Kansas Health Information Technology/ Health Information Exchange Policy Initiative

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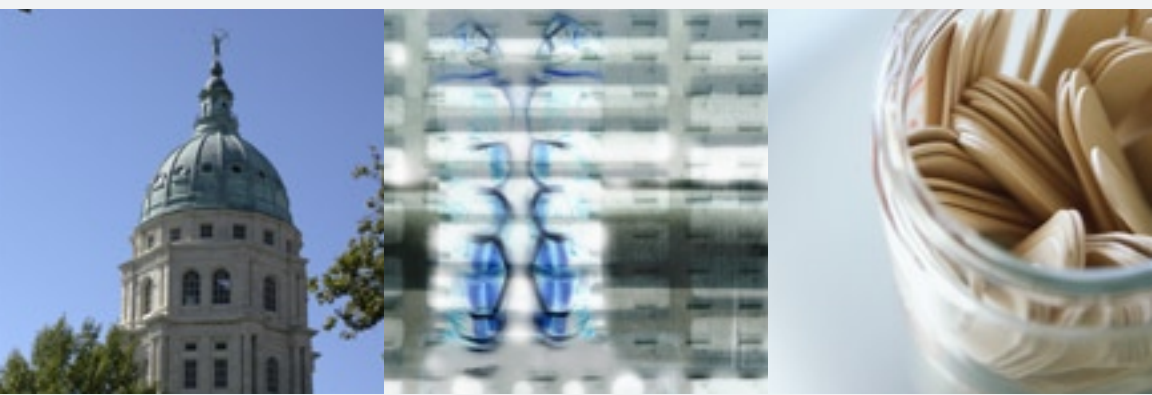John K. Evans
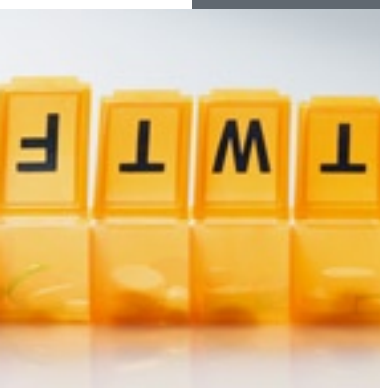Amy Helwig
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TABLE OF CONTENTS
Kansas HIT/HIE Policy Initiative

Executive Summary

Over the past several years the Federal government and a number of states have begun devoting increased attention to the impact that timely and accurate health information can have on improving the quality, safety, and cost-effectiveness of the health care delivery system. The State of Kansas has assumed a leadership role among states across the country in developing plans to use health information technology and the exchange of health data to achieve these improvements.

Beginning in the Fall of 2005, efforts were initiated by Governor Kathleen Sebelius and key stakeholders across Kansas to develop a vision and initial strategy promoting the adoption of health information technology (HIT) and health information exchange (HIE). Funding for the HIT/HIE Policy Initiative was provided by the Sunflower Foundation, the United Methodist Health Ministry Fund, the Kansas Health Foundation, and the Kansas Health Policy Authority.

Since that time, significant progress has been made with contributions from Kansas health care leaders across the state on developing infrastructure that will enable health information exchange in our state. This statewide effort resulted in specific recommendations regarding clinical, financial, technical, privacy and security, and governance aspects of health information exchange. Seven core recommendations were developed to drive the implementation of an HIT and HIE plan for the State of Kansas. Each recommendation includes a series of explicit actionable steps.

01 ESTABLISH A LEADERSHIP GROUP

There is a need to maintain the momentum established over the past year and begin implementing recommendations developed as a result of the statewide Initiative. This group should focus on broad policy issues surrounding HIE, create the most appropriate mechanisms for advancing HIE in Kansas, and promote the public good by ensuring an equitable and ethical approach to the use of private and secure health information.

02 CREATE A PUBLIC/PRIVATE ENTITY TO ADVANCE HIE OVER THE LONG-TERM

To further the work of the Leadership Group over the long term, a public/private not-for-profit entity should be established to assume responsibility for HIE activities on a statewide basis. This public/private Coordinating Entity should facilitate collaboration and development of intra- and inter-state HIE through education, provide technical assistance, serve as a resource center, foster pilot projects, and develop best practices.

03 PROVIDE EDUCATION TO ALL STAKEHOLDERS REGARDING HIT AND HIE

Developing communication and education based on common HIT and HIE terminology is requisite for public understanding and acceptance of HIE, formulation of public policy, and sustainable financing. Additionally, further development of an IT savvy workforce and building physician leadership across the state are critical to the adoption of HIT and HIE.

04 LEVERAGE EXISTING RESOURCES AND EXISTING DATA SOURCES

A number of resources exist in Kansas that exchange health information, finance the exchange, of health information or benefit from the exchange of health information. Coordination of HIE across state agencies, collaboration with entities addressing the same issues surrounding HIE, and aligning incentives to foster HIT and HIE are necessary to ultimately have the desired impact of improving health care quality, safety, and cost-effectiveness. The Kan-Ed network can be built upon to further the infrastructure needs of many health care providers across the state, especially in rural areas. At the same time, a number of public and private HIE initiatives in Kansas are already underway and should be leveraged as building blocks for HIE. Some of these include: Healthe Mid America, Kansas City Regional Electronic Exchange (KCREE), KC Care Link, the Medicaid Community Health Record Pilot, and the state's Immunization Registry.

05 DEMONSTRATE THE IMPACT OF HIE

To foster the adoption of HIT and interoperable exchange of health information, it is imperative that its value and impact on the health care system be demonstrated to many audiences. This includes quantifying the impact of HIE on all aspects of the health care system. Patients and consumers need to understand that their individual health information will be kept private and secure, and that sharing this information can improve their care. Providers need to know the impact not only on quality and safety, but also on their workflow and finances as. Employers and payers need to understand the value of HIE in reducing cost and promoting efficiency.

06 RESOLVE PRIVACY AND SECURITY BARRIERS ASSOCIATED WITH HIE

Personal health information must be kept private and secure, and individuals must be able to control their own information and who has access to it. A series of patient, business, legal, and regionally focused solutions are recommended here that address barriers to health information exchange and preserve privacy and security.

07 SEEK FUNDING FROM MULTIPLE SOURCES

Developing HIEs should seek seed funding from a variety of sources. The public/private Coordinating Entity and/or Resource Center can assist with the identification of available funding and/or the provision of grant funds to catalyze HIE. Consideration should be given to the development of an investment fund that can be used to fund innovations in HIE.

This report, intended to be a resource for policymakers and state leaders, represents a compilation of strategies and specific actions recommended by Kansas health care stakeholders who have worked diligently over the last six months to develop a plan to advance HIE while ensuring patient privacy and security.

"**Health information technology and information exchange can greatly improve the quality and safety of our health care system. We must work together to foster the use of technology to improve health care and ensure that individuals' health information is kept private and secure."**
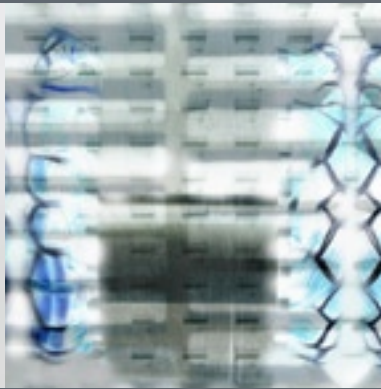
Governor Kathleen Sebelius

Health Information Exchange (HIE) reflects the infrastructure to enable data sharing between organizations. Services are built once and used multiple times by many. Items such as a central Web site, health care terminology translation tools, a Master Patient Index, authentication and authorization infrastructure, and applications to aggregate information from multiple sources are examples of HIE resources.

Introduction

The use of health information technology (HIT) and health information exchange (HIE) to transform the health care system has been a top agenda item nationally and locally for several years. Consensus has emerged that HIT and HIE, when implemented properly, can improve the quality, safety, and efficiency of health care. Kansas, like many other states, has begun a dialogue with health care stakeholders on how best to promote the adoption of HIT and foster HIE for the betterment of the health care system. This document reflects the thinking of Kansas leaders in health care, business, government, and advocacy on how to develop an infrastructure to support HIE in Kansas that will lead to better patient care and a more efficient health care system.

Health Information Technology (HIT) is the local deployment of technology to support organizational business and clinical requirements. HIT is technology implemented within the physical space of a doctor's office, laboratory and hospital or virtually through a hospital system. Items such as Electronic Medical Records (EMR) systems, administrative systems (such as billing), and workflow systems are examples of HIT systems.

Background

In November 2004, Governor Kathleen Sebelius announced the Healthy Kansas Initiative, a continuation of the health reform agenda she began as Insurance Commissioner. The most significant component of the Healthy Kansas Initiative was streamlining state health care purchasing which led to the creation of the Kansas Health Policy Authority. Another component of Governor Sebelius' health care reform was to address the problem of soaring health care costs system-wide, through the creation of the Kansas Health Care Cost Containment Commission (H4C). The Commission, chaired by former Lieutenant Governor John Moore, was charged with focusing on ways to improve the quality, safety, and cost-effectiveness of health care. Not surprisingly, the H4C identified HIT and HIE as most promising to improve the health care system and commissioned the HIT/HIE Policy Initiative.

Kansas HIT/HIE Policy Initiative History

The purpose of the Initiative's first phase was to perform an initial assessment of HIT and HIE capacity in Kansas, develop a shared vision with Kansas stakeholders for the adoption of HIT and interoperable HIE, and develop key principles and actions for an e-health information strategy in Kansas.

KEY EVENTS AND ACTIVITIES THAT OCCURRED DURING THE FIRST PHASE OF THE PROJECT

Summer 2005
Kansas Hospital Association (KHA) Electronic Health Record Working Group – The Electronic Health Record (EHR) Working Group, originally convened to develop guidance for provider organizations implementing HIT, developed several recommendations that were incorporated into the statewide HIT/HIE initiative undertaken by the H4C. These recommendations include:

- Establish a mission/vision for a statewide strategy

- Develop an independent, collaborative governance model

- Develop sustainable funding and resources

- Follow common definitions and standards to allow for interoperability and information exchange

- Promote privacy and security while pursuing the organizational mission

- Facilitate HIT/HIE with an open architecture and secure environment

Fall 2005
H4C commissioned the Kansas HIT/HIE Policy Initiative - Performed an initial assessment of HIT and HIE in Kansas via interviews with Kansas health care leaders, developed a shared vision for the adoption of HIT and interoperability in Kansas, and created key principles and high level actions for a statewide e-health information strategy in a briefing paper.

Fall 2005

Kansas Stakeholder Interviews - Health care leaders from hospitals, physician practices, health plans, employers, academic medical centers, advocacy groups, and government were interviewed about the current status of HIT implementation and HIE in Kansas, HIT's potential to address the state's health care challenges, and actions needed to move the state toward broader adoption of HIT and HIE. These interviews confirmed that HIT and HIE are increasingly viewed as important tools to address the health care challenges the state faces. Major themes from the interviews included:

• Support for the development of independent regional networks across the state that are coordinated and connected

• Belief that the State could serve in a leadership capacity by facilitating, coordinating, and convening stakeholder groups and support for a public/private approach

• Strong support for the Governor's and Lt. Governor's efforts to increase the priority and visibility of HIT and HIE

• Emphasis on Kansas' rural areas, especially rural hospitals and small independent physician practices in any exchange effort (over 79 percent of the community hospitals in Kansas are located in a rural setting, compared to less than 44 percent of hospitals on a national level.[1]

• Barriers identified include: lack of interoperability standards, financing, and stakeholder understanding and knowledge of HIT/HIE privacy and security

1 Kansas Hospital Association, 2004 Annual Stat Report

January 27, 2006

Wichita, Kansas Statewide Stakeholder Meeting - Approximately 60 stakeholders from across the Kansas health care community developed a shared understanding of national and Kansas HIE activity and began creating a statewide HIE strategy. The briefing paper outlining an initial assessment of HIT and HIE activities in Kansas and capturing Kansans' perspectives on HIT and HIE was distributed.[2]

February 16, 2006

Topeka, Kansas HIE Steering Committee Meeting – The HIE Steering Committee of the H4C, composed of a diverse group of stakeholders, assembled to create draft vision, values, and guiding principles; examine potential first-year projects; discuss governance models; and begin developing methodology to prioritize future HIE efforts.

March 1, 2006

The Health Information Security and Privacy Collaboration (HISPC) - The H4C, in partnership with the Kansas Health Institute, the University of Kansas Center for Healthcare Informatics, the Mid-America Coalition on Healthcare, and Lathrop & Gage submitted a proposal in response to the Federal Department of Health and Human Services' request for proposals through RTI International and the National Governor's Association and was awarded a contract for over $305,000. Kansas is one of 33 states and Puerto Rico awarded contracts as part of the national HISPC contract through the Agency for Healthcare Research and Quality. The purpose of the project is to assess business practices and policies associated with the exchange of health information and develop solutions to potential barriers.

March 6, 2006

Topeka, Kansas HIE Steering Committee Meeting - The HIE Steering Committee of the H4C finalized the vision, values, and guiding principles drafted at the Feb. 16, 2006 meeting, completed the methodology for prioritizing future HIE projects, and established an agenda for the March 23, 2006 statewide stakeholder meeting.

March 23, 2006

Topeka, Kansas Statewide Stakeholder Meeting - Achieved consensus on vision, values, and guiding principles for an HIE infrastructure in Kansas. Attendees discussed and provided feedback on future HIE projects; volunteered to participate in HIE Working Groups; and defined success for Phase 2. This meeting culminated in the launch of Phase 2 of the Kansas HIT/HIE Policy Initiative, which included the creation of multi-stakeholder Workgroups.

PHASE 2
Kansas HIT/HIE Policy Initiative Workgroups

The need to foster the adoption rate of HIT and the implementation of HIE in Kansas was established during the first phase of the Kansas HIT/HIE Policy Initiative. Building upon consensus achieved during two statewide stakeholder meetings in January and March 2006, Kansas decided to undertake phase 2 of the Initiative.

The second phase of the Kansas HIT/HIE Policy Initiative involved an intensive 180 day Workgroup process launched in summer 2006. The goal of this process was to determine governance roles and structure; and to further the implementation and coordination of regional and statewide HIE projects in Kansas. Five multi-stakeholder Workgroups were created, including Clinical, Technical, Finance, Governance, and Privacy and Security. Privacy and Security was handled through the HISPC subcontract. The Workgroups had broad stakeholder participation that was inclusive and provided a means for all interested individuals and organizations to be represented. Please see Appendix A for a listing of Steering Committee members and individuals that participated in each Workgroup.

Figure 1.0 Prioritized Clinical Outcomes and Data Elements

PRIORITIZED HIE CLINICAL OUTCOMES
Better access to patient medical information across organizations (and providers)
Faster transmission and viewing results
Improved efficiency of care
Less caregiver repeating of historical information
Better access to medical information between providers/organizations
Avoid duplicate medical procedures, patient and caregiver access and use of personal medical record
Reduce duplicate medication use, fewer medical injuries
Decision support alerts and reminders
Medication reconciliation reduce preventable hospitalizations
Assured completion of process, quality, safety and cost benchmarks
Improve emergency resource management

- Access and Continuity of Care Information
- Reduce redundant care and patient safety
- Support Quality Systems

NECESSARY DATA ELEMENTS	
#1	Demographics
#2	Medications and Diagnosis (equal rank)
#3	Allergies
#4	Laboratory
#5	Radiology
#6	Immunizations

CLINICAL
Chair: Howard Rodenberg, M.D., Health Director, Kansas Department of Health and Environment
Facilitator: Amy Helwig, M.D., Medical Director, eHealth Initiative
The Clinical Workgroup was charged with identifying and prioritizing clinical outcomes desired from HIE and the data elements necessary to achieve those outcomes. (Please see Figure 1.0). The clinical outcomes and data elements were then utilized to develop practical applications for information exchange, e.g. clinical messaging, e-prescribing, etc. (Please see Appendix B for Clinical Use Case Scenarios and Clinical Barriers.)

TECHNICAL
Chair: Diana Hilburn, M.S.M., Vice President and Chief Information Officer, Via Christi Health System
Facilitator: Jay McCutcheon, M.B.A., eHealth Initiative
The Technical Workgroup was tasked with measuring the HIT and HIE capacity in Kansas and addressing technical barriers related to interoperable HIE. This Workgroup conducted a technical assessment of HIT/HIE in Kansas (Please see Appendix C for Technical Assessment and Technical Barriers), assessed the Clinical Workgroup's practical applications (use case scenarios) to determine the technical feasibility of each, reviewed potential technical models for Kansas, and made recommendations.

FINANCE
Chair: Scott Glasrud, M.H.F.M, Chief Financial Officer, University of Kansas Hospital
Facilitator: Jay McCutcheon, M.B.A., eHealth Initiative
The Finance Workgroup was charged with evaluating existing HIE financial models and making recommendations for a sustainable financial model in Kansas. Based on reviews of existing HIEs as well as guidelines for state HIE efforts, a financial matrix was developed to assist new HIEs in developing a sustainable financial model. (Please see Appendix D for HIE Products and Services Matrix.)

GOVERNANCE
Chair: Robert St. Peter, M.D., President, Kansas Health Institute
Facilitator: John K. Evans, M.H.A., eHealth Initiative
The Governance Workgroup was chartered to examine governance needs, to coordinate and facilitate HIE implementation in Kansas, and explore potential public/private collaborative structures for an HIE organization that would support the development and implementation of HIE in Kansas. The Governance Workgroup identified the potential scope and role of a statewide HIE Coordinating Entity, as well as recommended guidelines for regional HIEs. (Please see Appendix E for Governance Workgroup Recommendations and HIE Guidelines and Appendix F for HIE Guiding Principles.)

PRIVACY AND SECURITY (HISPC)
Steering Committee Chair: Helen Connors, Ph.D., Executive Director, KU Center for Healthcare Informatics
Project Manager: Robert St. Peter, M.D., President, Kansas Health Institute
HISPC Workgroup Chairs:
    Variations: Bill Bruning, J.D., President, Mid-America Coalition on Healthcare
    Legal: Jeff Ellis, J.D., Partner, Lathrop and Gage
    Solutions: Robert St. Peter, M.D., President, Kansas Health Institute
    Implementation Plan: Judy Warren, Ph.D., Director of Nursing Informatics, KU Center for Healthcare Informatics
The Health Information Security and Privacy Collaborative (HISPC), under contract with RTI, assessed variations in business practices and policies relating to health information exchange, mapped those practices and policies to legal drivers, developed solutions to barriers to health information exchange, and developed an implementation plan for those solutions. The recommendations of the Kansas HISPC to enable health information exchange are included in this document.

Each Workgroup Chairperson also served as a member of the HIT/HIE Steering Committee to the H4C - chaired by former Lt. GovernorJohn Moore. The Kansas Health Policy Authority (KHPA) provided project management and staff support for the initiative.

15

Recommendations

The recommendations below are a synthesis of analysis, discussion, and deliberation by Kansas health care leaders and stakeholders over the last six months on how health information exchange can and should be developed in our state. These recommendations reflect their collective experience, expertise, and priorities. For information on the work products of each Workgroup, please see Appendices B-F.

A guiding principle of the Workgroups' efforts and of this report is to identify opportunities to advance HIE that are practical, achievable, and actionable. Scarce resources (financial, human, time, etc), lack of interoperability standards, and a dearth of proven HIE models demand careful examination of proposed actions. Therefore, the Workgroups emphasized a focus on incremental change. In addition to practical application, recommendations were considered from perspectives of urgency and feasibility. This report was constructed with initiatives that provide either a high level of urgent value, feasible value, or both.

Recommendation 1: Take Immediate Steps to Implement Short Term Recommendations of the Kansas HIT/HIE Policy Initiative

Recommendation 2: Create a Public/Private Coordinating Entity to Advance HIE over the Long Term

Recommendation 3: Provide Consumer and Stakeholder Education

Recommendation 4: Leverage Existing Resources

Recommendation 5: Demonstrate the Impact of HIE and Foster Incremental Change

Recommendation 6: Address Privacy and Security Barriers

Recommendation 7: Seek Funding from Multiple Sources

RECOMMENDATION 1
Take Immediate Steps to Implement Short Term Recommendations of the Kansas HIT/HIE Policy Initiative

The efforts of Workgroups through the Kansas HIT/HIE Policy Initiative over the past 180 days have resulted in a number of short-term and longer-term recommendations. While the longer-term recommendations are best undertaken by an established public/private entity, there are several immediate actions that should be taken to ensure that the momentum created by the Initiative continues and a statewide approach to HIE keeps pace with the developments occurring at the local and national level.

1.1 ESTABLISH A LEADERSHIP GROUP

It is recommended that a Leadership Group be immediately established to set the stage for developing a public/private structure. While it is expected that a separate governing body in the form of a public/private entity will be necessary to support the longer term recommendations of the Kansas HIT/HIE Policy Initiative, there is a need to maintain the momentum established over the past several months and begin advancing HIE.

To support continuity of purpose and ensure a smooth transition from recommendations to implementation, it is recommended that members of the current HIT/HIE Workgroups be considered for membership on the Leadership Group. The Leadership Group's role will include (Please see Appendix G for additional information):

• **Promote the Public Good through Leadership and Collaboration**
Promote the public good by providing leadership and encouraging collaboration and cooperation among HIE initiatives in Kansas and across state lines. Support and facilitate the adoption of HIT. Ensure an equitable and ethical approach to the use of private and secure patient information for quality, cost, access, and public health reasons.

• **Provide Facilitation**
Ensure a uniform approach to HIE in Kansas through the promotion of common technical guidelines. The technical guidelines and standards should be based on nationally recommended HIT and HIE standards. Address issues of redundancy or overlap between more than one HIE serving a similar geographic population. Identify intra and interstate interoperability issues. Leverage and consider opportunities to leverage existing infrastructure resources. Assist state agencies and collaborate with adjoining states, particularly Missouri, in promoting the use of health information for patients receiving care across state borders.

• **Provide Policy Recommendations to Policymakers and Key Decision Makers**
Proactively identify needed policy changes to promote health information exchange and ensure the value of HIE is realized. Early efforts should address privacy and security issues and recommendations made by the Kansas HISPC project team.

RECOMMENDATION 2
Create a Public/Private Coordinating Entity to Advance HIE over the Long Term

Create a statewide public/private Coordinating Entity that would assume the responsibilities and duties of the Leadership Group over the long term. The statewide entity should foster the adoption of HIT and interoperable HIE in a way that promotes the public good and supports regional HIEs in Kansas. It should also address the intra and inter-state interoperability issues identified by the Leadership Group. The Coordinating Entity should continue the initial work of the Leadership Group by serving as a resource and providing facilitation and policy recommendations to regional HIEs in the state, as well as encourage and enable collaboration and cooperation. This would include working with the State of Kansas to coordinate the HIT related actions and plans of all state agencies and programs.

THE LEGAL FORM AND THE DUTIES OF THE STATEWIDE COORDINATING ENTITY

- **Consider a Not-for-Profit Model**
  A 501 (c) (3) not-for-profit model should be considered as the most appropriate type of public/private entity to assume the aforementioned quasi-governmental role. This entity must also be anointed with sufficient authority to allow it to proactively promote HIT and HIE in the state of Kansas.

- **Coordinating Entity Membership**
  The recommended 501 (c) (3) entity would be governed by both governmental and non-governmental stakeholder representatives. The non-governmental Directors should dominate the Board and be nominated by stakeholders representing regional HIE initiatives across the state, as well as health care consumers. The governmental Directors would likely be designated by position or title.

- **Ensure a Standardized Approach to HIE**
  In addition to continuing the Leadership Group's initial work on developing common technical guidelines (based on national HIT and HIE standards), the Coordinating Entity should finalize and adopt the HIE Guiding Principles developed by the Governance Workgroup (see Appendix F) and negotiate standards for interoperability between regional HIEs. Additionally, the Coordinating Entity should seek to develop quantifiable metrics which measure the impact of HIE on the delivery system and promote public accountability by communicating these metrics, as well as establishing an acceptable level of accountability to the publics that HIE efforts serve. The coordinating entity shall also evelop the key components of a marketing and communications plan that emphasizes the public good of HIT and HIE.

- **Evaluate the Potential Role of HIE Certification**
  To ensure consistency and adherence to a core set of HIE expectations and guidelines the Coordinating Entity should consider the establishment of a certification process for HIE. The certification should establish a balance between promoting the development of HIE and not instituting burdensome requirements, while also seeking some level of commonality, consistency, and interoperability among Kansas HIE initiatives. This commonality, consistency, and interoperability could significantly improve effectiveness of HIE in Kansas.

- **Define regions for HIE**
  One effective way to define regions for HIE is to perform a Medical Trading Area (MTA) analysis. A Medical Trading Area is defined as an area where a population receives the majority of its health care. The area typically includes groups of physicians, hospitals, laboratories, mental health providers, and other health care providers that offer health care services.

This analysis can begin by generating simple charts, graphs, and maps. Those from discharge analysis and other tools should be used, such as the information for Kansas in the Dartmouth Atlas. Many of the areas will resemble the federal government's definition of metropolitan statistical areas but will expand beyond those areas where there is an established pattern of health care services provided to patients outside the metropolitan area or where there is a significant non-metropolitan grouping not yet defined as a metropolitan area.

Other systems or networks currently holding or exchanging information may also define regions and should be explored.

2.1 SERVE AS A RESOURCE CENTER FOR HIE IN KANSAS

Based on feedback from stakeholders and challenges experienced by other HIE efforts across the United States, a clear need exists to identify and provide specific resources to support and facilitate the adoption of HIT and promote HIE across the state. It is recommended that a Resource Center be established with full-time staff, as a single coordination point for Kansas HIE efforts. The Resource Center can be developed within or subcontracted by the statewide public/private Coordinating Entity and would perform the following scope of responsibilities:

- Work with the Public/Private Coordinating Entity to align public and private sector actions to innovate and transform health care through HIE

- Receive funds from public and private entities, apply for both governmental grants and non-governmental financial support to provide the following functions: development and planning of local HIE initiatives; establishment of baseline metrics to measure the impact of HIE on quality, safety, costs and satisfaction; and provide grants to implement local HIEs and potentially statewide infrastructure related efforts

- Work with the public/private Coordinating Entity to finalize HIE Guidelines (see Appendix E) and develop tools, including best practices to assist with forming a Regional Health Information Organization (RHIO), which is an organizational entity that administers and operates an HIE in a geographic area

- Provide or engage technical assistance and subject matter expertise for HIE efforts

- Assist with legal and regulatory issues

- Coordinate and track activities of HIE efforts at the local, regional and national level

- Provide a repository of lessons learned from HIE efforts across the state and the region

- Maintain momentum built during 2005 and 2006

A detailed overview of the Resource Center is provided in Appendix I.
See additional information on defining the regions, or Medical Trading Areas, as included in Appendix H, Kansas' Definitions of Regions.

RECOMMENDATION 3
Provide Consumer and Stakeholder Education

The provider community, the health care industry, medical consumers, policy makers, and employers must be educated on HIT/HIE and the benefits of HIE. These efforts will be key to driving policy change, sustainable financing mechanisms, and gaining public acceptance of HIT/HIE systems. All parties participating in HIE development must communicate the need for end-user utility to system designers and administrators. Successful demonstration projects with well-documented outcomes will lead to greater measurable success for HIE projects throughout Kansas.

3.1 PATIENT/CONSUMER AND PROVIDER EDUCATION

Educate both providers and patients about HIT and HIE and their benefits. Emphasize "learning communities" that engage diverse stakeholders in "public listening" exercises rather than "public hearings." Foster broader participation by conducting these through workshops on the web or in person with open access for all. An ideal start is to begin with graduating health care professionals who are trained using HIT. Partnerships with Centers of Excellence in training health care professionals like the University of Kansas Center for Healthcare Informatics should be explored and leveraged for the benefit of the public.
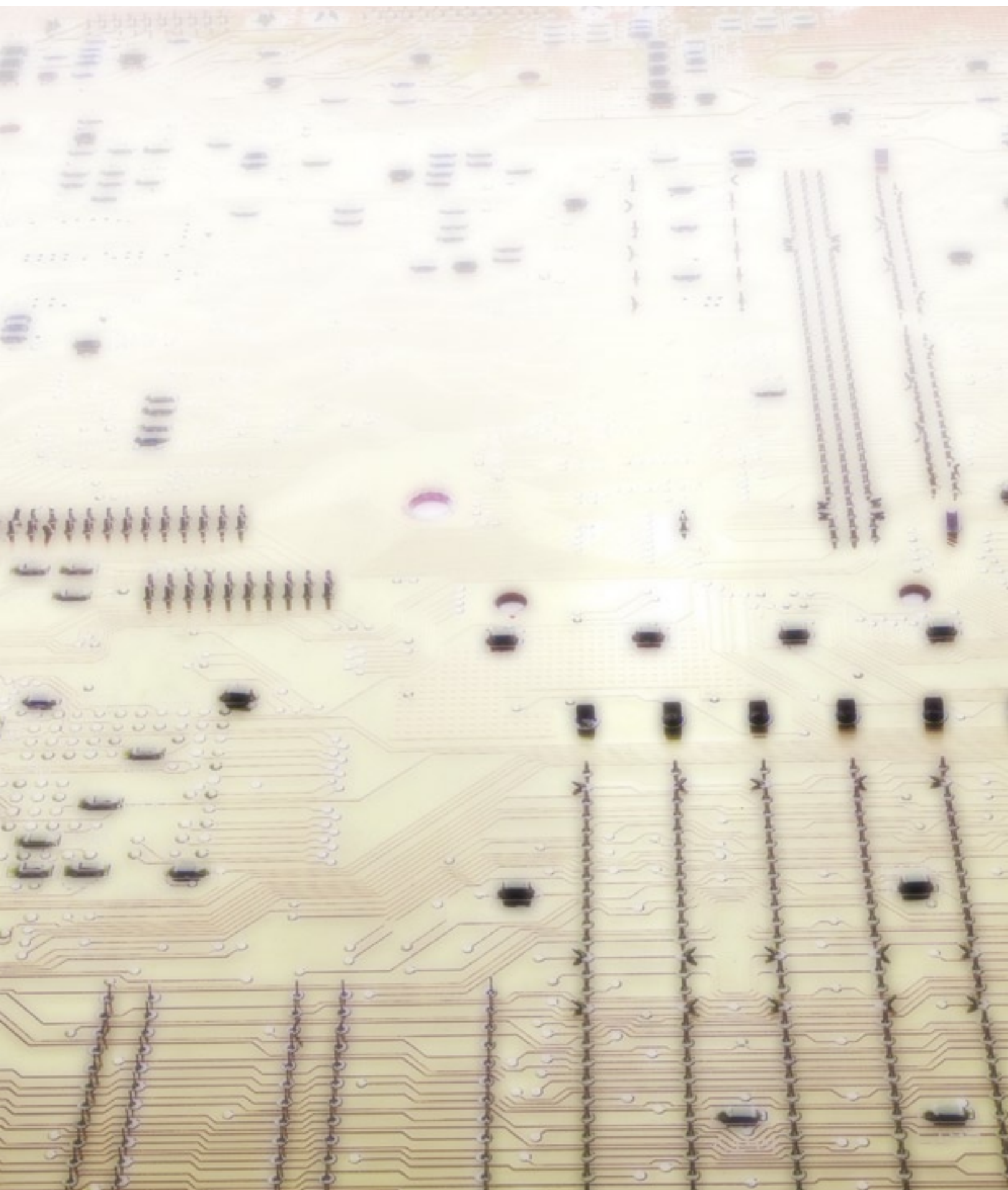
Kansas has begun this process through a number of initiatives already underway. Employers, managers of community health records, private insurers, and the state Medicaid program have begun conversations with consumers to strengthen understanding, trust, and support of developing electronic health records projects.

3.2 USE COMMON HIT AND HIE TERMINOLOGY

Speaking a common language, both colloquially (HIE, HIT, et al) and technically (HL7, PHIN, etc.) is key to developing consensus on standards and a shared understanding of the capabilities and limitations of HIE. A priority for the next phase of HIE infrastructure development should be the development or use of a dictionary of standard terminology to be used throughout the effort. This should be incorporated into an education/communication plan. Where common terminology already exists through national or regional efforts, it should become the accepted standard.

3.3 BUILD UPON PHYSICIAN LEADERSHIP AROUND HIE ACROSS THE STATE OF KANSAS

Due to the rural nature of our state, a large portion of physician practices in Kansas are small practices. Utilization of health care remains, in large part, driven by physicians; and they will drive the system as a whole towards HIE and HIT and become active leaders in the effort when they see distinct benefits from it. Physician leadership can be promoted through the use of workshops and toolkits explaining HIE; research and practical models documenting a positive "return on investment" (improved quality of care and financials) encouraging physicians to champion the cause of HIE; and enlisting continuing close support from physician provider organizations such as the Kansas Medical Society, Kansas Association of Osteopathic Medicine, and the respective Kansas Chapters of the Academy of Family Physicians and Academy of Pediatricians.

RECOMMENDATION 4
Leverage Existing Resources

In addition to the resources mentioned below, the technical assessment (see Appendix C for Technical Assessment) conducted by the Technical Workgroup can be utilized for future HIE planning and development.

4.1

LEVERAGE EXISTING INFRASTRUCTURE IN KANSAS

As a largely rural state, Kansas faces geographic challenges of access to health care and HIT. Collaboration by more than 80 Critical Access Hospitals and their community hospital partners throughout the state has resulted in a large number of relationships and common referral patterns that suggest an underlying order to patient flow and potential record exchange (Medical Trading Areas).

The Kan-Ed network allows hospitals to connect to a private, statewide network, but hospitals have been slow to join the network, and physician clinics and other health care providers are statutorily prohibited from connecting to Kan-Ed. Facilitating greater hospital participation and enabling additional health care providers, especially in rural areas, to connect to the Kan-Ed network would likely begin to close the current HIT gap and accelerate the implementation of HIE.

The creation and maintenance of networks and databases for public health, bioterrorism, and biosurveillance are significant activities. Where appropriate, increased coordination of investments by the State of Kansas in areas directly and tangentially related to HIT and HIE is necessary to streamline the system and minimize duplication.

4.2

LEVERAGE EXISTING HEALTH INFORMATION EXCHANGES IN KANSAS

Infrastructure development should look to existing HIE efforts for opportunities as well as consider the impact of further development. Current HIE projects in Kansas include the Kansas City employer-sponsored Healthe MidAmerica, Kansas City Regional Electronic Exchange (KCREE), KC Care Links, WebIZ (the statewide immunization registry developed by the Kansas Department of Health and Environment), Community Health Center Health Choice Project (developed by the Kansas Association for the Medically Underserved), and the Medicaid Community Health Record Pilot in Sedgwick County. In addition, with more than 60 sites across the state, the Kansas University Center for TeleMedicine and TeleHealth is dedicated to improving health across Kansas through HIT. These efforts could serve as building blocks for further exchange or other regional efforts, provide important lessons learned, and be a source of shared information that can benefit all HIE efforts, such as legal analysis of privacy and security issues.

4.3 USE EXISTING DATA SOURCES

The leadership provided by the State of Kansas can be an important motivator to ensure that these existing projects collaborate and address high priority functionality.

The State already holds several types of medical claims-based data, including the Kansas Health Insurance Information System (KHIIS), the Kansas Hospital Discharge Database, Medicaid, and State Employee Health Plan data. Diagnoses, procedures, medication histories, labs, and immunizations can be extracted from these existing databases, as with the Medicaid Community Health Record pilot, and serve as a model for an integrated HIE system. Noting that the State already holds this data can ease acquisition issues inherent in initial stages of HIE development. Complimentary resources such as claims data to support pilot opportunities will become available from private sector sources.

Additionally, existing public health databases such as Maternal and Child Health; Women, Infant, and Children's Nutritional Program; and Kansas Immunization Registry should be maximized without duplication of databases or infrastructure. Coordination of these existing data sources will improve the potential to achieve the Clinical Workgroup's recommendations for clinical outcomes from HIE while reducing the burden upon the originators of this data.

4.4   COORDINATE STATE AGENCY USE OF HIE

State agencies such as the Kansas Health Policy Authority, Kansas Department of Health and Environment, Kansas Department of Corrections, and others should coordinate on policy development, privacy and security issues, and infrastructure development for the exchange of health information to reduce duplication and ensure the highest levels of data integrity, privacy, and security.

The State of Kansas should leverage federal funding available to support HIT and HIE. Opportunities to leverage the marketplace and drive the adoption of HIT/HIE through state health care purchasing through Medicaid, the State Children's Health Insurance Program, and the State Employee Health Plan should be maximized. Coordination with CMS on statewide HIE initiatives should be considered as these programs have considerable overlap in efforts that address disease management and chronic care coordination, dual eligible patients, and early efforts on medical homes and home based clinical event monitoring.

4.5   LOOK TO CURRENT KANSAS MODELS FOR PRECEDENT REGARDING DATA SUBMISSION TO HEALTH CARE DATABASES AND THE SHARING OF HEALTH INFORMATION

Claims databases are often considered to be proprietary and may be excluded from an HIE effort unless required to do so. In Kansas, precedent exists for the legislative requirement of claims databases to submit information to the State (KHIIS) or for the voluntary submission of claims data to state agencies (the Kansas Database, held by KHPA).

RECOMMENDATION 5
Demonstrate the Impact of HIE and Foster Incremental Change

5.1   **DEMONSTRATE VALUE TO PROVIDERS THROUGH BOTH QUALITY AND FINANCIAL MEASURES**

Providers will desire to use HIE systems, and demand that electronic systems be compatible with larger HIEs when improved quality of care, efficiency, and cost-effectiveness are demonstrated. The State can help demonstrate the value of HIT/HIE through the development and promotion of pilot projects like the Medicaid Community Health Record pilot in Sedgwick County or others that can demonstrate a positive impact on quality, safety, and workflow.

5.2   **DEMONSTRATE VALUE TO PATIENTS AND CONSUMERS**

In addition to the provision of education around HIT/HIE as mentioned above, information regarding pilot projects and other demonstrations should be made available to the public so that patients and consumers can know and understand the value of HIE and how it will benefit them. Efforts should be made to include patients and consumers in such demonstration projects.

5.3   **DEMONSTRATE VALUE TO EMPLOYERS AND PAYERS**

Employers are increasingly focusing on health care costs and the impact on their overall productivity and profitability. The Kansas City based Healthe Mid-America is an example of employers responding to health care costs proactively and using technology to coordinate care and drive efficiencies. Likewise the Medicaid Community Health Record pilot beginning in Sedgwick county is a response to the desire to deliver value through HIE. Large employers and payers can catalyze the adoption of HIT and need to be fully engaged in HIT/HIE discussions and understand the impact on health care quality, efficiency, and cost.

5.4   **SUPPORT INCREMENTAL CHANGE**

Successful models for HIE have been incremental. For example, a Cincinnati model started with fax servers delivering laboratory results to providers and over time evolved into a fully electronic exchange of laboratory orders and results. Implementation of HIE in Kansas should be incremental, building upon the technical capabilities of the majority of participants within a Medical Training Area and leveraging existing initiatives or resources. This type of approach will ease transition to a fully electronic exchange, minimize duplication and chance for error brought on by radical systems and process changes, be more cost-effective, and allow the value of HIE to be demonstrated, thereby facilitating the development of a financial model based on the entities which receive maximum benefit.

5.5 **EVALUATE THE IMPACT OF HIE ON WORKFLOW AND MAKE THIS INFORMATION AVAILABLE TO CLINICIANS**

Regional HIE systems throughout Kansas will not be used unless their use results in workflow efficiencies for clinicians. As HIEs are developed, the impact on workflow and business practice models and, ultimately, the financial impact of all potential end-users must be analyzed and measured. Special attention should be paid to the workflow impact on physician practices, especially small practices that are less able to absorb increased resource requirements. HIE systems that are not interoperable or require multiple systems and processes to access can actually end up costing physician practices. The level of resource requirement and the impact on quality and cost need to be carefully measured, shared with providers, and efforts must be made to maximize workflow efficiencies.

The American Academy of Family Physicians (AAFP) in Leawood, Kansas provides a local resource for enabling clinicians' use of HIT. Continued coordination with AAFP and other professional groups will provide Kansas clinicians an advantage in adopting and implementing HIT and HIE.

5.6 **MEASURE THE FINANCIAL IMPACT OF HIE ON CLINICAL PRACTICE AND THE SUSTAINABILITY OF HIE THROUGH DEMONSTRATION PROJECTS**

While the process of educating the health care community regarding HIE has been discussed, special focus should be placed on financial and quality of care measures in presenting HIE material to heath care providers. The impact of HIT/HIE implementation on cash flow and financial stability for a clinical practice, including opportunity costs, should be measured, and where possible, targeted incentives for providers should be considered to promote HIE.

5.7 DETERMINE IF LEGISLATIVE OR REGULATORY CHANGES ARE NEEDED
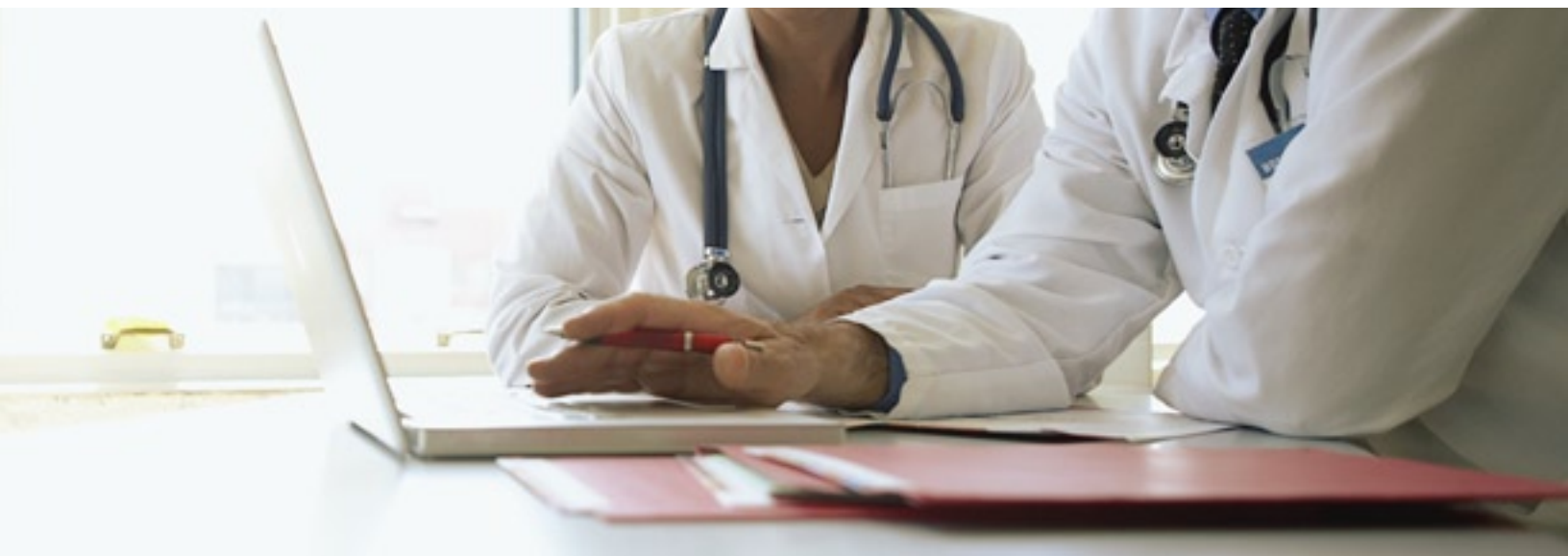
Proprietary business models often feature deliberate "closeting" of data, isolating mutually exclusive data. Consequently, there may be a lack of incentives to companies to abandon this model in favor of a more open and interactive format. It should be determined if legislation enabling HIE is required.

Specifically regarding privacy and security, current laws and regulations should be reviewed to determine necessary technical corrections to reflect the technology available and enable HIE. This review has been initiated under the HISPC subcontract.

5.8 ENSURE THAT KANSAS' HIE SYSTEMS REMAIN "OPEN"

Regional HIE systems in Kansas should be designed to be "open" to facilitate integration with other unrelated systems. Stakeholders should aggressively promote interoperability standards and flexibility within these standards to reflect changes in technology and use. The State of Kansas and developing HIEs should utilize their leverage to encourage vendors in the state to adopt more open designs. The Coordinating Entity can encourage this openness by making it a condition for future support from the Resource Center and available funding. This condition may become a component of Certification outlined under Recommendation 2.

5.9   REQUIRE VENDOR CONTRACTS TO PROVIDE STANDARD UNIVERSAL INTERFACE SOFTWARE AND TO COMPLY WITH NATIONAL DATA STANDARDS

Once national technical standards are established, the standards must be disseminated to local providers and health care communities. Model contracts and work agreements describing these agreed-upon standards should be circulated to health care providers and purchasers for use in their own procurement of electronic health records or services. Busy providers are then freed from the costly and labor-intensive task of defining technical parameters for the purchase of individual EHRs and interfaces, and can drive market change by demanding interoperability.

5.10   TECHNICAL CONSIDERATIONS FOR REGIONAL HIES

The Technical Workgroup identified several technical issues that regional HIEs will need to consider when developing an exchange. It is essential to contemplate these issues when building a technical framework for HIE.

- Begin to establish the mechanism to create a master patient/person index and the matching criteria.

- Create and maintain a patient directory with opt-in/opt-out selection.

- Create and maintain a central directory of providers.

- Ensure adequate IT support is available to health care providers utilizing HIT/HIE.

RECOMMENDATION 6
Address Privacy and Security Barriers

The Health Information Security and Privacy Collaborative (HISPC), as mentioned earlier, assessed variations in business practices and policies relating to health information exchange and developed solutions to barriers to HIE. Their recommendations centered on the protection of individuals' private health information while enabling interoperable health information exchange, and focused on nine specific domains. The HISPC Workgroups' recommendations are listed below.

PATIENT-FOCUSED SOLUTIONS

• Patient education -- i.e. information about one's rights; preparation for granting of informed consent; and, acquisition of technical skills to navigate and interpret stored information;

• Patient identification, access to one's own information, and the ability to edit some portion thereof;

• Patient control over permitted conditions for data disclosure: how much information, to whom, for what purpose, for how long – i.e., patients' control over the rules;

• Patient notification, accounting, and audit of prospective and retrospective data uses and disclosures;

• Patient consent, denial or revocation of consent for specific instances of information use and disclosure – i.e., patients' responses to specific authorization requests— as well as those of medical power of attorney and other personal representatives.

The state faces several vexing concerns. How does providers' gradual conversion from paper to electronic record-keeping systems change the meaning of privacy and security requirements and expectations? Will standards be set by the market, by regulation, or by both? How can private citizens participate in setting the ground-rules for such solutions, particularly those that are market-based?

BUSINESS OPERATIONS-FOCUSED SOLUTION STRATEGIES

• Require a multi-level (at least 2 factor) process for authentication of users of protected health information (PHI).

• Establish varying levels of access to PHI based on user roles.

• Institute best practices among techniques for assigning patient and provider IDs.

• Educate stakeholders on baseline expectations for network level security.

• Establish complete, auditable, and reversible revision histories for electronic health records.

• Conduct periodic external audits of information access logs as well as tests of system "hardness" against attempted breaches.

• Establish administrative and physical security safeguards that meet or exceed the HIPAA security standard. Enforce encryption of PHI.

LEGALLY-FOCUSED SOLUTION STRATEGIES

Most state privacy laws and regulations predate HIPAA and simply do not contemplate widespread electronic data storage and interchange. The Legal Working Group of the Kansas HISPC felt that state privacy laws and regulations should be reviewed and amended to comply with HIPAA as the minimum standard for privacy restrictions. (HIPAA does not preempt state laws whose provisions are more stringent than the federal law.) Two possible approaches were discussed: (1) a comprehensive review of information privacy provisions in Kansas statutes and administrative regulations, which would be a considerable undertaking, but might produce the highest resulting level of consistency; or (2) a more incremental approach, dealing only with those areas of the law necessary to enable specific health information exchange applications as they arise, which might be more palatable or feasible.

Ultimately, the Legal Working Group recommended that the LWG, or some similar group, be tasked to undertake (1) the development of a consistent and comprehensive statewide interpretation of HIPAA and its interplay with state laws and regulations; (2) the identification of state laws and regulations needing revision to bring them into compliance with HIPAA for the purpose of facilitating electronic HIE; (3) lobbying for the creation of safe harbors from federal enforcement of HIPAA violations which would help remove the fear of electronic HIE for providers; and (4) promoting education of providers and consumers about the proper use of HIE. These actions might mitigate the barrier that could arise from citizen uncertainty about rules of HIE and provider uncertainty about the enforcement of HIPAA violations, thereby creating an atmosphere that would promote the potential of electronic HIE.

REGIONALLY-FOCUSED SOLUTION STRATEGIES

Medical trading areas, including both inter- and intra-state, must be taken into account when developing HIEs. Additionally, the challenges associated with exchanging patient health information across state lines must be addressed. Kansas is geographically diverse and one of the most rural states in the country. Kansans who live in frontier counties commonly travel to other states to obtain health care services from the closest concentrations of providers. Similarly, Kansans living in the Kansas City metropolitan area may go to Missouri for services. Just as common, however, is the treatment in Kansas City or Wichita – a regional center possessing numerous specialty hospitals – of residents from other states.

RECOMMENDATION 7
Seek Funding from Multiple Sources

FUNDING OPPORTUNITIES

Once a financial model has been proposed, developing HIEs should seek seed funding from a variety of sources. With many small, private physician practices in Kansas, regional HIEs will need alternative funding to supplement start-up and potentially operational costs. The public/private Coordinating Entity and/or Resource Center can assist with the identification of available funding and/or the provision of grant funds to catalyze HIE. Consideration should be given to the development of an investment fund that can be used to fund innovations in HIE.

Additionally, Federal agencies such as the Department of Health and Human Services, Agency for Healthcare Research and Quality, and Federal Communications Commission have made funds available for different stages of HIE implementation. National organizations like the American Heart Association have expressed an interest in collaborating with initiatives to seek alternative funding sources.
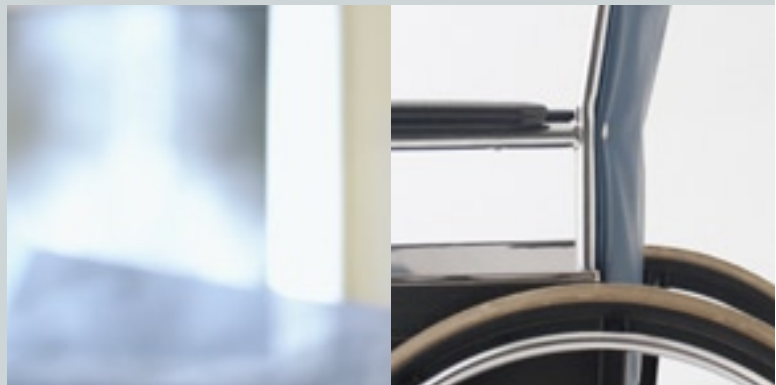
Conclusion

Health information technology and health information exchange have great potential to transform our health care system. However, momentum must be maintained, stakeholders must be educated, existing resources should be leveraged, the impact needs to be demonstrated, funding must be secured, and systems must be created to ensure personal health information is kept private and secure and patients control their own health information. Kansas has a number of public and private HIE initiatives ongoing in the state, as well as a great deal of interest and commitment amongst providers, consumers, and payers, which positions Kansas well to improve health care through health information technology.

Recognizing the value of HIT/HIE and the efforts of the HIT/HIE Policy Initiative, Governor Sebelius completed Recommendation 1, Establish a Leadership Group, by appointing the Health Information Exchange Commission on February 7, 2007. The HIE Commission will work as a public/private collaboration to bring providers and stakeholders together to advance the use of information technology in health care and to advance the recommendations of the Workgroups created through the HIT/HIE Policy Initiative. The HIE Commission should coordinate and focus the state's continuing efforts to improve health care quality and cost effectiveness through HIE.

06

Appendices

APPENDIX A
Steering Committee and Workgroup Membership

STEERING COMMITTEE
Chair: John Moore, former Lt. Governor, State of Kansas
   Tom Bell, Kansas Hospital Association
   Rod Bremby, Kansas Department of Health and Environment
   Helen Connors, KU Center for Healthcare Informatics
   Joe Davison, West Wichita Family Physicians
   Scott Glasrud, University of Kansas Hospital
   Diana Hilburn, Via Christi Health System
   Jan Nicholson, Spirit AeroSystems, Inc.
   Marci Nielsen, Kansas Health Policy Authority
   Howard Rodenberg, Kansas Department of Health and Environment
   Robert St. Peter, Kansas Health Institute
   Bill Wallace, Blue Cross Blue Shield of Kansas, Inc.

CLINICAL WORKGROUP

Chair: Howard Rodenberg, Kansas Department of Health and Environment
Facilitator: Amy Helwig, eHealth Initiative and Foundation
Staff: Gretchen Speer, Kansas Health Policy Authority
Members:

- Judy Bagby, Medicalodges, Inc.
- Jennifer Brull, Prairie Star Family Practice
- Dennis Cooley, Pediatric Associates
- Godfrey Duru, LabCorp
- Joe Davison, West Wichita Family Physicians
- Janis Goedeke, Crawford County Health Department
- Travis Haas, Kansas Association for the Medically Underserved
- Brad Marples, Cotton-O'Neil Clinic/Stormont-Vail HealthCare
- R.W. Meador, Barber County Hospital
- Ken Mishler, Kansas Foundation for Medical Care, Inc.
- Charles Porter, University of Kansas Hospital
- Kristi Schmitt, Finney County Health Department
- Pam Shaw, University of Kansas Medical Center
- Jeanna Short, Susan B. Allen Memorial Hospital
- Jill Sumfest, Preferred Health Systems
- Chris Tilden, Kansas Department of Health and Environment
- Craig Yorke, Kansas Health Policy Authority

TECHNICAL WORKGROUP

Chair: Diana Hilburn, Via Christi Health System
Facilitator: Jay McCutcheon, eHealth Initiative and Foundation
Staff: Gretchen Speer, Kansas Health Policy Authority
Members:

- Ken Abendshien, Midwest Health Systems Data Center
- Bryan Dreiling, State of Kansas
- Dan Elliott, Flint Hills Community Health Center
- Jennifer Findley, Kansas Hospital Association
- Brian Huesers, Kansas Department of Health and Environment
- Jerry Huff, Kan-ed
- Ron Liebman, Kansas Health Institute
- Deborah McDaniel, Kansas Health Information Management Association
- Brenda Olson, Great Plains Health Alliance
- Charles Porter, University of Kansas Hospital
- Scott Rohleder, Hays Medical Center
- Gregory Smith, Kansas State University
- Scott Vondemkamp, Blue Cross Blue Shield of Kansas, Inc.
- Steven Waldren, American Academy of Family Physicians Center for Health IT
- Neil Woerman, Kansas Insurance Department

FINANCE WORKGROUP
Chair: Scott Glasrud, University of Kansas Hospital
Facilitator: Jay McCutcheon, eHealth Initiative
Staff: Chase H. Finnell, Kansas Health Policy Authority
Members:
  Todd Kasitz, Preferred Health Systems, Inc.
  Kathy Fors, Kansas City Independent Physicians Association
  Carolyn Gaughan, Kansas Academy of Family Physicians
  Margo McDonald, AMS Reference Lab
  Rose Mulvany-Henry, Boult, Cummings, Conners & Berry PLC
  Liz Ramsey, Manhattan Radiology LLP
  Chris Swartz, Kansas Health Policy Authority

GOVERNANCE WORKGROUP
Chair: Robert St. Peter, Kansas Health Institute
Facilitator: John K. Evans, eHealth Initiative
Staff: Chase H. Finnell, Kansas Health Policy Authority
Members: Doug Anning, Polsinelli Shalton Welte Suelthaus, PC
  Rod Bremby, Kansas Department of Health and Environment
  Bill Bruning, Mid-America Coalition on Health Care
  Collier Case, Sprint
  Jeff Ellis, Lathrop and Gage, LC
  Jim Hansen, Healthe Mid-America
  Michele Meier, Kansas Medical Clinic
  Billie Hall, Sunflower Foundation
  Melissa Hungerford, Kansas Hospital Association
  Jackie John, Great Plains Health Alliance
  Tom Lenz, Centers for Medicare and Medicaid
  Marci Nielsen, Kansas Health Policy Authority
  Larry Pitman, Kansas Foundation for Medical Care, Inc.
  Vicki, Schmidt, Kansas Senate
  Kevin Sparks, Blue Cross Blue Shield Kansas City
  Gary Caruthers, Kansas Medical Society
  Peter Stern, Kansas Independent Pharmacy Services Corporation
  John Wade, Kansas City Regional Electronic Exchange
  Bill Wallace, Blue Cross Blue Shield Kansas, Inc.
  Bruce Witt, Preferred Health Systems, Inc.