Executive Brief: Technology-Enabled Innovations for Improving Children's Health

A Joint Project of the Health Technology Center and The Children's Partnership

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Introduction

Information and Communications Technology (ICT) is reshaping the health care system in the United States, and the pace of change is accelerating. Increasingly, ICT investments are driven by the recognition that ICT can support performance improvement through health delivery system transformation. Yet, within this goal-oriented approach, there has been remarkably little focus on the use of ICT to improve health care for and the health of America's 73 million children, including more than 10 million children in California. As a result, technologies that offer tremendous promise to improve children's health are being underutilized; underserved children who stand to gain the most from these new advances are least likely to receive their benefits; electronic tools developed primarily for adult populations lack the functionality necessary to support pediatric care; and the pediatric health system is not optimizing long-term health and financial returns on investments in ICT.

To address these concerns, the Health Technology Center and The Children's Partnership have engaged in a joint research and forecasting project on *Technology-Enabled Innovations for Improving Children's Health*. The goals of this project are threefold:

1. Identify emerging information and communications technologies that are or could be used to improve children's health outcomes by transforming the health systems that serve them and supporting children and families in better managing their health and health care.

2. Forecast trends likely to influence the development, adoption, and utilization of these emerging technologies in children's health services.

3. Identify ICT priorities and develop policy recommendations to promote children's health through technology-enabled innovation.

This Executive Brief highlights key findings from the first phase of our research and provides preliminary recommendations. The Executive Brief describes our research and forecasting methodology; summarizes key findings regarding the existing challenges in children's health and technology-enabled innovations that can address those challenges; discusses the implications of the key health and technology trends forecasted through the research; and provides preliminary recommendations for advancing technology-enabled innovations for improving children's health. While the research was national in scope, the focus of the project was to consider implications specific to California. Accordingly, this Executive Brief provides actionable recommendations for ensuring that ICT investments, including health information technology (HIT) and health information exchange (HIE) investments through the American Recovery and Reinvestment Act (ARRA), benefit children in California. We encourage policy leaders nationally and in other states to consider similar actions to support health improvements for children throughout the nation.

Methodology

The Health Technology Center (HealthTech) and The Children's Partnership (TCP) conducted a literature review and interviewed approximately 115 experts on the major health challenges for children, health policy and health care delivery system changes that would support better child health outcomes, and ICT-

enabled innovations for addressing child health disparities. The interviewees were selected for their expertise in the fields of health policy, pediatrics, health care quality improvement, population health, behavioral health, prevention and wellness, rural health, adolescent health, school-based health care, program design and administration, and technology development and implementation.

Based on this research, we identified leading examples of technology-enabled innovations in children's health and developed forecasts for trends regarding seven key factors that are likely to impact the development, adoption, and utilization of these innovations over the next five to ten years. The factors we considered included changes in population experience, including patients' demand for technology-enabled innovation; changes in the way health care services are offered, delivered, and coordinated; changes in health care settings and facilities, including health care delivered at nontraditional sites such as schools and retail settings; changes in regulations and standards for both health care and health information technology; changes in information and communications technology development and adoption, including differential adoption across pediatric care settings; changes in business models among technology vendors and users; and changes in the pediatric health care workforce, including care teams comprised of professional and layperson care providers.

After developing the forecasts, we convened an Expert Panel on May 5, 2009, featuring fourteen experts from diverse disciplines, to discuss the forecasts and to identify specific ICT priorities, program strategies, and policy actions to ensure the optimal results for children. The forecasts, a summary of the key trends reflected in the forecasts, and a summary of the Expert Panel can all be found in supplementary materials listed at the end of this document. This Executive Brief offers key highlights from those materials and presents preliminary recommendations that are based on the literature review, interviews, and Expert Panel discussion, but do not necessarily reflect the views of individual interviewees or panelists.

Key Findings

Unique Needs of Children

Children have many unique needs to be considered in developing technology-enabled innovations for improving their health. Children have different health needs, are often served by different caregivers and in different care settings, and in some cases require HIT with different functionality than adults. Moreover, children are not one uniform cohort but undergo significant developmental changes that result in evolving and different needs over their childhood. They almost always require the involvement of at least one parent or other adult in their care, which can lead to complex care coordination, information-sharing, and privacy concerns. Children's care also often involves a variety of settings and programs, such as schools, behavioral health, developmental health, social services, child welfare services, public health, juvenile justice, and Medicaid and CHIP. Information-sharing and coordination efforts across these domains is essential to promoting better health outcomes for children generally and for particularly vulnerable children, such as children in foster care and children with special health care needs.

Limitations of the Current Child Health System

On any number of measures, the health care system is delivering suboptimal results for children.

- Nearly 10 million children nationally and 700,000 children in California are uninsured. More than half of these children are eligible for public health insurance programs.[1]

- While access problems are particularly severe for uninsured children, children with coverage also experience difficulties with timely access to recommended care. Children generally receive only 46.5% of care recommended for them and they are more likely to receive recommended acute care than recommended preventive care.[2]

- Adherence to recommended preventive care guidelines, particularly for adolescents and for certain domains such as developmental and behavioral assessment, is poor. Only 38 percent of adolescents nationally had a preventive care visit in the last twelve months.[3] Fewer than 50 percent of children nationally receive appropriate childhood development or behavioral health assessments during pediatric office visits.[4]

- Children experience significant disparities in access, quality, and outcomes. California children who are older (6 -17 years old), living in poverty (below 250% of FPL), and foreign-born are more likely to be uninsured and less likely to have a usual source of medical care. In its publication, publication "America's Health Starts With Healthy Children," The Robert Wood Johnson Foundation reports that children in poor families (below 100% of the FPL) are 4.5 times as likely and children in middle-income families are nearly 2 times as likely to be in less than optimal health than children in higher-income families (above 400% of the FPL). Hispanic children are nearly 5 times as likely as white children to be in less than optimal health.

- There is insufficient coordination across the continuum of medical and nonmedical services needed by children, particularly those with chronic or complex conditions. Among children with special healthcare needs, only 47% of children nationwide and 42% of children in California receive coordinated ongoing comprehensive care within a medical home.

- Parents are not well informed about their children's health or health care options and are not supported as active participants in their children's care. Adolescents face similar challenges with respect to their own care. The National Survey of Early Childhood Health reports that less than half of parents of young children report that their pediatric primary care provider offered thorough "anticipatory guidance" related to their child's health and development.[5]

- Children are increasingly burdened with chronic conditions, many of which are preventable. Asthma rates among children rose from 3.7% in 1980 to 12.7% in 2000,[6] while obesity rates increased from 5.7% of children in 1980 to 17% in 2006.[7] Recent research from the U.S. Centers for Disease Control and Prevention's Pediatric Nutrition Surveillance System indicates that the obesity trend may be stabilizing among low-income, preschool-aged. The prevalence of obesity in low-income two- to four-year-olds increased from 12.4 percent in 1998 to 14.5 percent in 2003, but rose to only 14.6 percent in 2008. However, the risk of developing serious chronic diseases such as type 2 diabetes, cardiovascular disease, and adult obesity still remains high.

Promising Technology-Enabled Innovations

A wide variety of ICT solutions that are being used today promote better health outcomes for children. In addition to electronic health records and health information exchanges, innovators are employing online benefit enrollment programs and integrated eligibility systems; remote monitoring technologies and telehealth services; personal health records; technology-supported translation services; automated pre-visit questionnaires; and chronic care support and self-management tools through mobile technologies, social media, and gaming technologies. Examples of some of these innovations, organized by the kinds of care improvement they help to support, are highlighted below. While in some cases these examples highlight child-specific applications of technology, in many cases these innovations are not unique to children but are deployed in ways that meet children's needs along with other populations. For further information and additional examples, refer to the supplemental materials listed at the end of this document.

Access to Care

Every child requires access to affordable, high-quality health care. Achieving this goal involves both increasing the number of children with health insurance and removing barriers to care due to time, distance, language, and availability of appropriate providers. ICT can facilitate enrollment in public benefit programs designed to assist low-income and underserved populations, through the use of online applications and data-driven enrollment processes. It can also extend care outside of traditional locations and into community-based settings to provide access to acute care, emergency department consultations, behavioral health services, and other specialist care, particularly for children who live in rural and other underserved areas or whose families face transportation and other economic barriers, limiting their ability to travel to doctors' appointments. Examples include:

- Utah Clicks is a Web-based program that provides a single electronic application for Medicaid, CHIP, Healthy Start, and other maternal and child health programs. The information that is collected is used both to enroll children into the programs for which they are eligible and to coordinate service delivery across programs.

- Health-e-Access, a program at the University of Rochester Medical Center, provides interactive, Internet-based virtual health care visits to diagnose and treat routine childhood illnesses in 19 urban and suburban schools and childcare centers.

- The Health Care Interpreter Network (HCIN), a cooperative of California hospitals and health care providers, provides on-demand access to medically trained interpreters fluent in 170 languages including American Sign Language (ASL) via low-cost, high-quality interactive videoconference screens or high-quality handsets or speakerphones accessible or movable throughout hospitals and health clinics.

Preventive Care and Health Promotion

The child health care system should be realigned toward preventing illness and promoting wellness and healthy behaviors. Achieving this goal involves taking a whole-child approach to prevention to include strengthening early childhood development efforts, acknowledging and addressing social determinants of health, supporting children and families in adopting healthier behaviors, and incorporating population health measures and practices. ICT can help to educate children and parents about health promotion and wellness, provide tools to support them in adopting healthier behaviors, and assist providers in appropriate screening and referral practices. Examples include:

- KIDSNET, an electronic child health information system for every child in the state of Rhode Island, integrates data from ten databases (e.g., the newborn developmental risk screening program database, vital records, etc.) and allows authorized users (e.g., physicians, school nurses, etc.) to access data relevant to the care they are providing either at an individual or aggregate level.

- Help Me Grow, a utility-style program of the Connecticut Children's Trust Fund, provides a statewide toll-free number for connecting families with providers, programs, and services for children with developmental, health, and behavioral issues.

Child-Centered Care

Children's health care must be well coordinated, continuous, and specifically tailored based on the individual child's background and environment. Achieving this goal involves identifying the particular needs of the child and coordinating information-sharing and services among the team of medical and nonmedical providers involved in their care, including patients and family members. ICT can support the diffusion of care among a team of professionals of varying levels of specialization, dispersed among traditional and alternate sites, working together efficiently to meet the whole child's needs. It can also support chronic care management and care delivered in the home, including self-care. Examples include:

- The Children's IQ Network integrates the health care data of children within the Washington, DC metropolitan area, enabling the secure electronic exchange of patient information by area physicians, primary care clinics, foster care programs, and mobile medical units.

- The Starlight/Starbright Foundation provides interactive games and social networking programs to help children understand and self-manage chronic conditions such as asthma, cystic fibrosis, and diabetes.

- The University of California, Irvine, Neonatal Intensive Care Unit Program utilizes mobile technologies to assist families in providing at-home care for premature infants in the immediate months after leaving the newborn intensive care units.

Evidence-Based Care

The child health care system can improve health care quality for children by developing the evidence basis for pediatric care and measuring adherence to best practices. ICT can facilitate the availability of de-identified, population-level data to aid researchers, program planners, and policy-makers in evaluating outcomes and designing future health interventions that promote best practices and quality measurement at the population and individual levels. These efforts can also reveal and help to address persistent health disparities among vulnerable child populations. Examples include:

- The Arizona Health Care Cost Containment Medicaid Health Information Exchange is a statewide health information network designed to integrate online application data with an electronic health record to provide data-driven, outcome-focused quality improvement and clinical decision support tools.

- The Healthy City Project is an online database and GIS mapping platform utilizing demographic, economic, and health data to connect low-income and underserved families to thousands of local services and resources in and around Los Angeles County.

Forecasting Technology-Enabled Innovation
While there are some promising examples of ICT being implemented in settings and ways to benefit children's health, they are often in their early stages of development or deployed as relatively small-scale pilots. The forecasts provided in the supplemental materials describe the factors that are likely to determine which technologies, if any, will mature into robust, commonplace practice over the next two, five, and ten years. A summary of the factors likely to facilitate progress and challenges to avoid are summarized below.

Facilitating Factors
Health care applications of information and communication technology will continue to proliferate at a breakneck speed, bringing new tools and information to children and families, where they are. Consumer demands will increasingly push these tools in a direction that serves consumer interests. As children and youth are particularly comfortable with the relevant technologies, they will increasingly demand and make use of them for their health needs. The proliferation of affordable cell phone, mobile computing, and broadband technologies could soon provide nearly ubiquitous access to related technologies for most socio-economic and age groups.

In addition to these market forces, new policy attention backed by financial incentives promises to promote the development and utilization of certain kinds of ICT, including for children's health care. The ARRA emphasizes EHRs and HIE as a means to quality improvement and other positive outcomes. It also requires specific policy attention to addressing children and other populations with unique needs. The Children's Health Insurance Program Reauthorization Act (CHIPRA) of 2009 provides funds to test the use of HIT to improve quality and to develop a model EHR to support children enrolled in Medicaid and CHIP. Similarly, the emphasis on service-oriented architecture through the Medicaid Information Technology Architecture (MITA), an initiative of the Centers for Medicare & Medicaid Services, supports structural overhaul that can improve interoperability and quality. Finally, a renewed policy interest in comprehensive health reform—including coverage expansion, quality improvement, and cost containment—may provide additional opportunities to advance technology-enabled innovations to transform care delivery for children and adults.

Challenges
Despite the best intentions to improve health outcomes and transform health care, ICT has the potential to mask or reinforce current dysfunctions in the health care system. Traditional medical practices, business models, and proprietary interests, backed by reimbursement policies, are likely to continue to create inertia and stifle the success of technology-enabled innovations. As a result, inefficient and error-prone paper processes may be replaced by electronic versions of the same, rather than by electronic systems that improve the way health care is delivered. Wellness and health promotion, including development and implementation of HIT to support preventive services and healthier behaviors, may continue to be neglected. Careful attention to developing and monitoring evidence on the outcomes of ICT investments will be essential to ensuring desired results, particularly with respect to children.

Another central challenge is the potential for technology-enabled innovations to enhance, rather than reduce, disparities in the health care system, particularly for children. Evidence suggests that physicians who treat children, particularly pediatricians, and physicians who treat low-income and racial and ethnic minority populations are slower to adopt HIT into their office practice than other physicians. For example, a national survey of federally funded community health centers indicated that only 13% of those providers serving vulnerable populations had the minimal set of EHR functionalities, and that, as a result, community health centers serving the most poor and uninsured patients were least likely to have

functional EHRs.[8] Furthermore, technology costs, including broadband access, can impede access to and use of some ICT tools by low-income families. Without careful public policy approaches to address these concerns, children and traditionally underserved populations may face even greater disparities in health care access and outcomes as they and their care providers are left behind in the HIT revolution.

Current ICT Developments in California
The state of California is in the midst of tremendous information technology development. Initiatives currently in development include procurement of a new claims processing system for Medi-Cal, California's Medicaid program; implementation of the Medicaid EHR incentive payments under ARRA; enhancement of the burgeoning health information exchange infrastructure in the state, with funding made available under ARRA; planning for integrated, online application and/or eligibility systems for state programs such as Medi-Cal; design of a new, Web-based child welfare services case management system; and deployment of broadband connectivity to rural health care providers through the California Telehealth Network. Each of these efforts has the potential to significantly impact California's nearly 10 million children, of whom over 40% are served by Medi-Cal, with an additional 205,000 uninsured children eligible but not enrolled in the program,[9] more than one million reside in rural areas,[10] and more than 100,000 are referred to child welfare services each year.[11] With careful coordination across these and similar efforts, California could make significant strides in promoting better child health outcomes through technology-enabled innovations.

Areas of Opportunity
In the course of developing the ICT forecasts, several categories of ICT solutions were identified as high-priority areas of opportunity for transforming children's health as part of California's emerging strategies for strengthening the state's HIT/HIE infrastructure. These three categories of technology reflect different yet synergistic elements of that strategy.

- The first category of ICT solutions involves child-specific aspects of approaches that are already integrated into the core HIT/HIE infrastructure and are expected to play an important role in facilitating data-sharing going forward. Technologies that fall into this category include bi-directional public health information exchanges (e.g., immunization registries) and other cross-system information exchange to facilitate coordination of services for children (e.g., participation of school-based providers in HIE networks).

- The second category of ICT solutions complements the core HIT/HIE infrastructure to bring additional benefit for children. Examples of technologies in this category include online benefit enrollment programs, remote monitoring and telehealth, and personal health records (PHRs).

- The third category of ICT solutions includes consumer-directed technologies with a high potential to improve children's health. While these approaches are not currently a focus of California's HIT/HIE strategy, they should nonetheless be given strong consideration due to their potential to reach a wide audience of children and augment efforts in prevention, education, disease management, adherence, and other areas. Examples of technologies in this category include mobile technologies (e.g., smartphones) and social media technologies.

All three of these technology categories would benefit from additional study on how best to deploy them and capture their benefits for children in California. This is particularly true for the second and third categories, which may otherwise be overlooked in the state's HIT/HIE planning.

Recommendations
Information and communications technology can support significant transformation in health care delivery for children if it is both deployed in the *right places* to reach children and includes the *right functionality* to be useful for children's care. Implementation of the HIT provisions of the ARRA offers the most immediate opportunities for advancing these goals, but the need to address the goals will likely persist long after these policy opportunities dissipate. Additional action will be required if the goals are to be fully realized. A parallel track of work to support the above policy actions and guide policy for the next decade involves the development of a Technology Roadmap that will identify ICT priorities and related high-level policy and operational changes for improving children's health.

As California continues to develop its ICT infrastructure, and particularly as it develops strategies for implementing the HIT/HIE provisions of the ARRA, the following recommendations highlight actions that state policy leaders can take to ensure that these efforts support child health system transformation and better health outcomes for children over the long term. It is important to note that while these recommendations highlight the particular benefits for children, many of these policies would also benefit other populations, particularly those that are underserved.

1. *Develop a comprehensive strategic plan that specifically contemplates children's needs.* California's immediate activities in pursuit of ARRA opportunities should be guided by a robust statewide ICT strategic plan that includes the following elements:

    a. Specific objectives and measures to ensure children's needs are addressed. Including these elements in the state's comprehensive strategic plan will help to satisfy the state's specific requirement under section 1903(t)(6) of the Social Security Act, as created by the ARRA, to ensure "that populations with unique needs, such as children, are appropriately addressed" when establishing the means for Medicaid providers to demonstrate meaningful use of certified EHR technology. These objectives and measures should be informed by and consistent with ongoing quality measurement and improvement efforts in Medi-Cal and the Healthy Families Program.

    b. A comprehensive vision of the desired health care system transformation that contemplates a wide array of beneficial technologies, not limited to EHRs, telehealth, and HIE. In particular, technologies designed to support patients, including children and their parents or guardians, should be contemplated along with technologies that are designed to meet clinicians' needs. While not all of these technologies will be pursued by the state in the immediate phases of the planning process, including them as part of the longer term vision will help to encourage private development of the technologies and ensure that state efforts do not inadvertently preclude beneficial adoption of these technologies as they emerge.

    c. Clear articulation of the ways in which the many ICT efforts the state is currently considering, supporting, or engaged in, as highlighted above, will be coordinated to ensure efficient and cost-effective technology development and seamless information exchange.

2. *Prioritize ICT solutions of particular, though not exclusive, relevance to children.* Based on our research, we have identified four key priority areas in which technology-enabled innovation can promote the transformational goals for children's health outlined above. In most cases, there are multiple ICT approaches that could be pursued in each of these priority areas. The strategic planning process should identify the specific approach(es) to be taken in each area and methods for encouraging the adoption of such approaches, such as through meaningful use requirements and regional extension center services where applicable.

    a. *Facilitate coordination across programs and services for children.* California's ICT standards and infrastructure should enable the seamless, bi-directional sharing of appropriate information among the array of professionals, programs, and settings that serve children. The State's strategic plan should contemplate how public health departments, other relevant service providers (such as schools, social services, child welfare services, and juvenile justice), and the medical sector will be able to share information about the children they serve at the individual and population levels, as appropriate and consistent with privacy protections and child and parent preferences. The strategic plan should encompass the full scope of information necessary for coordinating services, including information related to eligibility, utilization, quality, and outcomes. California's use of federal funding made available through Section 3013 of ARRA should include support for these aspects of the strategic plan, such as developing the capacity for public health departments and/or school-based health care providers to participate in health information exchange.

    b. *Promote wellness and preventive care, at both the individual and population levels.* Public health objectives under the state's strategic plan should include health promotion as well as surveillance and emergency response. The strategic plan should identify preventive health

priorities and the means by which information exchange among families, health care providers, public health departments, schools, and community-based organizations involved in health promotion initiatives will enable progress on those priorities. For example, the state's ICT standards and infrastructure should facilitate better adherence to childhood immunization guidelines and better sharing of and follow-up on newborn screening results, and the Medi-Cal meaningful use requirements should drive progress toward those goals.

c. *Expand the capacity of the existing workforce to deliver high-quality care for children.* ICT tools can enable more efficient use of the existing health care workforce for children and improve children's access to health care. For example, the combined use of EHRs and telemedicine can support a diffused care team operating at a variety of traditional and nontraditional sites, such as schools, to meet a child's comprehensive care needs. In addition to ensuring that the state's telehealth, HIE, and EHR capabilities include support for care provided to children in schools and other nontraditional settings, the State can ensure the availability of other supports for care team approaches. For example, as the State assists public institutions of higher education in applying for workforce training grants under the ARRA to support the HIT training of a wide ranging set of professionals serving children and underserved populations in both traditional and nontraditional sites, it should use this training opportunity to instruct professionals in ways to use HIT to support a care team that includes the primary care provider.

d. *Engage and support children and parents in managing children's health.* Bidirectional sharing of information with children and parents supports each of the priorities listed above, including care coordination, health promotion, and expanding the capacity of the existing workforce. Therefore, the State's strategic plan should clearly articulate how it will provide patients—including children and their parents—with safe, secure, and timely access to their personal health information and other health information and tools to support their decision-making. The strategic plan should also contemplate patients' and their caregivers' communications with their providers, including through mobile technologies, secure messaging, patient portals, telehealth, gaming, and other technologies that can enhance the value of EHRs and HIE. Additional patient-directed components of the state's plan should include:

   i. Use of ARRA funding to extend the state's broadband infrastructure to reach families in underserved areas.

   ii. Means to ensure that patients are informed about the state's HIT/HIE efforts, its impact on their care, related information-sharing standards, and their privacy rights.

   iii. The availability of assistance to families in using the new HIT/HIE tools. Section 3013 of the ARRA specifically authorizes the use of funds for this purpose.

3. *Clarify standards for information-sharing and privacy protection for children and families.* As noted above, the State should ensure that Californians are informed about its HIT/HIE efforts, its impact on their care, related information-sharing standards, and their privacy rights. Clear and accurate materials should be presented at times and in a format to allow patients—including children and parents—meaningful consideration of the implications, opportunities to ask questions and redress grievances, and mechanisms to place appropriate limits on information-sharing. In conjunction with this recommendation, the State should take the following steps:

   a. Clarify the interplay between federal and state privacy protections related to information about children across the many programs and services available to them, and develop model data-sharing agreements in order to foster a common understanding among children and families and all those who serve their needs.

   b. Promote the use of technology to appropriately protect children's health information. For example, technology can support patient communication in two ways—one for a parent and one for their adolescent child—in order to encourage open communication between adolescents and their providers. Technology can also manage patient preferences and privacy standards to tailor the scope of information that providers and others are authorized to view.

    c.   Exercise the new authority under the ARRA for State Attorneys General to enforce federal health privacy rules, including the provision under the ARRA granting patients the right to obtain an electronic copy of information contained in an EHR.

    d.   Encourage better access to and use of de-identified data in order to protect privacy while encouraging data-driven planning, coordination, and policy-making.

4.   *Consider complementary policy changes.* While ICT developments outlined in this Executive Brief have the potential to significantly improve child health outcomes, additional policy changes will be needed to ensure that the technologies are used effectively and in support of the transformational goals. The following recommendations highlight promising approaches for state policy leaders interested in promoting such transformation.

    a.   *Ensure that all children have access to high-quality, affordable coverage.* California has recently underfunded its Healthy Families Program, reducing children's access to health coverage. In addition to addressing this funding shortfall, state policy leaders should design enrollment procedures that impose the least administrative burden on families and utilize electronic data and procedures to the greatest degree to maximize the enrollment of eligible children.

    b.   *Minimize programmatic barriers to coordination.* Program rules and funding restrictions often prohibit or undermine efforts to coordinate services across the many programs and settings that serve children, such as schools, behavioral health, developmental health, social services, child welfare services, public health, juvenile justice, and Medi-Cal and Healthy Families. State policy leaders should work with their federal counterparts to minimize federal barriers and should review and revise state rules to the greatest extent possible within existing federal authority.

    c.   *Reform payment systems to promote transformational goals.* State policy leaders should consider payment reforms, particularly in Medi-Cal and Healthy Families, to promote the uses of technology to improve children's health that are outlined in this brief. In many cases, that will require reforming payments for health care services, not technology. For example, state policy leaders should review and revise Medi-Cal reimbursement policies to more effectively support integrated prevention and health promotion efforts (e.g., coordinated efforts between schools, health care providers, and public health agencies) and to promote the diffusion of pediatric care to teams of service providers—including clinical, allied health, and nonhealth providers—across an array of settings, supported by HIT.

    d.   *Review scope of practice and clinical supervision requirements to promote care teams.* While technology can support diffusion of pediatric care across care teams, scope of practice and supervision requirements may limit the effective use of these technologies.

    e.   *Further limit uses of personal health information that harm individuals.* Prohibit the improper use of personal health information and define improper use to help families feel more comfortable with sharing data, such as by prohibiting its use to deny care or discriminate.

Conclusion

California is moving forward with ICT strategic planning, including planning for implementation of the HIT/HIE provisions of the ARRA, with the goal of benefiting the health and well-being, safety, efficiency, and quality of care for all Californians. To reap the full benefits of these investments for children, it will be crucial for state leaders to specifically consider the unique needs of children and the ways in which technology can best be deployed to meet those needs. In particular, uses of technology to facilitate care coordination across the array of programs and services for children, promote wellness and preventive care, expand the capacity of the existing workforce to care for children, and engage children and parents in their care will be crucial. With careful consideration of these priorities and leveraging of funding and authority through the ARRA, California can make significant progress toward reducing, rather than exacerbating, the disparities in health outcomes among California's children, leading to lower health costs and a healthier, more productive population over the long term.

SUPPLEMENTAL MATERIALS

- Forecasts
- Key Trends
- Expert Panel Summary
- Background Data on Children's Health

- Program Summaries
- Technology Profiles
- Glossary of Terms

To access additional these supplemental materials, please visit
www.childrenspartnership.org/HITInnovationForChildren .

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ABOUT US

Health Technology Center
The Health Technology Center (HealthTech) is a nonprofit research organization and expert network whose mission is to advance the adoption of beneficial technologies in healthcare.

The Children's Partnership
The Children's Partnership (TCP) is a national, nonprofit organization working to ensure that all children—especially those at risk of being left behind—have the resources and the opportunities they need to grow up healthy and lead productive lives.

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ENDNOTES

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