have changed the landscape for health care stakeholders and policymakers charged with identifying opportunities to facilitate sustainable HIE; however many of the fundamentals around creating incentives to overcome technical, legal and economic barriers persist.

While some of these areas will be addressed in the implementation and rules development processes coming out of HITECH, others may require new program initiatives led by Congress, states, the executive branch or the private sector. In particular, the discussions with panelists suggest that broader health care reform initiatives should consider HIE as a means to achieve key goals such as increased consistency, efficiency and cost effectiveness of health care delivery. HIE may be integral in implementing specific types of payment reform, which may require integration of information on services provided across a period of time or in different provider settings, both as a means of gathering the data necessary to calculate appropriate payments and as a key tool to allow providers to coordinate care and meet quality goals.

While this report does not make recommendations about which specific policy approaches should be adopted in order to incentivize HIE, we would like end with a series of analytic conclusions that may provide useful guidance as policymakers in state and federal governments take stock of their new responsibilities under HITECH and the future of health care reform in the United States.

**HIE is integral to broader health care system objectives.** Environmental scan findings and discussions with our panelists confirmed that promoting sustainable HIE is an important component of improving the quality, safety and cost effectiveness of care delivered in the United States. Promoting HIE for HIE's sake will not be sufficient; rather, it is essential to promote HIE that can lead to improvements in the efficiency and quality of care at the point of care and at the population level. To achieve these types of goals, some panelists argue, providers need to be able to do more than just exchange data and view data from multiple sources—they may also need to be able to integrate those data. As an illustration, one of the potential benefits of having data in an electronic format is that it allows for clinical decision support and other types of automatically generated guidance on appropriate treatment options. If all data related to a given patient is readily retrievable in a consistent form, those types of algorithms could be applied across all the relevant information about that patient.

To promote robust exchange that can support data integration, it may be important to move towards pay for performance models that reward providers for improving quality and efficiency of care rather than simply adopting health IT or participating in HIE. At the same time, the ability to effectively implement this type of payment incentive

will require purchasers and payers be able to access electronic health information across settings of care to accurately measure quality of care and health outcomes, which can only be achieved through widespread adoption of HIE. The emphasis on value also implies that training and technical assistance are critical components of any broad policy to ensure that providers are getting the most out of their exchange of health information. If HIE does not ultimately lead to gains in patient safety or cost savings elsewhere in the system, the benefits may never justify the costs.

**Relationship between supply and demand is complex and both must be addressed.** Although generating demand for HIE—from both providers and patients—is a prerequisite for sustainable HIE and a challenge in the current market, generating demand alone may not be sufficient. Many members of the expert panel suggested that additional investment, beyond the seed money that may be used to plan and establish regional HIOs provided in HITECH, may be necessary to ensure the infrastructure to exchange health information exists so that providers who want to engage in HIE have a mechanism for doing so. Given that in the case of participation in HIE, demand may be largely a function of government programs and time limited reimbursement incentives such as those authorized under HITECH, it will be a challenge to assure that the mechanisms used for HIE are designed to maximize benefits to health and health care. For example, unless specific policy attention is provided to the issue of how best to supply HIE, there may be a risk that proprietary models of exchange will become the dominant practice. These mechanisms do not allow for broader benefits of HIE that can be achieved through population health assessment and enhanced public health reporting.

There is also the possibility that HIE mechanisms that emerge solely as a result of the EHR adoption incentives in HITECH will not facilitate payment reforms such as bundling, pay for performance, episodes of care based payments and payments to medical homes, which may be key features of health care reform measures to be debated later this year. Finally, several panelists urged that action on addressing the supply of HIE mechanisms is needed quickly, given that incentives for EHR use will be introduced as early as 2011. Similarly, if HIE is meant to be a core component of “meaningful use,” steps may need to be taken to assure an adequate supply of vendors or network service providers to enable competition and reasonable pricing as well as governance mechanisms to ensure accountability and appropriate oversight of HIE.

**Policies should focus on effective models for exchange.** Panelists also noted the potential importance of assuring that organizations leading HIE initiatives adopt data architectures, processes and procedures that give providers the tools to work together with other stakeholders to meaningfully reduce morbidity, mortality and costs associated with poor management of chronic illnesses, less-than-adequate provision of preventive care and other health and health care priorities. In many cases, the set up, governance, architecture and processes underlying HIE will determine whether HIE achieves its promise. For example, some panelists noted that a patient-centered model for providing coordinated care may hinge on specifics such as the presence of federated vs. non-federated data architecture or the extent to which applications allow effective integration of complex data. Similarly, if greater emphasis is placed on consumers assuming a more active role and greater responsibility for engaging in healthy behaviors and helping to manage their chronic conditions, it may be important to assure that individuals have access to their health information in a way that is meaningful to them. Because different visions for health care delivery may imply different models for HIE and different nationwide architectures, it may be appropriate to carefully map out the implications of health reform initiatives—once those priorities emerge—as they relate to HIE.

**ARRA / HITECH is an important first step, but key factors are unresolved.** Panelists focused on the importance of HITECH as an opportunity to increase adoption of health IT and noted that it is a critical step in increasing the amount of structured clinical data available in interoperable applications. However, several panelists noted that the extent to

which HITECH becomes a means to encourage sustainable exchange of these data rests on the rules ultimately adopted around “meaningful use” of EHRs and the extent to which those rules require providers to share data electronically with other providers. HITECH opens the door for ONC to report to Congress on additional authority and funding that may be required to achieve a nationwide approach for using health IT to share health information effectively across providers. Given the reality that the majority of funding under HITECH goes to incentives for EHR use and that substantial attention will be focused on EHR adoption in the short term, it may be important for future initiatives to focus more explicitly on incentives for exchanging data from EHRs as a way to achieve the all important cost and efficiency benefits of moving to a digital health care environment. These future initiatives may be best established as part of broader health reform efforts that may move forward later in 2009.

**True sustainability may require an ongoing policy focus and payment policy is key.** Panelists emphasized the challenges associated with assuring that HIE efforts established as a result of government programs continue to operate after the initial policy focus diminishes. Because policies that create new incentives can lead to opportunistic behavior to achieve short term advantages, policymakers need to have mechanisms to monitor and evaluate the sustainability of any measure enacted and the authority to restrict advantages, subsidies and enhanced reimbursements to entities that can demonstrate the sustainability of their HIE efforts. This type of oversight is also consistent with the current administration’s emphasis on accountability of federal programs. Ultimately, panelists noted that achieving true sustainability where there are ongoing structural incentives to maintain HIE will require a payment system that requires regular cross-provider coordination and participation in HIE as a core element of providers’ work.

We did not set out to achieve consensus on all matters among the panelists, but overall, panelists agreed that there are important tasks for federal, state and private sector stakeholders and that careful consideration should be given to the order of activities and the role that each stakeholder should ideally play. There was agreement among the panelists that it is appropriate for government to play a variety of roles at different stages of setting up HIE and assuring adoption. This includes beginning by facilitating agreement on the basic starting points for HIE including interoperable architecture and standards, moving to help assure the establishment of sustainable models for HIE and, finally, assuring the adoption and effective use of HIE mechanisms to improve the quality and efficiency of care. By using a broad range of levers to support and incentivize HIE, policymakers can work towards a reality where health care providers, consumers and payers electronically share data in a sustainable manner and in a manner that aligns the costs of HIE with quality and efficiency benefits.

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- <sup>16</sup> American Recovery and Reinvestment Act of 2009, Public Law 111-5, 11<sup>th</sup> Cong., 1<sup>st</sup> Sess., Sec. 3004(b)1.
- <sup>17</sup> Congressional Budget Office, Evidence on the Costs and Benefits of Health Information Technology (Washington, DC: 2008).
- <sup>18</sup> According to U.S. Census data, 83 million people, or 27.8% of the population, are enrolled in Medicare or Medicaid or receive military health services (Carmen DeNavas-Walt, Bernadette D Proctor, and Jessica C Smith, U.S. Census Bureau, Current Population Reports, P60-235, *Income, Poverty, and Health Insurance Coverage in the United States: 2007*, U.S. Government Printing Office, Washington, DC, 2008). There are also approximately 8 million FEHBP beneficiaries (Federal Employees Health Benefits Program: Premiums Continue to Rise, but Rate of Growth has Recently Slowed, Testimony of John E Dicken before the Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Governmental Affairs, U.S. Senate, May 18, 2007). HRSA-funded health centers serve more than 16 million patients (<http://bphc.hrsa.gov>). It should be noted that there is likely overlap between the 83 million individuals identified in the Census data and the enrollment numbers for the other programs.
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<sup>21</sup> Congressional Budget Office, Estimate of Direct Spending and Revenue Effects for the Health Information Technology for Economic and Clinical Health Act as Posted on the Web Site of the Web Site of the Committee on Ways and Means on January 16, 2009.

<sup>22</sup> American Recovery and Reinvestment Act of 2009, Public Law 111-5, 11<sup>th</sup> Cong., 1<sup>st</sup> Sess., Sec. 13111 and Sec. 13112.

<sup>23</sup> U.S. Office of Management and Budget, A New Era of Responsibility: Renewing America's Promise, 2009, p. 28-29. [http://www.whitehouse.gov/omb/assets/fy2010\\_new\\_era/A\\_New\\_Era\\_of\\_Responsibility2.pdf](http://www.whitehouse.gov/omb/assets/fy2010_new_era/A_New_Era_of_Responsibility2.pdf)

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<sup>25</sup> Ibid.

<sup>26</sup> Ibid.

<sup>27</sup> State Alliance for e-Health, Accelerating Progress: Using Health Information Technology and Electronic Health Information Exchange to Improve Care (Washington, DC: National Governors Association, 2008). <http://www.nga.org/files/pdf/0809EHEALTHREPORT.PDF>.

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