



October/November 2009

Published November 3, 2009

States in Action is a newsletter from The Commonwealth Fund. Published bimonthly, the newsletter is part of a Commonwealth Fund initiative on state innovations.

Past issues of *States in Action* are available on The Commonwealth Fund Web site at commonwealthfund.org/statesinaction

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Feature State HIT Initiatives

Health information technology (HIT)—or technology that supports storage, retrieval, sharing, and use of health care information for communication and decision-making within and across health care organizations—is being pursued by public agencies and private health care entities across the U.S. State governments support HIT adoption in many ways, motivated by the potential of HIT to improve health care quality and patient safety, and to promote greater value in public health care programs as well as in the broader health care system. States are also motivated by major federal funding opportunities.

Range of State Roles and HIT Activities

According to the findings of the 2007 Health Management Associates/National Governors Association [survey of state HIT efforts](#), states are playing a variety of roles in promoting HIT:

- development and adoption of HIT in Medicaid and the Children's Health Insurance Program;
- use of HIT in public health efforts; and
- promotion of private sector activities by providing funding and data and serving as partners, facilitators, or neutral conveners.

Nearly all state governments have taken on the challenge of promoting and implementing HIT-related policies and encouraging public- and private-sector e-health efforts. The strategies and approaches vary, depending on each state's economy, leadership, allocation of resources, and level of activity among health care providers and purchasers.

State HIT efforts generally involve developing, implementing, and/or supporting adoption of electronic medical/health records, health information exchanges, and others tools described in Figure 1. There is broad agreement that these tools can reduce errors and duplication, enhance access to care, promote evidence-based medicine, and improve quality and efficiency.

Figure 1. Major Types of Health Information Technology

- **Electronic medical/health records (EMR/EHR):** computerized records that provide clinicians with real-time access to information about a patient's medical history, prescriptions and test orders, and physician notes. The records also may include applications that provide clinical decision support or collect data for quality monitoring or public health reporting.
- **Health information exchanges (HIE):** an electronic network that shares health information across organizations and information systems. An HIE can operate at a state, regional, or local level.
- **e-Prescribing:** software that enables providers to order and transmit prescriptions electronically. Medication information can be transmitted not only from a prescriber to a dispenser, but also to health plans or pharmacy benefit managers.
- **Electronic clinical decision support:** a range of computerized tools that make information relevant to patient care available to providers and patients, including reminders about preventive care, information from clinical guidelines, or patient data reports. Clinical decision support tools are generally used in conjunction with EHRs.
- **Telehealth:** Telehealth uses phone and/or online communication to provide services to patients. Telehealth can include live videoconferencing between two health care facilities, "store-and-forward" systems that temporarily capture and send digital images or other clinical information from the point of care to another location, remote patient monitoring, and "e-visits" via email or phone.

· **Personal health records (PHR) and health/medical record banks** : A PHR is an electronic application that enables patients to securely access and manage their health information, including clinical and insurance information. In health or medical record banks, a sponsoring organization such as a government agency collects patients' paper and electronic medical records from various providers and sources and stores PHRs on a Web site. Patients control what and how information is shared.

Sources: V. K. Smith, K. Gifford, S. Kramer et al., State E-Health Activities in 2007: Findings from A State Survey. The Commonwealth Fund and Health Management Associates, February 2008; The Office of the National Coordinator for Health Information Technology, [Health IT Tools](#), accessed October 1, 2009.

Minnesota, Wisconsin, and Vermont are among the [states involved in cutting-edge HIT initiatives](#) to support evidence-based medicine and improve patient care through transparent reporting of health outcomes and costs. Arizona and Delaware are among the states with operational health insurance exchanges, and New York has successfully fostered health information technology use among community hospitals and physician practices through its HEAL NY (Healthcare Efficiency and Affordability Law for New Yorkers) and other programs; these state initiatives are described in this issue's Snapshots.

On the horizon are medical record banks, in which consumers are the "gatekeepers" of their medical information, or personal health records (PHRs). For example, [Washington State](#) is launching health record banks in three communities. Personal health records are increasingly available to consumers through major technology providers such as Google and Microsoft that offer free Web-based PHRs.

Interoperable, Meaningful, and Transformational

According to Tony Rodgers, director of Arizona's Medicaid program (Arizona Health Care Cost Containment System, AHCCCS) and a leader in state HIT, the long-term goal of state HIT efforts is "to build an electronic health information infrastructure to transform health care delivery."

This requires widespread adoption of EHRs and interoperability, or the ability to transmit patient information across sites. Primary care providers (PCPs) would be able to view health and medication histories, test results, and other information at the point of care. Information would move from primary care providers to hospitals, specialists, managed care organizations, and back again. Such sharing lays the groundwork for better-integrated and coordinated care; it can reduce duplication of services and adverse medication interactions. If such systems become widespread and providers use them to proactively monitor and coordinate patient care, HIT has great potential to improve quality of care and control costs.

But Rodgers points out significant additional benefits of HIT that could foster more comprehensive redesign of the health care system. Interoperable health information across different sites enables the aggregation and tracking of episodes of care around clinical data, facilitating new models of care delivery such as medical homes. It also facilitates transparency to more easily identify unnecessary costs, and supports new payment and delivery models such as "accountable care organizations" (which are groups of physicians and other providers who take

joint responsibility for the quality of care and outcomes for their patients, as well as the overall cost of care). "You can't have system redesign without electronic systems and transparency," said Rodgers.

Federal Support for State HIT

Over time, the federal government has taken an increasingly larger role in guiding and supporting state-level HIT. It has provided funding for HIT through [Medicaid Transformation Grants](#) to states, through the Agency for Healthcare Research and Quality, and through the Health Resources and Services Administration for federally qualified health centers, rural health clinics, and telehealth efforts. It is now expanding its role through the HITECH Act (Health Information Technology for Economic and Clinical Health Act) of the American Recovery and Reinvestment Act of 2009 (ARRA), also known as the stimulus plan. The Act includes major federal investments and policy changes intended to set a long-term course for HIT adoption in the states. David Blumenthal, M.D., national coordinator for health information technology (see this issue's "Ask the Expert" Q&A), leads the effort at the Department of Health and Human Services, Office of the National Coordinator (ONC), to oversee the federal HIT grants to support the adoption of health information technology and the promotion of nationwide health information exchange to improve the quality of health care. The federal government hopes that such efforts will reduce federal health costs by an estimated \$12 billion over 10 years.

Since 2007, Medicaid Transformation Grants have provided \$150 million to 35 states, the District of Columbia, and Puerto Rico to improve effectiveness and efficiency in Medicaid. Most of the grants focused on HIT including EHR, e-prescribing, clinical decision support, and HIE. According to a [status update](#) by the Centers for Medicare and Medicaid Services, by early 2009 Alabama, Arizona, and New Mexico had begun implementation of EHRs for Medicaid beneficiaries; Delaware, New Mexico, Florida, and Tennessee had implemented e-prescribing projects; Montana had added clinical decision support tools to its EHR for Medicaid providers; Indiana and Wisconsin had begun HIE projects, and other states had made progress in various HIT activities.

ARRA HITECH grants totaling over \$40 billion represent a new direction. "The stimulus funding represents a major shift in the federal approach to HIT adoption," said Shaun Alfreds, HIT program manager at the National Academy for State Health Policy. "The total amount of funding available is unprecedented, and the prescriptive role of federal oversight to move states forward on HIT is a real change from the 'see the market' approach by the previous administration."

Two ARRA programs totaling about \$1.2 billion are just getting under way:

- the State Health Information Exchange Cooperative Agreement program is offering \$564 million for state HIE development (full proposals were due October 16 and awards will be announced December 15, 2009); and
- the HIT extension program is offering \$643 million for HIT regional centers to provide technical assistance and support EHR adoption (three funding cycles during 2009–10).

Through grant requirements and task forces, the federal government is greatly expanding its role in setting standards for state HIT efforts. A Health IT Standards Committee is advising the national coordinator on standards, implementation specifications, and certification criteria for the electronic exchange and use of health information. "States are responding fast, in part because of their dire fiscal condition," said Alfreds. "And because the benefits and economies of scale of many HIT tools require large networks, new federal standards could help the HIT marketplace take hold on a dramatically larger scale."

ARRA also provides funding for incentives to promote "meaningful use" of EHRs by hospitals and clinicians participating in Medicare and Medicaid. Bonus payments to providers who can demonstrate meaningful use of EHRs will be paid during 2011–14, and providers who have not done so by 2015 will be subject to penalties. The ONC Policy Committee is developing recommendations on what constitutes [meaningful use](#), and CMS plans to issue a proposed regulation defining meaningful use. CMS recently sent a [letter](#) to state Medicaid directors providing guidance on this incentive program.

Finally, the national health care reform bills have provisions to further promote HIT related to: developing standards for data collection, facilitating better data sharing, or aligning health coverage eligibility and enrollment systems with clinical HIT systems.

While federal HIT grants and standards mean that states will lose some independence and face greater oversight, advantages include major funding (at a time when many states are cutting programs and initiatives) and the potential for greater economies of scale, quality control, and interoperability across as well as within state health care systems.

Challenges and Lessons

States have been prime learning laboratories for testing HIT models, technologies, incentives, partnerships, and tools. They have achieved major accomplishments, but have faced many challenges. For example, states continue to struggle with privacy and consent issues, procurement process delays, slow adoption by providers, and lack of funding. In Arizona, about half of HIE development costs were expended addressing legal and policy issues (described in this issue's Snapshots). Ongoing challenges include not only getting affordable hardware and software to practitioners—particularly small practices—but getting them to use it effectively and proactively to improve care.

"A challenge is to work with small practices and hospitals to achieve meaningful use of technology, to raise all boats, so no one is left behind in this technology revolution," says Rodgers. New York City's Primary Care Information Project, featured in this issue's Snapshots, is making important headway in this area.

Perhaps the greatest challenge for states is how to create a sustainable business model for HIT, particularly for a state-wide HIE. What would the HIE look like? How would it be governed, for example is such an enterprise best suited for private ownership or as a public utility? How could savings be captured to sustain the program, for example through user fees or assessments?

As states forge ahead with HIT, they are learning valuable lessons. The Medicaid Transformation

Grant program revealed the need for states to coordinate with other e-health initiatives and private stakeholders, and to provide incentives and/or financial assistance to practices to encourage or enable HIT adoption. It also found that broad implementation of HIT was more time-consuming than anticipated, with three years emerging as a realistic minimum.

Based on Arizona's experience developing an HIE, Tony Rodgers stresses three key ingredients for successful statewide, interoperable HIT:

1. Leadership – a Medicaid director or governor with a long-term vision for health delivery system redesign; (this can be a challenge given term limits of elected officials, turnover of staff, and learning curve required to educate new people on the issues).
2. Willingness to invest – HIT implementation requires extensive planning, such as a state-wide assessment and readiness review to learn what is already in place, identify gaps, and estimate how much support providers need. This should include surveys and focus groups with physicians, hospitals, nursing homes, and other care providers. It also involves bringing CEOs of hospitals, health plans, and the state Medicaid agency to the table and educating them about the importance and benefits of HIT.
3. Establishing a legal framework – developing standards and contracts allowing data partners to exchange information with the data users and to overcome competition, privacy, and confidentiality issues.

Rodgers believes that federal leadership and grant programs are extremely helpful, but "HIT is still essentially a state-by-state endeavor. Most states will be able to achieve widespread adoption by 2014, while some will have difficulty and need additional assistance."

Ask the Expert: Q&A with David Blumenthal, National Coordinator for Health Information Technology

David Blumenthal, M.D., M.P.P., is the national coordinator for health information technology at the U.S. Department of Health and Human Services [Office of the National Coordinator](#) (ONC). In the first installment of a new column called "Ask the Expert," *States in Action* asks Dr. Blumenthal to describe how ONC is working with states to support the adoption of health information technology and the promotion of nationwide health information exchange to improve health care.

SIA: At the ONC, how are state-level HIT activities being coordinated?

Blumenthal: The ONC in collaboration with other federal agencies is addressing aspects of policy, technology design and adoption, privacy, cultural change, workforce, and sustainability as we implement the Health Information Technology for Economic and Clinical Health (HITECH) Act of the American Recovery and Reinvestment Act (ARRA).

Two key points of coordination at the state level are through the funding of the HITECH Priority Grants Programs, which will support Medicare and Medicaid providers in their effort to

qualify for payment incentives as "meaningful users" of electronic health records (EHRs). These programs include the:

- **State Health Information Exchange Cooperative Agreement Program**
This cooperative agreement program will support states and/or State Designated Entities (SDEs) in establishing health information exchange (HIE) capacity among health care providers and hospitals in their jurisdictions. Such efforts at the state level will establish and implement appropriate governance, policies, and network services within the broader national framework to rapidly build capacity for connectivity between and among health care providers. HIE is a statutory requirement to become a "meaningful user" of an EHR.
- **Health Information Technology Extension Program**
This program provides cooperative agreements for the establishment of Health Information Technology Regional Extension Centers that will offer technical assistance, guidance, and information on best practices to support and accelerate health care providers' efforts to become meaningful users of certified EHRs. This program will focus resources on primary care physicians to support their efforts to successfully implement and integrate EHRs in their practice.

ONC will be working collaboratively with State HIT Coordinators, SDEs, and Regional Centers within and across states in the implementation of these high-priority programs.

SIA: What are the key HIT activities states should be pursuing (electronic health records, health information exchanges, decision support tools, etc.)?

Blumenthal: State programs to promote HIE will help to realize the full potential of EHRs to improve coordination, efficiency, and quality of care. States will play an important role in collaboration with the federal government to establish the appropriate legal, financial, and technical support necessary to enable consistent, secure, statewide HIE across health care provider systems.

To enable an environment that supports sustainable HIE, states should be seeking multi-stakeholder consensus on activities across five critical domains: governance mechanisms, finance mechanisms, technical infrastructure, business and technical operations, and legal and policy issues.

SIA: Which states are ahead of the curve and why?

Blumenthal: States participating in the State HIE Program will begin at different stages of maturity working toward interoperable health information exchange. Some will be fully operational, while others will just be starting to build the necessary capacity.

The states that already have a significant amount of HIE across health care provider organizations have been planning and implementing governance, policy, technical, and financing mechanisms for HIE for several years. Strong leadership and consensus across public and private sectors on the statewide approach to HIE has been a contributing factor to their success.

The process of building HIE capacity begins with states assessing their current level of readiness. Once a state determines where it is starting, it can begin to map out a critical path to developing

HIE for health care providers throughout the state. The programs are designed to support incremental change over a variety of health care settings, with the Regional Centers supporting providers with technical assistance to facilitate the adoption of certified EHRs.

SIA: What benefits can states expect from HIT?

Blumenthal: While we cannot answer on behalf of individual states, many health care stakeholders have noted the promise of HIT to improve the quality and efficiency of care. State public programs, such as public health and Medicaid programs, could significantly benefit from greater connectivity across health care providers and evidence-based delivery of health care enabled by HIT.

SIA: Do you think those expectations are realistic in the short term? What about over the long term?

Blumenthal: Yes. In the short term, we are providing important foundational funding and technical assistance to enable the adoption of health IT, building the means for greater connectivity across the health care system, and supporting providers' efforts to become meaningful users of EHRs.

Through the implementation of HITECH and successful collaboration with states and other key stakeholders, over time we can achieve the modernization of our health care system that is critical to improving our nation's health and reducing the cost of care.

SIA: What are the main challenges states are facing?

Blumenthal: Some of the challenges that states are facing include coordination across disparate pockets of information exchange in the health care system, implementation issues associated with budgetary constraints, the need for a trained workforce, and the establishment of a state-level legal and policy framework that must be in place to facilitate appropriate health information exchange.

SIA: How are the federal stimulus HIT grants affecting state activity?

Blumenthal: The HITECH priority programs are specifically designed to work together to provide the necessary assistance and technical support to providers, enable coordination and alignment within and among states, and ensure the workforce is properly trained and equipped to be meaningful users of EHRs. This support will augment the efforts of states that have already initiated programs, and jump-start those who have not yet advanced approaches to HIE across providers or have not been able to advance adoption of health IT throughout their regions.

SIA: Is the possibility of federal health reform affecting state HIT activity?

Blumenthal: We envision a health care system that delivers higher quality, safer, more efficient, accessible, equitable, and convenient care, enabled by health IT. This goal recognizes that the ability to capture, analyze, reference, and share clinical information relevant to each patient in a secure, digital format is fundamental to the level of quality and value health care all Americans should expect in the modern era.

Our current system is unsustainable. The adoption and meaningful use of information technology in health care represents a shift of historic proportion, and is central to the necessary reform and modernization of our health system.

SIA: How can states best learn from each other?

Blumenthal: There are multiple resources available to share best practices for health IT adoption through the State HIE Program, including ongoing forums where experts who have been involved in exchange in other states can share their expertise and best practices across the five domains of activity and in different health care settings. ONC supports the State HIE Forum, which is a learning community for all state HIT coordinators and SDEs. Through this forum, they'll problem solve together, share best practices, and receive the technical assistance needed to successfully achieve HIE across providers in their states.

The Extension Program will also establish a national Health Information Technology Research Center, which will gather relevant information on effective practices from a wide variety of sources across the country and help the Regional Centers collaborate with one another and with relevant stakeholders to identify and share best practices in EHR adoption, effective use, and provider support.

SIA: Any final advice to state policymakers and administrators?

Blumenthal: It is important to consider the power that states have through regulatory and policy levers to lay the foundation for and encourage health information exchange at the state level. Their support is critical to enabling the meaningful use of electronic health records—allowing for cost savings to individual state programs, improvements in quality of care, and system efficiencies to benefit the consumer.

Snapshots

Delaware: First State, First Statewide Health Information Exchange

Delaware established the first statewide clinical health information exchange (HIE) in 1997. Compared with other states, it has taken more of a public sector approach to HIE governance, though this strategy may be shifting. Its HIE, the Delaware Health Information Network (DHIN), is a public-private partnership that operates under the auspices of the Delaware Health Care Commission, which the state created in 1990 with the goal of moving toward basic, affordable health care for all residents.

DHIN began as an effort to create a state administrative data exchange, which would have allowed providers and payers to share claims and encounter data describing the use of specific services. However, as health plans increasingly took on the responsibility for electronic use of administrative data, and as HIEs gained attention at the federal level, DHIN shifted its focus in 2003 to clinical information that providers could use at the point of care to improve patient

outcomes and increase efficiency. DHIN began distributing clinical laboratory test results, radiology reports, and admission face sheets from hospitals and laboratories statewide in 2007, and since then has been expanding its functionality, number of users, and data contributors. DHIN Executive Director Gina Perez said, "The process has centered around getting everyone to the table, reaching consensus on priorities for what we're building and how we're implementing it, and maintaining a focus on the patient."

The exchange currently provides laboratory results; hospital admission, discharge, and transfer data; and radiology reports, using the Web-based ProAccess application developed by Medicity. Radiology images, electronic order entry, and transcribed reports will be added in coming months, and a medication history search function will soon be piloted in emergency departments to evaluate its performance and cost. More than half the providers in Delaware now use DHIN. Over 85 percent of lab transactions in the state go through the system, and more than 80 percent of hospitalizations are reported in it. Clinical information from laboratory and hospital participants is automatically delivered through DHIN in real time to the ordering provider at the point of care. Six hospitals currently participate and two more are considering joining, out of a total of nine in the state.

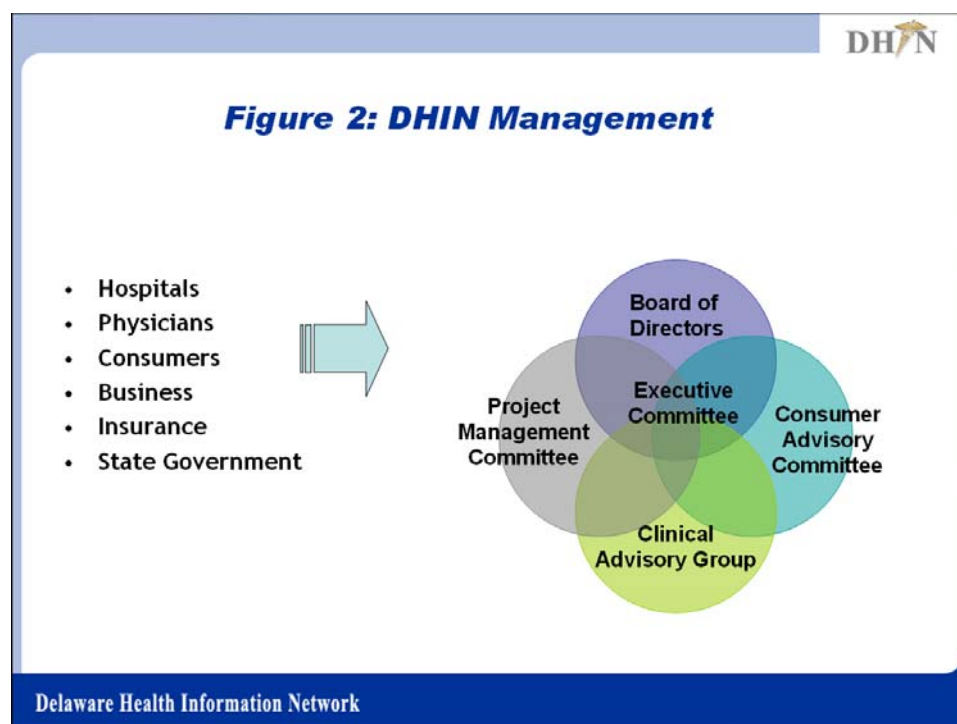
Perez highlighted DHIN's ability to work with providers at all levels of technology adoption as a strength of the exchange. Providers access DHIN by logging into an online "inbox," where results for their patients are delivered. If they already use an EHR, the data links to patients' electronic records. If the office uses paper records, the provider can schedule the program to regularly print out patient results in a standardized format, to be integrated with paper files. DHIN will also soon add an EHR Primer, an intermediate step between paper-based and fully electronic records, which will help providers who would otherwise be unlikely to purchase an EHR meet federal "meaningful use" criteria to qualify for incentive payments offered as part of the American Recovery and Reinvestment Act (ARRA).¹

For patients, participation in DHIN is on an opt-out basis. Patients receive information about the exchange at the point of care, and can decline to participate. DHIN's consumer advisory committee, composed of a wide range of individuals and organizations (including advocates for people with disabilities, mental health advocates, cancer survivors, community health centers, AARP, and others) plays a strong role in the program's governance, and worked extensively to develop its privacy policy. According to Perez, the opt-out structure has not proved a major challenge as the system has expanded. "The focus has always been on the system's ability to ensure that providers have the right information at the right time and place in order to provide better care, and that this is a patient and physician decision," she said.

Governance Model

DHIN was established in 1997 under the umbrella of the Delaware Health Care Commission, but governs itself. Its board of directors consists of representatives from the hospital, physician, state, employer, consumer, and insurance worlds, of whom roughly 70 percent are from private organizations and 30 percent are from the public sector (Figure 2). Perez anticipates that the DHIN governance structure will change over time, likely shifting more toward the private sector. The board is considering whether and how it could retain the liability protections and state funding established in the legislation that governs it, but operate more extensively in the private

sector. At the same time, DHIN is attempting to diversify its sources of revenue as part of an evolving strategy to ensure its financial sustainability over the long term.



Financing

DHIN is currently funded in roughly equal amounts through federal contracts, state funding appropriated by the legislature, and private-sector funds to match the state contribution. Ninety-five percent of this private-sector funding is contributed by hospitals and laboratories that are using DHIN to replace their current paper-based systems, while about 5 percent consists of grants from private foundations and funding from health plans. The federal funding DHIN currently receives through a contract with the Agency for Healthcare Research and Quality under its [State and Regional Demonstration Projects](#) ends in September 2010. This contract provides \$5 million in funding from 2005 to 2010. DHIN also participates in the Nationwide Health Information Network, receiving contractual funds from the Office of the National Coordinator for Health Information Technology, and funding from ARRA is expected to begin in January 2010. Perez said the availability of stimulus funding may accelerate DHIN's timeline for implementing new features over the next several years.

The program is currently developing a long-term financial sustainability strategy that will diversify its revenue sources and move it toward heavier reliance on fees or subscriptions from providers and other types of participating organizations. The costs to the various entities now using the system will be based on the relative value of the exchange to them, which DHIN is currently determining how to evaluate. It expects to implement a new financing model at the start of the next fiscal year. In developing the new strategy, DHIN aims to balance expanding its capabilities with the goal of cutting its operational costs, a tension that is particularly acute in the current

economic environment.

Key Lessons

The [program's vision](#) is to develop a network among all health care providers to "improve patient outcomes and patient-provider relationships, while reducing service duplication and the rate of increase in health care spending." A strong, inclusive strategic planning process and involvement of all stakeholders to build consensus and tailor implementation to the particular needs and capabilities of participants have been important factors enabling DHIN's progress so far. The network started with a foundation of basic functions, rather than trying to be "all things to all people" immediately. The long-term commitment of its organizers and an active planning process have allowed it to build on those capabilities gradually, while remaining responsive to the needs of those who will be using and paying for it. Perez noted that the challenges and importance of collaboration are similar regardless of a state's size, although Delaware's small size was an advantage once the exchange was operational. "The legislation was enacted in 1997, and DHIN went live in 2007, so we didn't just snap our fingers and make it happen," she said. "The common thread over the course of DHIN's development was the strong commitment of people who wanted to improve the health care system and truly have an impact on quality, access, and cost."

DHIN is also participating in discussions with nearby states about how to share information and address privacy issues, and how to approach public health reporting and quality measurement from a regional perspective as the use of health information technology continues to expand.

For more information
Contact: info@dhin.org or (302) 678-0220
See: Delaware Health Information Network Web Site

Note

1. This EHR primer would include an electronic calendar, the capability to view and update chart information, electronic prescribing and test orders that interface with DHIN, an internal e-mail system to be used within a practice, the ability to automatically merge demographic and clinical information to generate letters to be sent to outside organizations, and the ability to create custom electronic forms. It would support expected ARRA meaningful use goals of storing patient demographic information and care preferences, and maintaining updated information about health problems and treatments. However, the primer does not have all the functions of an EHR; for example, it allows only limited documentation, and does not include electronic submission of bills.

Arizona Medical Information Exchange Outgrows Medicaid

The Arizona Medical Information Exchange (AMIE) is a Web-based health information exchange that allows participating practitioners to view hospital discharge and other clinical reports, lab test

results, and medication data for many of their patients. AMIE was developed by Arizona's Medicaid agency (the Arizona Health Care Cost Containment System, or AHCCS), went live in September 2008, and is slowly growing in capabilities and utilization. Focused primarily on the Phoenix region, AMIE is the only operational HIE in the state, and will play a key role as it works to build interoperability with other developing exchanges in the region.

Arizona recently submitted a proposal for federal stimulus funds (under the State Health Information Exchange Cooperative Agreement Program) to support a cooperative effort among AMIE, another HIE developing in the southern region in the state, and several smaller HIE efforts under way. The goal is to make these HIEs interoperable, essentially building a statewide system in which the whole will be greater than the sum of its parts. A new state HIT coordinator will oversee this collaborative effort.

AMIE's Development and Evolution

The short-term objective of AMIE is to make patient health information readily available to health care providers at the point of service when care is provided. The long-term goal, according to Tony Rodgers, director of AHCCS, is to "transform the health care delivery system."

Though Arizona's Medicaid agency developed AMIE and other payers are not yet participating, the information accessible through the HIE is not limited to the Medicaid population or Medicaid data. In fact, AMIE is now moving out of the Medicaid agency and will be operated by a private, nonprofit entity governed by the data partners (major hospitals, health systems, lab systems, and others).

As of early October 2009, AMIE contains about 6.5 million records for more than 2.5 million individuals (about 40 percent of the state's total population). The information is not collected and maintained at a central repository, but rather remains at its source and can be viewed via AMIE's Web-based application. It offers access to information from AMIE's "data partners": hospital discharge summaries and other documents from seven major hospitals and health systems; laboratory test results from one of two major lab systems in the state (the second lab is coming on board); and medication histories supplied by a subcontractor (Managed Care Pharmacy Consultants) that aggregates pharmacy claims data received from the AHCCS-contracted health plans and from the state-funded behavioral health providers serving a large portion of low-income residents in the state (Figure 3). Planners hope that the addition of the latter source in early 2009 will lead to fewer interactions between drugs prescribed for behavioral health reasons and those prescribed for physical health care.

Figure 3. Types of Records Accessible Through AMIE
Cardiac Study/Reports
Consultations
Discharge Summaries
Emergency Reports
Medical Histories and Physicals
Lab Reports
Medication Histories
Operative Reports
Procedure Notes
Study Reports
Source: Arizona Medical Information Exchange, http://www.azamie.gov/about/Default.aspx , accessed 10/1/09.

About 150 medical practice personnel, representing about 400 physicians, are currently using AMIE. Participating practices must sign a contract stating that they will access the information only for treatment purposes and will not share it with employers or insurance companies. This helps ensure privacy and means that patients do not need to sign additional consent forms. AMIE is rolling out a centralized mechanism that allows patients to opt out of sharing information on AMIE, but the default is for information to be included (this and other privacy and consumer control issues remain a source of debate in many other states.)

A 2007 federal Medicaid Transformation Grant provided \$11.7 million for HIE development and implementation through the end of 2009. AHCCCS created an internal development and business operations team that built and now operates AMIE, without outside vendors or service contractors. A staff of about 15 members train and support users, perform audits, maintain and develop the software and systems, and develop policy. According to Perry Yastrov, project director, about half the costs have involved addressing legal and policy issues, and the remainder covered background analysis, focus groups, technology development, and maintenance.

An evaluation by the University of Arizona of the initial three-month testing phase (October–December 2008) found that most of the users believed that AMIE improved efficiency (saved time, made the medication reconciliation process more efficient), safety (reduced medication errors and interactions), and health care quality (based on immediate access to complete and reliable medical histories); users also thought it reduced costs and duplication of health care services. Administrators would like to do a quantitative study to assess the system's effectiveness, costs, and other outcomes when AMIE reaches a larger user base.

Challenges, Lessons, and Next Steps

AMIE's experience suggests that an HIE should not be limited to the Medicaid population, and should include as much patient information as possible. Physicians using AMIE report that they and their staffs are more likely to use the tool if they can do so for all of their patients, not just a subset. In response, AMIE is not restricted to Medicaid data or patients, and AHCCCS is transferring AMIE to a new, nonprofit entity governed by AMIE's data partners. AHCCCS will have a seat on the Board of Directors; other roles for the state have not yet been defined.

Despite significant growth of accessible data, utilization of AMIE is still quite limited. Only about 30 to 40 patient records are being viewed each day, and AHCCCS is "eager to bring AMIE to a larger scale," according to Yastrov. Only with widespread adoption will the system's potential benefits in terms of patient safety, quality, and efficiency be realized. But it has been challenging to educate stakeholders—physicians, hospitals, insurers, and consumers—and bring them on board. AHCCCS has not done any formal marketing, other than approaching partners for sharing data. But Yastrov says that they are being approached more as providers learn about AMIE from those who are already participating. Further, the ARRA incentives for hospitals and physicians to achieve "meaningful use" of technology that includes interoperability with other entities has encouraged hospitals and physicians to work with AMIE. And he expects more aggressive promotion efforts once AMIE is run by the nonprofit organization.

The key lesson to other states is to "create a coalition of hospital and insurance executives early in the process, educate them, address their fears about data management and 'big brother,' and get their commitment to make the HIE happen," according to Yastrov. "The technical issues are relatively easy."

Another serious challenge is financial. Under major budget pressures related to the current recession, many of Arizona's public programs are being cut, and AMIE officials can no longer expect the state to help fund AMIE's operations when Medicaid grant funding runs out at the end of the year. The federal stimulus funds are expected to help sustain AMIE temporarily.

Yastrov stresses, however, that while federal grants are extremely important, they are not a long-term solution. Perhaps the greatest challenge for AMIE—and for other states developing HIEs during difficult fiscal times—is to create a sustainable business model. This involves identifying revenue sources to cover development, operations, upgrades, and expansions, to address legal and policy issues, conduct audits, and other work. For example, AMIE authorities are examining options for charging providers user fees, such as subscription rates, or per-use fees. But first they must convince those providers of the HIE's value—how it could enhance efficiencies at their practice and improve patient care.

Another plan is to partner with facilities that own and operate EHRs, to be able to convert AMIE

from a Web-based "viewing" application to an interoperable system in which physicians, clinics, hospitals, and other providers can more easily communicate and integrate information. To facilitate this movement, AHCCCS has established a Purchasing and Assistance Collaborative for Electronic Health Records. An [Early Adoption program](#) offers medical practices discounts to EHR software, hardware, and a subscription for interfaces with other systems as well as training, maintenance, and support services.

Meanwhile, Arizona is continuing to educate stakeholders, partner with organizations, and add patient information to AMIE, including data from a government-funded children's rehabilitation program, a major children's hospital, and a second laboratory company that includes about half of the medical laboratories in the state. It would like to bring private insurers on board as well. Support from private payers—providing claims data, encouraging participation from contracted providers, and paying some operating costs—would likely help any HIE be successful, and private payers would benefit from efficiencies achieved through HIEs as well.

Lessons drawn from AMIE's accomplishments and challenges will inform the emerging cooperative effort to build HIE interoperability statewide.

For more information

Contact: Perry Yastrov, Project Director, EHR Systems and Services, Arizona Health Care Cost Containment System, (602) 417-6970, perry.yastrov@azahcccs.gov

See: [Arizona Medical Information Exchange Web Site](#)

New York: State and City Innovations to Scale Up HIT

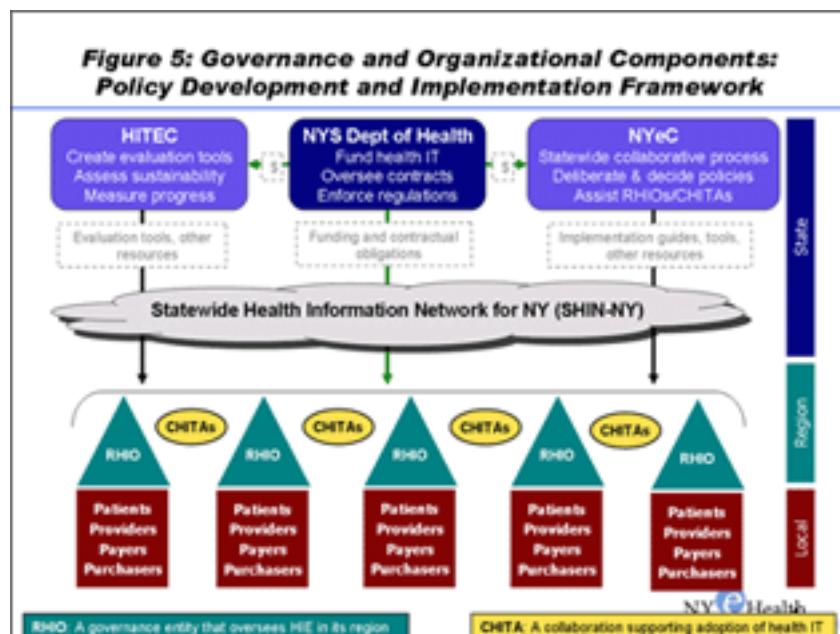
Since 2006, New York State has awarded \$226 million in public funds to develop and implement a comprehensive health information infrastructure—more than in all other states combined. Most of these funds are distributed through a grant program that was created by the 2004 Health Care Efficiency and Affordability Law for New Yorkers (HEAL NY). The state [enacted HEAL NY](#) to reform and reconfigure New York's health care delivery system, including projects to accelerate the adoption of health information technology (HIT) and interoperable electronic health records. In addition to the state's investment, the federal government and private-sector organizations have contributed an additional \$226 million since 2006, bringing New York State's total HIT investment since 2006 to a remarkable \$453 million from all sources (Figure 4).

Figure 4. Health Information Technology Investments in New York Since 2006

Source of Funds	Grant Name	Grantee	Date	State Funds (in millions)	Total Funds (in millions and including matching dollars)
NY Department of Health (NY DOH)	HEAL NY Grants	Various HIT projects	May-06	\$52.9	\$201.0
NY DOH	HEAL NY Grants	Regional HIT organizations	Mar-08	\$105.7	\$152.0
NY DOH	HEAL NY Grants	Various HIT projects that support medical homes	Sept-09	\$59.6	\$59.6
US Office of the National Coordinator (ONC)	Nationwide Health Information Network Trial Implementations	Regional health information exchanges	Oct-07		\$2.8
US Centers for Disease Control and Prevention (CDC)	CDC Health Information Exchange for Public Health	NY DOH	Apr-08		\$20.0
US Agency for Healthcare Research and Quality (AHRQ) and ONC	Health Information Security and Privacy Collaborative	NY DOH	Aug-06		\$0.6
AHRQ and ONC	Health Information Security and Privacy Collaborative	NY DOH	Jul-07		\$0.2
ONC	Health Information Security and Privacy Collaborative	NY DOH	Apr-08		\$0.3
NY State Health eLinks Legislation	Health eLinks Program	NY DOH	2006	\$3.0	\$3.0
NY DOH	Medical Society of NY HIT Pilot	Various HIT projects	2006	\$4.6	\$13.0
Total				\$225.8	\$452.5

Sources: New York Department of Health, [Health IT Investment in New York](#), accessed October 1, 2009 and New York Department of Health, [Phase 10 Awards by Region](#), September 25, 2009).

New York State has established a sophisticated governance structure for its HIT efforts, led by the Office of HIT Transformation within the New York State Department of Health (Figure 5). The state is essentially [working to create an HIT "interstate."](#) says Rachel Block, deputy commissioner for HIT transformation at the Department of Health—a system through which all providers could connect and interface under common practices and guidelines. Once fully established, the Statewide Health Information Network for New York (SHIN-NY) is expected to serve as the backbone for HIT in New York and make electronic health information exchange much easier for providers. Building the system, says Block, involves much complexity, and success depends on aligning the work of multiple stakeholders through collaboration and consensus-building.



Source: New York eHealth Collaborative.

The New York [eHealth Collaborative](#) is a public–private organization designated by the state to develop statewide HIT policy guidance through an open, transparent, and consensus-driven process. This collaboration process is largely driven by workgroups that recommend policies and procedures, standards, and technical approaches related to clinical priorities, privacy and security, and the adoption of electronic health records. The state has committed \$5 million to the eHealth Collaborative over the next two years to manage the collaborative process and set priorities for future HEAL NY awards.

New York also supports a [Health Information Technology Evaluation Collaborative](#) (HITEC) to evaluate and develop evaluation instruments for HIT initiatives across the state. HITEC is a multi-institutional, academic collaborative of New York State institutions including Cornell University, Columbia University, the University of Rochester, the State University of New York at Buffalo, and the State University of New York at Albany. HITEC has been charged with providing evaluation services for HEAL NY grantees in a consistent and objective manner across all funded projects. The state has committed \$5 million to HITEC over the next two years.

Underlying the Statewide Health Information Network for New York and central to its successful

implementation are Regional Health Information Organizations (RHIOs). New York's RHIOs are multi-stakeholder collaborations that enable the secure interoperable exchange of health information with a mission of governing its use in the public's interest and for the public good by supporting improvements in health quality, affordability, and outcomes. Currently, there are nine state-designated RHIOs, which are part of the statewide governance structure and connect to the Statewide Health Information Network.

The eHealth Collaborative also supports Community Health Information Technology Adoption Collaboratives (CHITAs) which are similar in concept to the Regional HIT Extension Centers that were created and funded in the American Recovery and Reinvestment Act of 2009. New York's CHITAs, which predate Extension Centers, are collaborations of clinicians who are committed to adopting and using EHRs to improve patient care for specific populations within a community (called a "care coordination zone"). As one example, a Primary Care Health Information Consortium comprised of 29 community health centers and other ambulatory care providers, the New York City Department of Health and Mental Hygiene, the Community Health Care Association of New York State, and the Primary Care Development Corporation are creating a CHITA with HEAL NY funding to implement an interoperable EHR system among community health centers and other primary care providers in a care coordination zone in Brooklyn. Unlike RHIOs, which must be independent nonprofit entities, CHITAs are informal collaborations of provider participants in a care coordination zone for the purpose of sharing software, technical services, and clinical services and ensuring groups of clinicians realize upfront and consistent value from interoperable EHRs. There is no limit on the size or number of CHITAs that can operate within the state. Nine CHITAs have been awarded HEAL NY grants specifically for the purpose of ensuring that EHR adoption and use results in patient care improvements.

New York City Primary Care Information Project

The [New York City Primary Care Information Project](#) (PCIP) provides an example of how HEAL NY grants support regional HIT initiatives. PCIP, which is led by the New York City Department of Health and Mental Hygiene, is the largest community EHR project in the country, with 1,557 providers, including 605 at 254 small private practices, using EHRs as of May 2009. PCIP has partnered with eClinicalWorks to provide an EHR software package to community providers who serve underserved populations or those with Medicare, Medicaid, or no insurance. Participating providers receive EHR applications and licenses, extensive training for all levels of staff, interfaces to common laboratory and billing systems, and EHR customization to support public health functions. In addition to helping physicians adopt an EHR, PCIP also provides technical assistance on how to use an EHR to improve patient outcomes. Quality improvement consultants offer on-site support for office redesign to improve efficiency, coaching on EHR preventive-health features and how to use them for quality improvement, and a forum for discussing performance feedback and sharing best practices on quality improvement efforts.

Over the past four years, New York State has awarded \$11 million in HEAL NY grants to PCIP. In September 2009, it announced that it will award an additional \$7 million in HEAL NY grants to support additional work to establish patient-centered medical homes. PCIP's current goal is to help providers adopt and use EHRs in a way that improves the effectiveness of chronic disease care, especially diabetes care. PCIP will work to connect all participating practices to New York's

Statewide Health Information Network and ensure they receive technical assistance to become certified as a patient-centered medical home through Level II or III accreditation from the National Committee for Quality Assurance. This level of accreditation would put New York's providers in a strong position to receive bonus payments that will be available in 2011 through Medicare and Medicaid for health care providers that demonstrate "meaningful use" of EHRs.

For more information about New York State HIT Transformation

Contact: Rachel Block, Deputy Commissioner, New York State Department of Health Office of HIT Transformation, rx17@health.state.ny.us

For more information about New York City Primary Care Information Project

Contact: Amanda Parsons, M.D., M.B.A., Acting Assistant Commissioner, New York City Department of Health and Mental Hygiene, pcip@health.nyc.gov

See: New York Department of Health, [Health Information Technology Web Site](#)
[HEAL NY: Promoting Interoperable Health Information Technology in New York State](#)

Related Publications

Commonwealth Fund Publications

K. Davis, S. R. Collins, R. Nuzum and C. Schoen, [On the Road to a High Performance Health System: Changing Course and Making History](#), The Commonwealth Fund, September 15, 2009.

K. Davis, [Changing Course: Trends in Health Insurance Coverage, 2000–2008](#), Hearing on “Income, Poverty, and Health Insurance Coverage: Assessing Key Consensus Indicators of Family Well-Being in 2008,” Joint Economic Committee, U.S. House of Representatives, September 10, 2009.

L. Simpson, G. Fairbrother, J. Touschner, and J. Guyer, [Implementation Choices for the Children’s Health Insurance Reauthorization Act of 2009](#), The Commonwealth Fund, September 10, 2009.

M. M. Doty, S. R. Collins, S. D. Rutsgi, and J. L. Nicholson, [Out of Options: Why So Many Workers in Small Business Lack Affordable Health Insurance, and How Health Care Reform Can Help](#), The Commonwealth Fund, September 9, 2009.

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S. Klein and D. McCarthy, [North Carolina’s ABCD Program: Using Community Care](#)

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Related Publications

B. Garrett, J. Holahan, L. Doan et al., [The Cost of Failure to Enact Reform: Implications for States](#), Robert Wood Johnson Foundation and Urban Institute, September 2009.

[Medicaid and Children's Health Insurance Program Provisions: America's Affordable Health Choices Act & America's Healthy Future Act](#), Henry J. Kaiser Family Foundation, September 2009.

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S. Long and K. Stockley, [Health Reform in Massachusetts: An Update on Insurance Coverage and Support for Reform as of Fall 2008](#), Urban Institute, September 2009.

[Massachusetts Health Care Reform: Three Years Later](#), Kaiser Commission on Medicaid and the Uninsured, September 2009.

C. Pryor and A. Cohen, [Consumers' Experience in Massachusetts: Lessons for National Health Reform](#), Henry J. Kaiser Family Foundation, September 2009.

D. Idala, T. Roddy, C. Milligan et al., [Using Information from Income Tax Forms to Target Medicaid and CHIP Outreach: Preliminary Results of Maryland Kids First Act](#), Robert Wood Johnson Foundation and State Health Access Data Assistance Center, September 2009.

E. Osius and J. Rosenthal, [The National Research Council / Institute of Medicine's Adolescent Health Services: Highlights and Considerations for State Health Policymakers](#), National Academy for State Health Policy, September 2009.

J. M. Verdier, V. Byrd and C. Stone, [Enhanced Primary Care Case Management Programs in Medicaid: Issues and Options for States](#), Center for Health Care Strategies, Inc., September 2009.

K. LLanos, [Measurement Strategies for Medicaid Beneficiaries with Complex Needs](#), Center for Health Care Strategies, Inc., September 2009.

L. Summer, [Efforts in States to Promote Medicaid Community-Based Services and Supports](#), Kaiser Commission on Medicaid and the Uninsured, September 2009.

M. Perry, B. Lyons, and J. Tolbert, [In Pursuit of Affordable Health Care: On the Ground Lessons from Families in Massachusetts](#), Henry J. Kaiser Family Foundation, September 2009.

V. K. Smith, K. Gifford, E. Ellis et al., [The Crunch Continues: Medicaid Spending, Coverage and Policy in the Midst of a Recession: Results from a 50-State Medicaid Budget Survey for State Fiscal Years 2009 and 2010](#), Kaiser Commission on Medicaid and the Uninsured, September 2009.

L. Dubay, A. Cook and B. Garrett, [How Will the Uninsured be Affected by Health Reform?](#), Urban Institute, August 2009.

R. M. Castaneda and O. Golden, [Infants and Toddlers in State and Federal Budgets: Summary Report from Urban Institute Roundtable](#), Urban Institute, August 2009.

[Express Lane Eligibility Efforts: Lessons Learned from Early State Cross-Program Enrollment Initiatives](#), Kaiser Commission on Medicaid and the Uninsured, August 2009.

[Struggling with Financing: The Recessions and National Health Reform Dominate Medicaid Concerns Going into FY 2010](#), Kaiser Commission on Medicaid and the Uninsured, August 2009.

Multimedia and Interactive Resources

[Updated: Medicaid Benefits Database](#), Kaiser Commission on Medicaid and the Uninsured, September 2009.

[Commonwealth Fund Webinar on Improvement Partnerships](#), September 2009.

Upcoming Meetings

Grantmakers in Health Fall Forum
Washington, D.C.
November 5–6, 2009
http://www.gih.org/calendar_url2665/calendar_url_show.htm?doc_id=963296

National Committee for Quality Assurance
National Policy Conference
Washington, DC
December 4, 2009
<http://www.ncqa.org/tabid/944/Default.aspx>

National Association of State Medicaid Directors Arlington, VA November 9–11, 2009 http://www.nasmd.org/conferences/conferences.asp	Institute for Healthcare Improvement 21st Annual National Forum on Quality Improvement in Health Care Orlando, FL December 6–9, 2009 http://www.ihl.org/IHI/Programs/ConferencesAndSeminars/21stAnnualNationalForumonQualityImprovementinHealthCare.htm
American Public Health Association 137th Annual Meeting and Exposition Philadelphia, PA November 7–11, 2009 http://www.apha.org/meetings/	National Conference of State Legislatures Forum and Meeting of the Standing Committees San Diego, CA December 9–12, 2009 http://www.ncsl.org/Default.aspx?TabID=714&tabs=2638,122,920#2638

Aiming Higher: State Scorecard on Health System Performance

The cost and quality of health care, as well as access to care and health outcomes, continue to vary widely among states, according to the second state scorecard report released by the Commonwealth Fund Commission on a High Performance Health System. [Aiming Higher: Results from the 2009 State Scorecard on Health System Performance](#) is a follow-up to the Commission's 2007 report, ranking states on 38 indicators in the areas of access, prevention/treatment quality, avoidable hospital use and costs, healthy lives, and equity. In 2009, Vermont, Hawaii, Iowa, Minnesota, Maine, and New Hampshire lead the nation as top performers on a majority of indicators.

In addition to the scorecard report, the Fund Web site features an [interactive map](#) that allows users to download individual state information and compare states on various measures, as well as a supplemental [report profiling seven states](#) that performed well in 2009.

ABCD III States Selected

The National Academy for State Health Policy (NASHP) recently announced that five states have been chosen through a competitive process to form the [Assuring Better Child Health and Development \(ABCD\) Consortium on Care Coordination](#). Arkansas, Illinois, Minnesota, Oklahoma, and Oregon will work together to develop and test sustainable models for improving care coordination and linkages between pediatric primary care providers and other providers and systems that support children's healthy development. This is the next project in NASHP's series of ABCD initiatives, which have worked with 25 states, the District of Columbia, and Puerto Rico

to improve the delivery of developmental services. For more information about the ABCD initiatives supported by the Commonwealth Fund, please visit <http://abcd.nashpforums.org>.

About the Newsletter

The *States in Action* bimonthly newsletter describes innovative state health programs from across the country. It is intended to help policymakers, administrators, and researchers as they work to stretch health care dollars and meet the needs of their residents.

States in Action is part of a Commonwealth Fund program on state high performance health systems. For more information, contact Ed Schor, Vice President, State High Performance Health Systems, at els@cmwf.org. We welcome those involved in state efforts to expand coverage and improve care and efficiency to send an e-mail about their efforts to statesinaction@cmwf.org.

Editorial Advisory Board

The *States in Action* Editorial Advisory Board comprises experts from various aspects of state health policy. Members of the Editorial Advisory Board help to shape the newsletter by providing technical expertise, suggesting state innovations for inclusion, and by assisting in the reviewing of each issue. Special thanks to Sandra Shewry and Molly Voris for reviewing this issue.

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