KANSAS RURAL HEALTH PLAN

JUNE 2008

Kansas Rural Health Plan
June 2008

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ACKNOWLEDGEMENTS

The partners of the Kansas Rural Health Options Project would like to thank all of the rural health stakeholders that made the commitment and participated in the development of the Kansas Rural Health Plan.

In addition, we would also like to thank the tremendously talented and dedicated individuals who endeavor to support the rural way of life by delivering critical health care services, and guide rural Kansas residents to health.

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SUMMARY

The Kansas Rural Health Plan (the Plan) was developed for the purposes of having a three year strategic plan for the state's Medicare Rural Hospital Flexibility (Flex) Program: Kansas Rural Health Options Project (KRHOP) and serves as a guide for other rural health stakeholders in the state. Over 90 organizations and 120 individuals participated in the development of the Plan. Using a multi-phased approach, development of the Plan included:

1) Facilitating a discussion of Critical Access Hospital (CAH) Administrators, networks, and other state program stakeholders
2) Interviewing key informants
3) Facilitating four work groups
4) Obtaining rural health planning information as needed and identified by work group members
5) Reviewing and discussing the plan with key informants
6) Presenting the Plan to work groups for review, comments, and changes
7) Presenting the Plan to all planning stakeholders for review, comment, and changes.

The 2008 Kansas Rural Health Plan focuses on the needs of CAHs and local emergency medical services (EMS) within the context of supporting and sustaining CAHs, advancing health information technology, improving quality of care, and integrating EMS into the continuum of health services. To accomplish this, the Kansas Rural Health Plan identifies issues in each of these areas, further defines the key issues as needed, and presents objectives, strategies, and action steps to address the issues. Using this information, the Kansas Rural Health Plan presents a three-year constituent and stakeholder driven road map that offers strategic and program development guidance for the Kansas Rural Health Options Project (KRHOP) and other rural health stakeholders in the state. Although the map has been set, additional steps are needed to further refine the plan and more specifically, identify those objectives and activities that most closely fall under the scope of the KRHOP and should be considered a priority of KRHOP and its Flex Program.

OVERVIEW OF THE KANSAS FLEX PROGRAM

The Medicare Rural Hospital Flexibility Program (Flex Program) was established through the Balanced Budget Act of 1997. It is a national program that includes 45 states, including Kansas. The Flex Program is comprised of two components – grants to assist states in implementing state specific program activities and an operating program that provides cost-based Medicare reimbursement to hospitals that convert to CAH status. The U.S. Department of Health and Human Services (DHHS), Health Resources and Services Administration, Office of Rural Health Policy, administers the federal grant program, while the operating component of the program is administered by the Centers for Medicare and Medicaid Services (CMS), also located within DHHS.

Six Flex Program priority areas have been established for states implementing the program, they are[1]:

- Creating and implementing a state Rural Health Plan
- Designating and supporting CAHs
- Developing rural health networks
- Enhancing and integrating Emergency Medical Services (EMS)
- Improving the quality of health care
- Evaluating Flex Program activities and related outcomes

[1] States participating in the Flex Program are required to address all program areas excep developing rural health networks.

At the state level, the Kansas Department of Health and Environment (KDHE), Office of Local and Rural Health, administers the Flex Program in Kansas. This is accomplished through a partnership with the Kansas Hospital Association, Kansas Board of EMS, and Kansas Medical Society referred to as the Kansas Rural Health Options Project (KRHOP). Over the past ten years, the KRHOP has addressed all of the national Flex Program goals. In the initial program years, funding was directed primarily to CAH conversion and networking activities while in more recent years, funding has been directed primarily to CAH quality and performance improvement activities. There are 83 CAHs in Kansas, the most of all states, and there are no hospitals in Kansas that continue to be eligible for conversion to CAH status.

PURPOSE

The Kansas Rural Health Plan is a three-year constituent and stakeholder driven road map that offers strategic and program development guidance for the Kansas Rural Health Options Project (KRHOP) and other rural health stakeholders in the state.

GOALS AND OBJECTIVES

Goals, objectives, strategies and outcome measures have been developed as part of the rural health planning process. The goals are based on supporting and sustaining CAHs and local EMS, advancing health information technology (HIT) in rural areas, and improving quality of care. Although the plan currently focuses on CAHs, EMS, HIT, and quality improvement, it is intended that additional areas (e.g., health promotion/disease prevention and network development) will be explored as the rural health plan is updated in the future. All of the goals, objectives, and activities are within the scope of KRHOP and its partnership members; however the funding provided by the Flex Program is limiting and therefore, implementation of the plan will require significant support from key stakeholder organizations.

Flow charts reflecting the goals, objectives, strategies, and outcome measures are included as pages 8 - 15.

FACTORS CHALLENGING KANSAS RURAL HEALTH CARE ORGANIZATIONS

HIT Challenges

- Lack of state and national HIT resources and standards
- Lack of training for rural HIT professionals
- Lack of a state HIT office to track, direct, and support HIT development
- Inability to retain specialists licensed and working in border states for telemedicine activities
- HIPAA regulations have not kept pace with changes in health care (e.g., HIT)

Rural/Frontier Social, Demographic, and Geographic Challenges

- Declining population in over half of rural Kansas counties
- Many sparsely populated rural areas, in particular Western Kansas
- Aging population
- Limited resources, in particular human resources, to fill community needs/roles

- High rate of smoking (ranks 25th nationally), adult obesity (ranks 27th nationally), cerebrovascular deaths (ranks 29th nationally), unintentional injury – motor vehicle crashes (ranks 22nd nationally), and limited physical activity (ranks 1st nationally) [2]

Hospital/Healthcare Operations, Management, and Regulation Compliance Challenges

- Difficulty recruiting and retaining health care workers
- On-going financial challenges of some CAHs and local EMS agencies
- Insurance policies and reimbursement have not kept pace with changes in health care
- On-going shift in demand from inpatient to outpatient hospital services
- New Medicare fiscal intermediary in the state (Wisconsin Provider Services)
- High turnover of quality improvement staff working in CAHs
- Need to better demonstrate impact on health outcomes
- Limited resources to address health promotion and disease prevention needs
- Lack of understanding of the needs and requirements of maintaining a local EMS service
- Increasing costs associated with rising fuel prices
- Leadership development in small communities with shrinking population base

UNIQUE STRENGTHS OF THE KANSAS RURAL HEALTH ENVIRONMENT

- Availability of a dedicated statewide network for ITV and telemedicine
- Regular meetings of the rural State Network Council
- Kansas Health Policy Authority engagement in HIT issues
- Network models that are providing significant benefits to participants
- Access to extensive CAH-focused educational opportunities, including those through the Kansas Foundation for Medical Care and the Kansas Hospital Association
- Access to quality improvement tools and expertise
- BlueCross BlueShield recognizing telemedicine for reimbursement
- A rich history as a "pioneer state" in the development of the national Flex Program
- Long tradition of cooperation and sharing among EMS stakeholders
- Unique state level partnering and collaboration

ORGANIZATIONS INVOLVED IN THE DEVELOPMENT OF THE KANSAS RURAL HEALTH PLAN

Seventy-two CAHs and six supporting hospitals and networks contributed to the plan development as did many other organizations, including:

- Kansas Department of Health and Environment, Office of Local and Rural Health
- Kansas Department of Health and Environment, Bureau of Health Facilities
- Kansas Hospital Association
- Kansas Bureau of Emergency Medical Services
- Kansas Trauma Program
- Kansas Foundation for Medical Care
- United States Department of Agriculture, Kansas Office
- Bainbridge Consulting Associates

[2] Statehealthfacts.org, Kaiser Family Foundation, Retrieved April 24, 2008. http://www.statehealthfacts.org/index.jsp

- University of Kansas Medical Center, Center for Telemedicine and Telehealth
- University of Kansas Medical Center, Rural Health Education and Services
- Kansas Hospital Education and Research Foundation
- Kan-Ed
- 6 local EMS agencies
- Midwest Health Systems Data Center

Goal: Support and Sustain CAHs

OBJECTIVES	STRATEGIES	ACTIVITIES	MEASURES
All CAHs are financially viable	Target resources, develop tools, and provide technical assistance to CAHs that fall below the minimum standards for financial and operational indicators	Make available strategic planning resources for CAHs Make available charge master reviews for CAHs Continue to support the work of the Multi-state QI and PI Initiative Support need-specific webinars and training via ITV	All CAHs realize improvements in at least three key financial indicators
All CAHs are planning for the future	Support collaboration, networking, and the sharing of best practices between rural health networks, CAHs, and others.	Continue to support State Network Council (SNC) meetings Support topic specific round table ITV workshops to discuss issues and share best	All CAHs have an active and updated (min. ea 2 yrs.) strategic plan that includes a community health needs assessment component
All CAHs can recruit needed physicians		Further advance the recruitment and retention support by the Kansas Recruitment Center	CAHs' are able to recruit physicians within 18 months of beginning the official recruitment process
All CAHs are contributing to increasing the supply of the health workforce	Support health care provider recruitment resources that best meet the needs of CAHs	Track and present information on the nurse preceptor training program being explored through Kansas Health Education Research Foundation Identify and document best practices in "grow-your-own" health workforce programs/models (including HIT and EMS) and share the models with CAHs and local EMS	All CAHs have grow-your-own workforce programs

Goal: Integrate EMS Into the Continuum of Health Services – Sec 1

OBJECTIVES	STRATEGIES	ACTIVITIES	MEASURES
Payers, state legislators, and local officials improve their understanding of the value, cost, and need for EMS	Educate payers and state and local officials regarding the value and costs of maintaining EMS operations in Kansas	Analyze changes in Kansas laws that reduced write-offs Develop tools to demonstrate impact of various payer models on the various types of EMS services Develop and distribute EMS information/fact sheets/briefings Convene opportunities for payers to discuss reimbursement issues with EMS agencies Support billing and coding training opportunities for local EMS staff Study the impacts of the 35 mile radius rule and identify strategies to meet the 35 mile rule	EMS services report they are receiving more support from county boards, government officials, and payers
Health care providers, the public, students, and others are aware of the need to recruit additional EMS personnel and to retain existing EMS personnel	Raise awareness of the need to recruit and retain additional EMS personnel	Determine where the greatest needs for personnel exist Develop curriculum for elementary, middle, and high school students that highlight EMS careers Develop incentives for local employers to release employees for ambulance runs Work with hospitals and clinics to integrate EMS staff into the hospital staffing model Work with hospitals and clinics to integrate EMS staff into the hospital staffing model Create enhanced EMS Week activities to broaden communities' knowledge about their local EMS service	EMS services with personnel shortages report improved recruiting and retention of EMS personnel

Goal: Intergrate EMS Into the Continuum of Health Services – Sec 2

OBJECTIVES	STRATEGIES	ACTIVITIES	MEASURES
EMS stakeholders have a better understanding of the status of local EMS providers in Kansas	Educate the KBEMS, KRHOP partners, professional EMS Associations, and others regarding the status of local EMS providers in Kansas	Develop a baseline EMS assessment utilizing existing licensure data on all Kansas EMS services	A report describing the current status and needs of local EMS services is compiled
		Work with stakeholders to develop a list of additional information needed to adequately assess the status of local EMS services	
		Use the information from EMS inspection visits to identify the number of ambulance services currently struggling to maintain services in their local communities	A plan to assist EMS agencies in need of support, training, and resources is completed and implemented
EMS Directors have access to the tools and training to effectively and efficiently oversee ambulance service operations	Identify, create, and make available the tools and training to effectively and efficiently oversee ambulance service operations	Support EMS Directors training such as that provided by KEMSA	Independent and hospital-based EMS agency directors are trained in EMS management/performance improvement
		Develop standardized reporting tools that EMS agencies can use to report operations information to stakeholders	
		Identify and develop models that demonstrate opportunities for large EMS agencies to support small EMS agencies with staffing and training	
		Provide stipends to EMS agencies when directors attend Flex supported training	
		Provide grant funding and/or reimburse for rural EMS service director training	
		Convene networking meetings for rural EMS to learn from other EMS agencies in Kansas	

Goal: Intergrate EMS Into the Continuum of Health Services – Sec 3

OBJECTIVES	STRATEGIES	ACTIVITIES	MEASURES
EMS Medical Directors are trained to work with rural EMS agencies	Continue to support EMS Medical Director education and involvement in local EMS	Continue to fund medical director training opportunities KDHE, KBEMS, KMS, and others should be contacted and encouraged to include medical direction sessions as part of statewide meetings Medical students should have exposure to EMS medical direction as part of their medical education	By 2010, 100% of rural EMS Medical Directors are trained as rural EMS Medical Directors
Rural EMS training opportunities are accessible to rural EMS providers and training is not a barrier to recruitment and retention of EMS staff	Identify, develop, and support accessible training opportunities for rural EMS providers	Support mobile training classrooms and/or the use of electronic EMS training tools Work with EMS training sites to make training available outside of weekdays 8am – 5pm Fund EMS provider rural trauma team training (RTTDC and CALS)	By 2010, all rural EMS personnel have access to training electronically By 2010, 100% of rural EMS personnel surveyed report access to training is not an issue
EMS quality improvement (QI) models are developed that guides future QI activities in Kansas	Support health care provider recruitment resources that best meet the needs of CAHs	Engage the EMS regions in sharing best practices in quality Support performance and quality improvement training opportunities for rural EMS Support pilot projects where rural EMS agencies and CAHs work together to improve the quality of pre-hospital care	By 2011, 50% of rural EMS agencies report having a QI plan in place

Goal: Advance Rural Health Information Technology (HIT) – Sec 1

OBJECTIVES	STRATEGIES	ACTIVITIES	MEASURES
All CAHs have an EMR (that supports discreet data relationships) All CAHs' EMRs are capable of being inner, intra, and inter-operable	Provide EMR technical assistance to CAHs	Track the HIT status of CAHs (EMR and telemedicine) Include EMR information and updates as a regular component of SNC meetings Update KHA's EMR tool that documents the costs, benefits, and pitfalls of implementing and maintaining an EMR Develop EMR case studies to document lessons learned and tips in identifying, implementing, and maintaining an EMR Identify, maintain, and make available a list of CAHs, the EMR they are using, and contact information for those wishing to	EMRs are in place and implemented in all CAHs
CAHs are able to meet the specialty care services needs of rural Kansas through telemedicine	Provide telemedicine technical assistance to CAHs	Include telemedicine as an area for education and discussion at SNC meetings Conduct and make available a telemedicine literature review Develop telemedicine case studies Create and distribute a list of all CAHs and the service being provided via telemedicine Support physician-to-physician telemedicine training opportunities	All CAHs have the ability to provide services via telemedicine as needed
HIT standards, reimbursement, licensing and border issues are addressed statewide	Advocate for the establishment of a Kansas HIT Office to address HIT	Work with the Health Policy Authority and other HIT stakeholders to establish an HIT office	State rural health stakeholders recognize a need and advocate for a state HIT Office

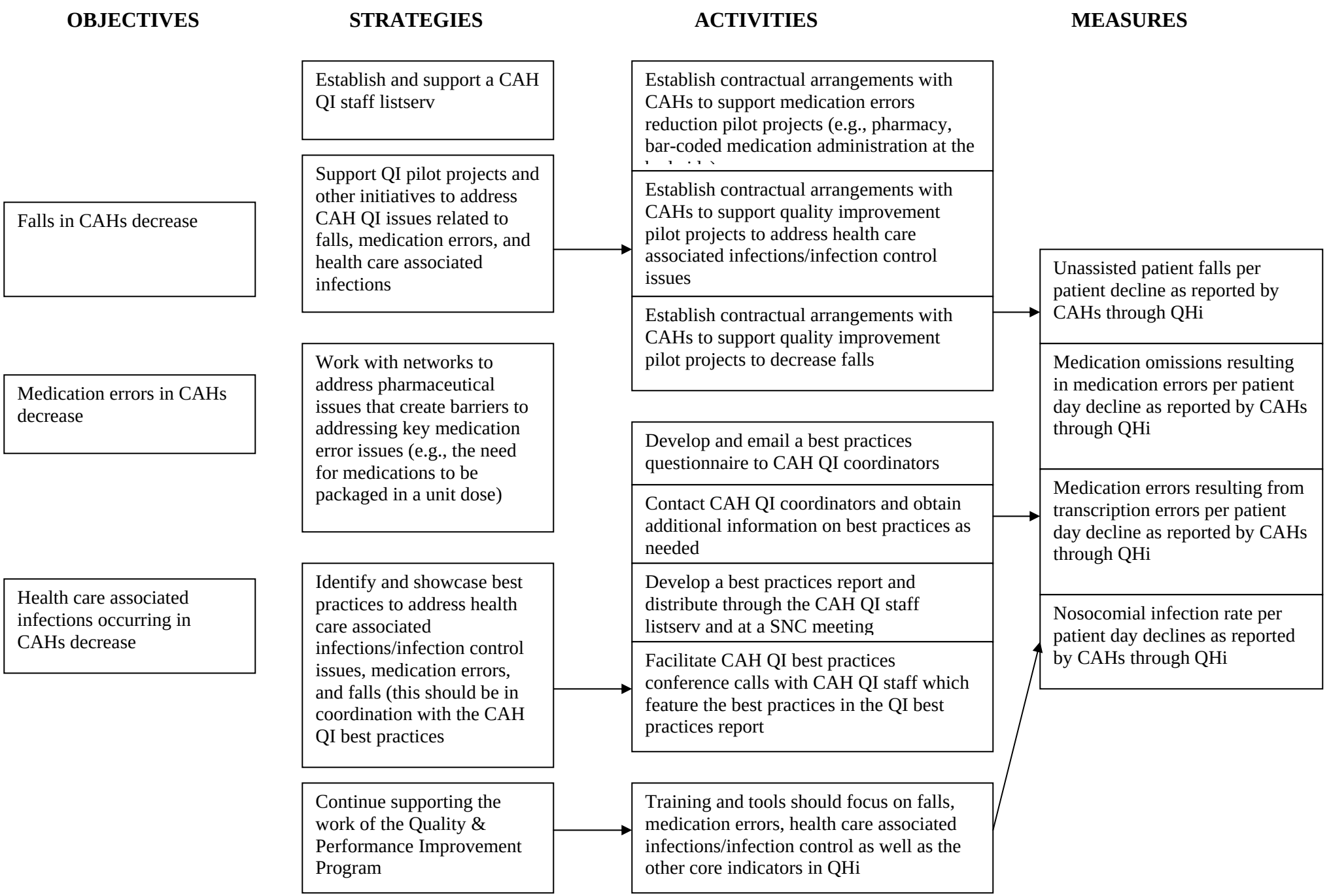
Goal: Advance Rural Health Information Technology (HIT) – Sec 2

OBJECTIVES	STRATEGIES	ACTIVITIES	MEASURES
All CAHs have access to relevant Kansas and national HIT information, technical assistance, and best practices	Develop and Support an HIT area on the KRHOP Website	Post all HIT related information developed by KRHOP on the Website Post HIT training opportunities on the Website	CAHs report being satisfied with the HIT section of the KRHOP Website The KRHOP Website has an annual increase in users
	Establish a pool of CAH HIT staff experts that can be consulted to address CAHs' HIT needs (shared resource)	Establish a CAH HIT staff/super-users listserv as part of the Website Survey CAH HIT staff to identify their areas of expertise and to determine which CAH staff are interested in serving as technical support to other CAHs	The KRHOP HIT listserv has an annual increase in information exchanges CAHs report being "satisfied" or "very satisfied" with the technical support provided by CAH HIT staff
Those working in rural areas are trained in HIT or have access to rural relevant HIT training	Develop web-based HIT certification courses for IT staff, needing clinical education, and clinical staff, needing IT education	Assemble a group of HIT staff working in CAHs to assist with developing the framework for the curriculum Contract with a community college to develop the curriculum and make it available on-line	At least two training programs are available electronically to train clinical and IT staff to work in rural HIT
	Train health care students within an HIT environment	Convene a group of key educational partners to discuss how HIT is incorporated into health care educational training to assure it is rural relevant	CAH administrators increasingly report new hires (clinical and other staff) as having HIT skills
ITV is available and used by all CAHs for education and training purposes	Support health care provider recruitment resources that best meet the needs of CAHs	Support performance and quality improvement training opportunities for rural EMS Support pilot projects where rural EMS agencies and CAHs work together to improve the quality of pre-hospital care	All CAHs report having access to and the tools needed to use ITV At least 3 Flex Program supported training sessions per year are presented via ITV CAHs have at least one staff person that participates in at least one Flex Program

Goal: Improve the Quality of Rural Health Services – Sec 1

OBJECTIVES	STRATEGIES	ACTIVITIES	MEASURES
All CAHs participate in CMS' Hospital Compare	CAHs not reporting to Hospital Compare are provided technical assistance and support	CAHs not participating in Hospital Compare are identified and contacted to identify barriers to participation	All CAHs are reporting on all of the medical condition indicators to Hospital Compare
		CAHs not participating in Hospital Compare are provided technical assistance and resources as needed to support them in submitting data to Hospital Compare	
		Engage in contractual arrangements with CAHs that submit all medical condition data to Hospital Compare for at least one year to provide peer support to other CAHs	
CAHs have the data and tools needed to address/improve quality of care and patient safety	Identify and showcase CAH quality improvement best practices	Develop and email a best practices questionnaire to CAH QI coordinators	All CAHs participating in QHi are submitting data for all core indicators
		Contact and obtain additional information on best practices as needed	
		CAH QI best practices are presented as vignettes in a written document	QHi data audits indicate no data quality issues
	Establish and support a CAH QI listserv	CAH QI best practices are distributed and presented as part of a panel discussion at KRHOP supported events	All CAHs reporting to QHi show improving quality of care for all core indicators in QHi
	Continue supporting the work of the Quality & Performance Improvement Program	Training and tools should focus on falls, medication errors, health care associated infections/infection control as well as the other core indicators in QHi	

Goal: Improve the Quality of Rural Health Services – Sec 2



KANSAS BACKGROUND[3]

Kansas is the 15th largest state with a geographic area of 82,282 square miles and is at the geographic center of the U.S. It had an estimated 2007 population of 2,775,997, ranks 40th nationally in terms of population size, and is ranked 38th nationally in population growth.[4] The state's average population per square mile is 32.9 people compared to the national average of 79.6. Four counties have populations in excess of 100,000 and 57 percent of the population is located in 9 out of the state's 105 counties. There are 36 cities in the state with populations greater than 10,000, the largest being Wichita, Overland Park, Kansas City, Topeka, and Olathe. The population centers are primarily concentrated in the eastern portion of the state. The remainder of the state is characterized by midsize communities surrounded by sparsely populated rural areas: 69 of the 105 counties are designated as rural and frontier.[5] Further, one-third of the frontier counties have a population base of less than three people per square mile. Map 1 displays the geographic population densities in Kansas.

Kansas' population is characterized as: being Caucasian (89.1%) with a growing Hispanic/Latino population (8.6%); being older, more educated, and having a smaller proportion of its population living in poverty as compared to the population nationally; and having strong German (25.9%) ancestry. As displayed in Chart 1, Kansas has been experiencing a rural to urban population shift that is having a significant impact on many of its small rural communities. In particular, rural areas are increasingly elderly. The US Census Bureau reports that from 1990 to 2000, 57 Kansas counties experienced a decline in population for a total population loss of 31,800. Twelve of these counties had population declines of 10 percent or greater.

As stated, 57 counties are experiencing population declines. Fifty-six CAHs (67%) are located in 49 of these counties. In addition, 12 frontier and rural counties have elderly populations of 25 percent or greater.

There is also a rapid growth in Hispanic populations in rural areas in Kansas. The Hispanic population increased by 198 percent from 1980 to 2000. In the rural counties, the increase was more dramatic (330%), with some counties as high as 400 percent. From the 1990 to 2000 census there has been a 166 percent increase in the population with limited English proficiency. The minority populations experience a significant disparity in terms of insurance, income, and educational obtainment, and experience the most dramatic health disparities.[6] The highest percentages of uninsured are also concentrated in rural areas. The state's geography has a direct influence on transportation, health care workforce availability, and other areas of health service delivery.

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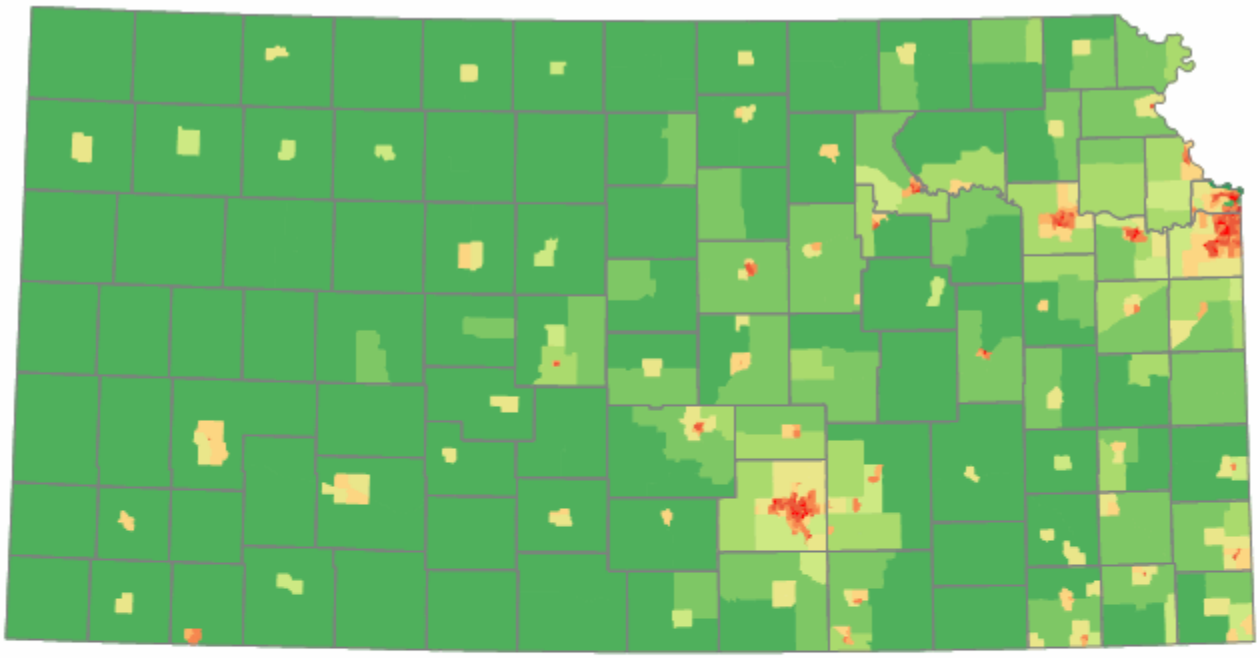
[3] (Sources: Wikipedia, Retrieved April/May 2008, http://en.wikipedia.org/wiki/Kansas and US Census Bureau, Retrieved May 6, 2008, http://quickfacts.census.gov/qfd/states/20000.html)

[4] US Census, [Retrieved on-line May 15, 2008), http://factfinder.census.gov/servlet/SAFFPopulation?_event=Search&_name=&_state=04000US20&_county=&_cityTown=&_zip=&_sse=on&_lang=en&pctxt=fph

[5] Frontier is defined as six or fewer persons per square mile

[6] US Census Bureau and NEED FROM GLORIA

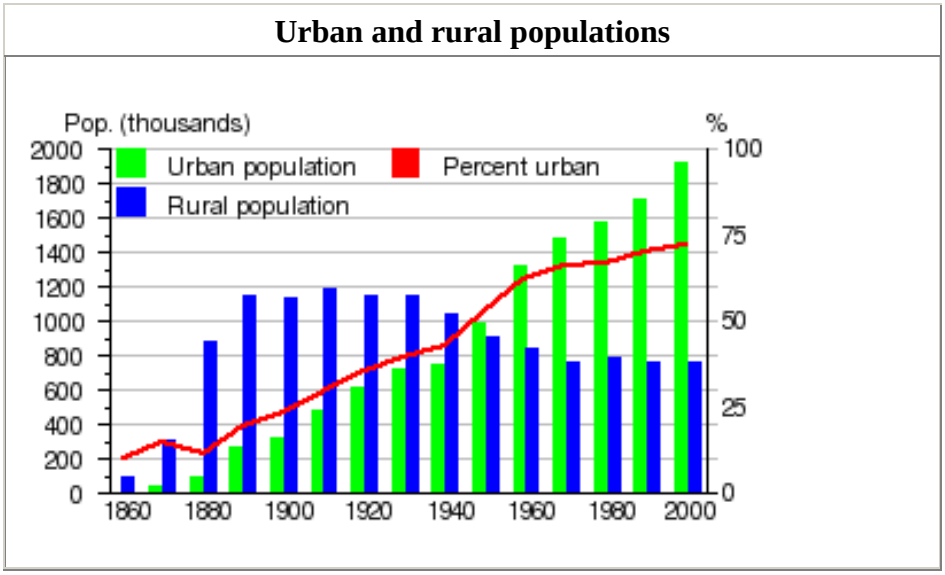
Map 1: Kansas Population Density



Population per sq. mile
<1
1...10
10...25
25...50
50...100
100...250
250...500
500...1000
1000...2500
2500...5000
>5000

Source: U. S. Census Bureau
Census 2000 Summary File 1
population by census tract.

Chart 1: Changes in Kansas Urban and Rural Population: 1860 to 2000



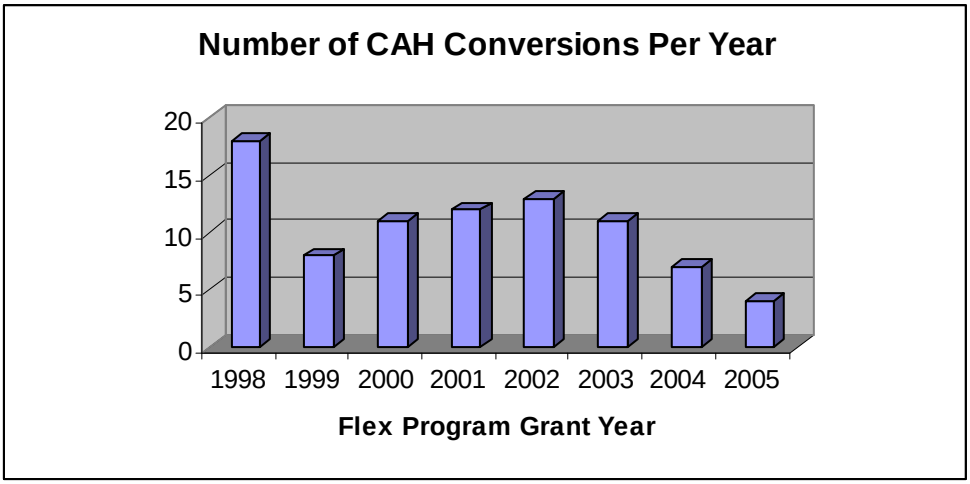
Source: Wikipedia

CRITICAL ACCESS HOSPITALS: THE CURRENT CONTEXT, NEEDS, ISSUES, AND OPPORTUNITIES TO SUPPORT CAHS IN KANSAS

Background

Kansas has 83 CAHs, the largest number of CAHs of all states. This can be compared to the average number of CAHs per state nationally (28.7) and the number of CAHs in states with the largest number of CAHs: 1) Kansas (83), 2) Iowa (81), 3) Texas (73), 4) Minnesota (72), and 5) Nebraska (64).[7] Kansas CAHs are fairly evenly dispersed throughout the state. CAHs in Kansas represent 66 percent of the state's hospitals (125) [8] and 80 percent of the state's rural hospitals (104). The number of CAHs in Kansas will likely remain one of the highest of all states as few states continue to have hospitals eligible to convert to CAH status. Chart 2 displays the number of CAH certifications in Kansas per Flex Program grant year[9] with the largest number of hospitals converting to CAH status in 1998. The large number of "early converters" is unique to Kansas because of its participation in the Essential Access Community Hospital/Rural Primary Care Hospital (EACH/RPCH) pilot program. The EACH/RPCH program preceded the Flex Program and small rural hospitals that were designated as RPCHs under this program were grandfathered into the Flex Program as CAHs. Grisell Memorial Hospital, Ransom, Kansas, was the first hospital to convert to CAH status (December 1, 1993)[10] in Kansas and the 2nd CAH nationally while William Newton Hospital, Winfield, Kansas, was the last hospital to convert to CAH status (December 31, 2005) in Kansas. One CAH in Kansas, Cedar Vale Community Hospital, closed in August 2006.

Chart 2: Number of Kansas CAH Conversions by Flex Program Grant Year



[7] Flex Monitoring Website, December 17, 2007, Retrieved June 6, 2008. [Online]. http://www.flexmonitoring.org/cahlistRA.cgi

[8] 125 acute, this does not include federal/state, psychiatric, or specialty hospitals.

[9] (September 1 – August 31) from 1999 – April 1, 2004. Kansas' EACH/RPCH status in 1999 resulted in hospitals being grand-fathered in as CAHs during 1999.

[10] The hospital's official designation date is 1993 as this is based on a retroactive date based on when the hospital joined the national EACH/RPHC program; however, CAH status was not available until 1998 after authorization of the federal Balanced Budget Act.

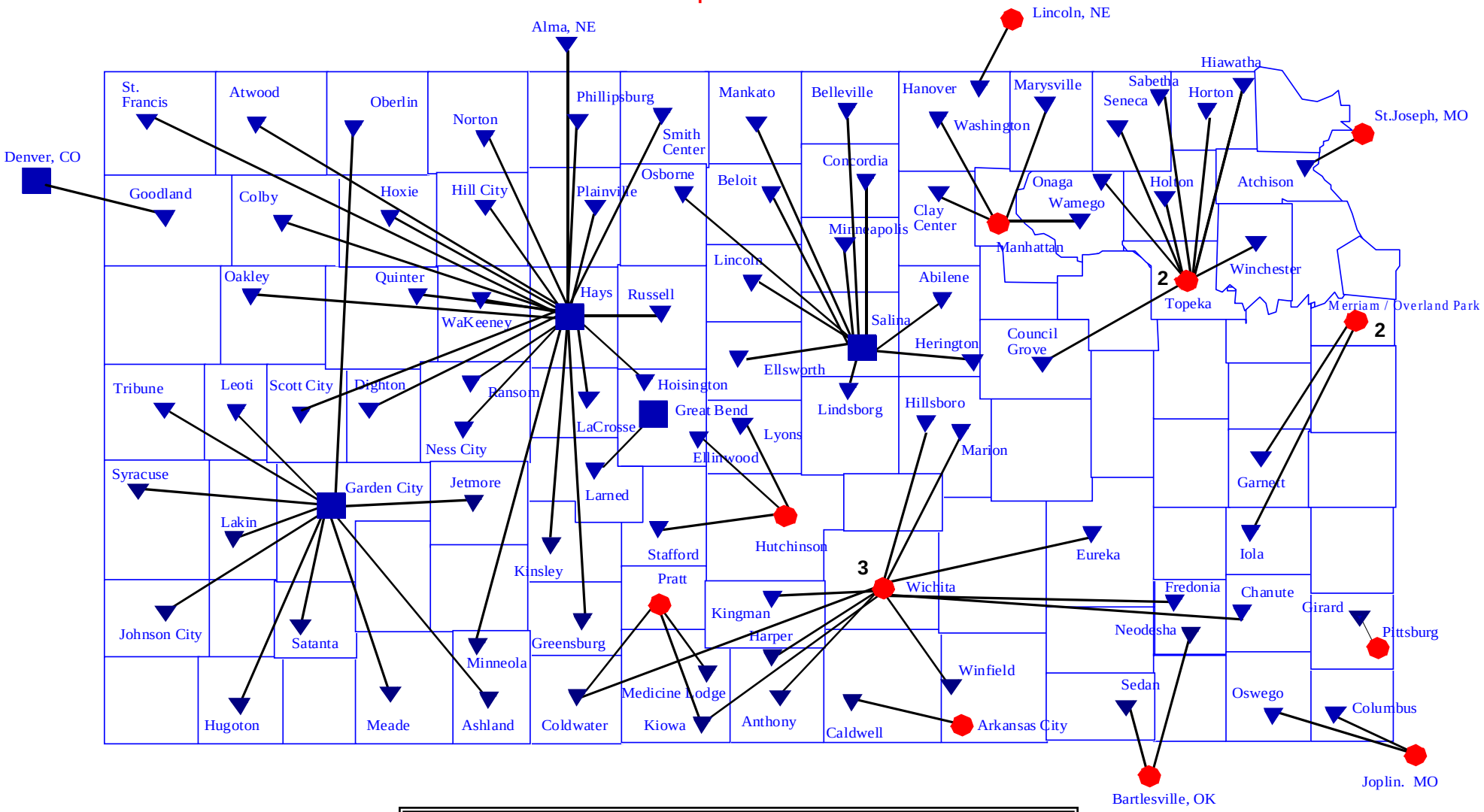
While no two CAHs are identical, there are some features that are considered “characteristic” of many CAHs. For example, reliance on nurse practitioners and physicians assistants, visiting physician specialists (e.g., cardiologists, neurologists, orthopedists that work in the hospital on a weekly or monthly basis), mobile MRI, and the referral and transfer of patients. Where CAHs vary most frequently is service volume (e.g., some CAHs have an acute inpatient average daily censes – ADC - of less than 1 while others’ ADC is over 20) and service mix (e.g., some CAHs are stand-alone hospitals while others have attached nursing homes and some provide home health, hospice, labor and delivery, behavioral health, and/or oncology services and some do not).

Although CAHs are unique, all CAHs in Kansas are networked with other hospitals for the referral and transfer of patients. Some of these networks provide additional support and assistance, such as access to specialists, training, and technical and planning assistance. As shown in the map on the following page, there are 17 such networks in the state with 5 tertiary centers located in bordering states.

KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT
Office of Local & Rural Health

State Designated Rural Health Networks

April 2008



● = Supporting Hospital
■ = Essential Access Community Hospital
▼ = Critical Access Hospital

CAH Needs and Challenges

Critical Access Hospitals and the communities they serve have both unique and shared characteristics. These characteristics help define the strengths and challenges of CAHs and their ability to operate as viable, thriving, high quality organizations. To begin to identify some of theses challenges and to complete the rural health planning process, a review of CAH needs assessment and evaluation information developed through KRHOP was completed. This review determined that workforce recruitment and retention, quality improvement, health information technology, reimbursement, EMS, access to capital, training, CAH utilization, network development, access to health services, the growing number of uninsured and/or underinsured, and performance (in particular financial performance) are significant concerns of CAHs. To develop a better understanding of these issues and needs and to begin to prioritize them, CAH leadership discussed the identified issues and concerns as part of a State Network Council (SNC) Meeting. Taking the findings one step further, information from the SNC meeting discussion was presented to the newly established CAH workgroup. This CAH Workgroup convened over three teleconference calls to: 1) further discuss and refine the list of key issues and needs, in particular those related to workforce recruitment and retention and the financial performance of CAHs, 2) delineate the strengths, challenges, and opportunities related to CAHs, and 3) brainstorm objectives, strategies, and action steps to support CAHs overcoming these issues over the next three years. Below is a list of the primary needs and issues identified by the CAH Workgroup.

Needs and Challenges Impacting CAHs

- Workforce recruitment and retention
- Finances
    - Increasing costs (e.g., workforce, supplies, equipment, health information technology)
    - Increasing number of uninsured and underinsured
    - Lack of knowledge/understanding about optimizing reimbursement and the need for charge master reviews
    - CAH utilization
- Changing demographics
    - Aging population
    - Stagnant or declining service area population
    - Increasing number of uninsured and underinsured and enrolling the uninsured in health assistance programs that exist
- Lack of awareness about services available through KRHOP
- Information technology
    - Infrastructure
    - Telemedicine
    - Electronic health records
    - HIT staff recruitment and training
    - Lack of consensus regarding HIT standards and objectives
- Aging/outdated physical plants
- Access to capital
- Strategic planning
- Quality improvement
- Health services development to meet community needs
- Shift towards outpatient services

Due to the array of issues discussed and as identified above, the CAH Workgroup determined that they would limit their scope of discussion and focus on the greatest concerns of CAHs: healthcare workforce recruitment and retention and hospital performance (in particular financial performance). An overview of CAH finances and workforce is included here. The workgroup also reported HIT as a greatest challenge for CAHs and determined HIT should be a focal point to address as part of the plan; however, since another workgroup was already discussing HIT, the CAH workgroup reviewed, discussed, and contributed to the work of the HIT workgroup.

CAH Finances

In 2007, the KRHOP completed a financial analysis of CAHs in the state.[11] The study evaluated the changes in operations of selected CAHs from their last year as a prospective payment system (PPS) hospital to their most recent reporting year as a CAH. The study focused on three groups of CAHs based on the hospital's conversion date to CAH status. Group 1 included 12 CAHs that converted prior to 1997, Group 2 included 10 CAHs that converted between 1998 and 2003, and Group 3 included 11 CAHs that converted on or after October 1, 2003. This analysis determined that for almost all financial indicators, each group experienced improved financial indicators (averages for each group) when comparing the year before CAH conversion, the year after, and 2005. The researchers went on to report that, "while there are exceptions in each group, the study reflects that financially the CAH Program has been very successful. The average operating margin for each group, while still negative, has improved significantly from the year prior to conversion to 2005 and the average age of plant of the three groups has remained relatively the same or improved."

Complimenting this information is the financial analysis completed by the Flex Monitoring Team as reported in its August 2007, CAH Financial Indicators Report: Summary of Indicator Medians by State.[12] This report includes comparisons of median indicators for CAHs in each state as compared to CAHs nationally. Seventy-four Kansas CAHs were included in the analysis. This report indicates that for most of the 20 indicators, Kansas' median indicators are below CAHs nationally. In particular, key financial indicators of Kansas CAHs, such as: median total margin, cash flow margin, return on equity, days cash on hand, and average age of plant are significantly below those nationally.

In addition, Kansas CAHs and state stakeholders report, service area population declines, increasing costs (in particular workforce, supplies, equipment, and health information technology), changing demographics, and an increases in the number of uninsured and underinsured are contributing heavily to the on-going financial challenges of CAHs. They also report that these issues need to be considered as part of the strategy to improve the financial viability of Kansas CAHs.

CAH/Rural Health Workforce

As the U.S. population increases and the number of older patients with more complex health needs increases, national demand and competition for health care workers may also increase. In Kansas, as the rural population declines and becomes increasingly older and needing more health services, there are fewer health care workers (and working-age population in general) to meet population need. As a

[11] Updated Study of Critical Access Hospitals in Kansas, 2007, retrieved online May 9, 2008, http://krhop.net/documents/2UpdatedStudyofCAH.pdf

[12] CAH Financial Indicators Report: Summary of Indicator Medians by State, Flex Monitoring Team, August 2007, retrieved online May 9, 2008, http://www.flexmonitoring.org/documents/DataSummaryReportNo3_Aug07.pdf

result, Kansas CAHs report that recruitment and retention of health care workers, in particular physicians and nurses, is one of their greatest challenges. This level of concern was documented as part of 2005 and 2007 KRHOP/Flex Program evaluations and was discussed during the fall 2007 SNC council meeting and CAH workgroup teleconference call discussions.

Within the context of workforce and performance, the work group discussed target areas that they would like to focus, including:

- Workforce recruitment and retention
    - Nursing and physicians
- Strategic planning (focusing on health services planning and changing from inpatient services to outpatient services)
- Network development (focusing on those CAHs with limited to no networking)
- Physical plant improvements
- Financial improvements

Using these focus areas as their framework, the workgroup identified four objectives and three strategies that they believe will address CAH performance and workforce issues and advance the goals of the Kansas Flex Program/KRHOP. They also identified measures and in some instances targets for those measures that accompany each objective. The goals, objectives, and measures are below followed by strategies and the associated activities.

GOAL: SUPPORT AND SUSTAIN CAHS
CAH OBJECTIVES:

- All CAHs are financially viable
    - Measure/Target: All CAHs realize improvements in at least three key financial indicators (e.g., total margin, days of cash on hand, days in A/R, or age of physical plant)
- All CAHs can recruit needed physicians
    - Measure/Target: CAHs' are able to recruit physicians within 18 months of beginning the official recruitment process
- All CAHs are contributing to increasing the supply of the health workforce
    - Measure/Target: All CAHs have grow-your-own workforce programs
- All CAHs are planning for the future
    - Measure/Target: All CAHs have an active and updated (e.g., less then three years since publication/update) strategic plan that includes a community health needs assessment component

CAH STRATEGIES/ACTIVITIES TO MEET OBJECTIVES:

- Target resources, develop tools, and provide technical assistance to CAHs that fall below the minimum standards for financial and operational indicators
    - Activity - Make available strategic planning resources for those CAHs that do not have an active strategic plan in place. Consultants with proven small rural/CAH strategic planning experience would be retained, using a group purchasing approach, to provide strategic planning services to CAHs. CAHs with the greatest operational/financial issues and those without a strategic plan would receive priority support. CAHs would match funding.
    - Activity - Identify and secure Charge Master Review experts to provide on-site reviews for CAHs. Consultants with proven small rural/CAH charge master review

experience would be retained, using a group purchasing approach, to provide charge master reviews to CAHs. CAHs with the greatest operational/financial issues and those without a charge master review in the past 5 years would receive priority support. CAHs would match funding.
    - Activity - Continue to support the work of the Multi-state QI and PI Initiative being implemented by Darlene Bainbridge and Associates.
    - Activity – Support need-specific webinars and training via ITV that address identified CAH financial issues (e.g., capital improvement planning, days in A/R)
- Support collaboration, networking, and the sharing of best practices between rural health networks, CAHs, and others.
    - Activity - Continue to support State Network Council (SNC) meetings and use SNC meetings as an opportunity to provide needed information and updates but also to target key issues impacting CAHs and networks. Create more opportunities for networks and CAHs to share best practices, perhaps using a panel discussion approach and table discussions during lunch.
    - Activity – Support topic specific round table ITV workshops to discuss issues and share best practices
- Support health care provider recruitment resources that best meet the needs of CAHs.
    - Activity – Further advance the recruitment and retention support by the Kansas Recruitment Center
        - Establish an advisory group of CAH staff that can review and provide feedback on the recruitment and retention resources available to them through the Kansas Recruitment Center
        - Publicize and support the Kansas Recruitment Center's health careers job fair
        - Use Flex Program funding to support incentives for the Kansas Recruitment Center to successfully recruit health care providers for CAHs
        - Subsidize the costs of creating marketing templates through the Kansas Recruitment Center to showcase CAH communities
    - Activity – Track and present information on the nurse preceptor training program being explored through Kansas Health Education Research Foundation
    - Activity – Identify and document best practices in "grow-your-own" health workforce programs/models (including HIT and EMS) and share these with CAHs and local EMS

EMERGENCY MEDICAL SERVICES (EMS): THE CURRENT CONTEXT, NEEDS, ISSUES, AND OPPORTUNITIES TO SUPPORT EMS IN RURAL KANSAS

Emergency Medical Services (EMS) in rural America represents on of the remaining volunteer professions. While shortages of physicians, nurses and allied health professionals are commonplace in rural areas, there are nearly all paid positions. Contrast that with rural EMTs, the vast majority of whom serve in a volunteer capacity. In many small ambulance services, even the manager and EMS medical director are volunteer positions. Ambulance services in rural areas are commonly under-funded, relying on a combination of billing, tax revenues, and community-based fundraising to stay viable. Governance models vary significantly; services may be based out of a hospital, based out of the fire service, operate as a free-standing government-operated service, or may be a privately-owned company. Citizens are usually unaware of the type of service operating in their local community, or the way in which the service is financed. This situation is seen nationwide, and participants in a series of EMS teleconferences in 2008 confirmed this is often true in Kansas.

Background

As part of the Kansas rural health planning process, a series of workgroups met by teleconference to discuss the status of rural EMS in Kansas, and to delineate strengths, barriers and opportunities for progress in rural pre-hospital care over the next three years. The outcomes of these workgroup discussions are reported below.

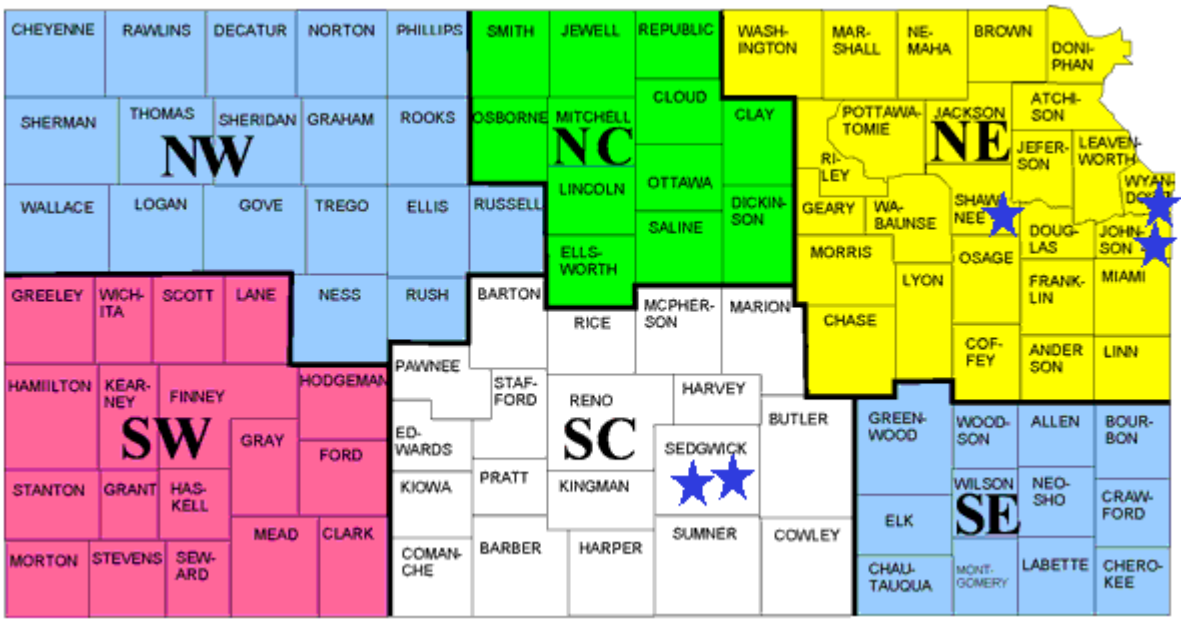
In Kansas, pre-hospital care is offered primarily by the state's 173 licensed ambulance services. These services are regulated by the Kansas Board of Emergency Medical Services (KBEMS). The board also provides support to six EMS regions which are governed by regional councils. A map of the regional councils is included on the following page. The regional councils are non-profit 501(c)(3) organizations. The functions of the Regional Councils are to:

- Support, promote, and assist local EMS agencies and personnel
- Administer the Kansas Board of EMS Certification practical examinations for the state of Kansas
- Conduct annual workshops for Instructor/Coordinators and Training Officers[13]

Much of the activity related to local EMS development takes place within the Regional Councils. In workgroup meetings conducted as part of this planning process, participants report the Regional Councils promote cooperation among regions and EMS services, and are helpful to local EMS development. This is complimented by the Kansas EMS tradition of cooperation and sharing, rather than being focused on competition.

[13] Ibid.

Kansas EMS Regions



In addition to the KBEMS and the Regional Councils, a number of other organizations exist in the state to support EMS operations and personnel. These include the Kansas Emergency Medical Services Association (KEMSA) and the Kansas Emergency Medical Technicians Association (KEMTA, formerly KARA—the Kansas Ambulance and Rescue Association). KEMSA's mission is "to be a single voice for EMS attendants, educators, ambulance services and other interested entities, and to further the continued improvement of emergency medical services throughout Kansas."[14] KEMTA is "a representative group of people who work in many areas of emergency medical service…with a common goal of serving our fellow human beings in time of need" and working to improve the profession by sharing "problems, successes and new ideas". [15]

Kansas has 3 hospitals with Level I trauma center designation, one with Level II center designation, and one with Level III trauma center designation. [16] The map above indicates where trauma designated hospitals are located. EMS work group members report the trauma centers are an asset to medical care statewide, and their presence, "elevates the level of medical care across the state" for trauma victims, provides "educational opportunities, good medical direction, and is available to patients from neighboring states as well", who might be geographically closer to Kansas facilities in the event of a major trauma incident. In addition, several hospitals in Kansas are exploring Level III and IV designation. There is an Advisory Committee on Trauma (ACT) that is working towards the goals of having one designated trauma facility in each region.

[14] KEMSA website, www.kemsa.org

[15] KEMTA website, www.kemta.com/Default.htm

[16] http://www.kstrauma.org/download/CardFBwebsite.pdf

With respect to EMS planning for the state, workgroup participants report Kansas is diverse: big cities, medium sized communities, and small towns in very remote areas. Planning for this diverse environment means that "one approach doesn't necessarily work for everyone". This was noted to be particularly relevant for the most remote areas that often have the least resources at their disposal. Workgroup members state that, "EMS professionals in Kansas are very open to sharing, to contacting other counties, and to working through the Regional Councils" for the maintenance and improvement of EMS.

Finally, workgroup participants recognize their profession is somewhat confusing to elected officials, other health care providers, and the public. Because of the different operating structures of local EMS, it is often not clear whether EMS is a public service, like law enforcement, or a private industry. This leads to confusion about the status of EMS personnel as employees or volunteers, and the extent to which local EMS needs community support in order to operate.

EMS Strengths and Challenges

Despite recognition of varying local needs and issues, work group participants found the following strengths and challenges to be most salient to the EMS sector statewide, particularly rural EMS.

- Strengthened statewide EMS structure
- National registry
    - Availability of test sites
- Insufficient staff to complete QI projects
- Lack of HIT
- Need for additional trauma leadership and training
- Difficulty recruiting and retaining staff
    - More difficulty for small services
    - Unique needs of remote sites
    - Competition with high-population density areas where EMS are paid staff

The workgroup explored the strengths, barriers, and opportunities available to improve emergency medical and trauma services in Kansas. The following are the results of this discussion.

Workgroup participants identified the following strengths and barriers of EMS in Kansas.

Strengths:

- Quality of patient care has been steadily improving
- 35 EMS agencies will be submitting ambulance run data electronically
- Many EMS staff are from the communities they serve and "home grown" EMS squad members tend to have long retention rates
- High level of networking among EMS agencies/members

- Kansas EMS is strong, grassroots, and responsive with a staff driven management approach
    - Local EMS—regional councils—state association
    - KBEMS is not restricted to an advisory role and they accept input from all EMS stakeholders

Challenges

- Lack of/limited use of HIT tools
- No EMS service in Kansas meets the 35 mile requirement for cost-based reimbursement (many towns "were set up in horse and buggy days" when a day's ride was 30 miles)
- Loss of local tax revenue due to declining population, changes in tax laws, property valuations (greatest impact on smaller rural EMS services in the smallest and most agricultural parts of Kansas)
- Many local government officials (county boards, etc.) do not have a full understanding of what a trauma system does, or what is needed to maintain a strong local EMS service
- Staff recruitment and retention
    - Declining population
    - Declining volunteerism
    - Aging workforce
    - Pay differentials between EMS and other medical professionals (who are paid more) results in EMS personnel leaving the profession for positions in other medical settings
- Reimbursement rates do not cover EMS costs
    - Medicare
    - Medicaid
    - Third-party payers
- Increasing costs (fuel, supplies)
- Training times are a barrier particularly for small rural services
    - Large group, mid-week, daytime training that requires time off from work
    - Employers reluctance to release EMS staff for training
    - Coverage issues when staff attend training
- Emphasis on equipment vs. trained staff
- Lack of public/community awareness/recognition of EMS
    - Lack of public awareness regarding the roles and responsibilities of EMS
    - Lack of public knowledge to guide decision making related to EMS

- "No one thinks of you until they need you"
- Lack of self promotion among EMS professionals/services
- HIPAA compliance requirements and inability to share patient/success stories
- Lack of resources and expertise within EMS agencies
- Public/community perception that EMS is the only public safety agency that "sends a bill"

Opportunities:

- Coordination between CAHs and EMS as it relates to workforce shortages, disaster preparedness, and training
- Available tools can provide opportunities for future growth and development
  - Availability of an EMS mobile classroom
  - Current data could be used to analyze operations, assist in planning for future needs and activities, and provide material to educate the public and government entities about EMS
- EMS work environments that include a good work environment, facilities, management, quality, and equipment
- Past work has lead to a solid basis for EMS and trauma system development (e.g., 1998 trauma plan)
- Statewide communications scheduled for completion in 2009
- KBEMS listserv
- Increased use, access to, and educational programs through distance learning/ITV
- Education of local government officials (county boards) regarding EMS
- Statewide data collection can demonstrate the value of rural EMS
- Young people interested in EMS certification
- Integration of EMS providers into hospital systems and other health service areas
- Paid EMS opportunities
- Working across the spectrum of EMS agencies (hospital-bases – approximately one third of EMS agencies in the state - and independent agencies)
- Long term proactive planning vs. short term reactive planning

Using these strengths and challenges as their framework, the workgroup identified seven objectives and eight strategies that they believe will address EMS issues and advance the goals of the Kansas

Flex Program/KRHOP. They also identified measures and in some instances targets for those measures that accompany each objective. The goals, objectives, and measures are below followed by strategies and the associated activities.

GOAL: INTEGRATE EMS INTO THE CONTINUUM OF HEALTH SERVICES

EMS OBJECTIVES:

- Payers (government, private insurance, etc.), state legislators, and local officials (county board members, etc.) improve their understanding of the value, cost, and need for EMS
    - Measure: EMS services reporting they are receiving more support from county boards, government officials, and payers
- Health care providers, the public, students, and others are aware of the need to recruit additional EMS personnel and to retain existing EMS personnel
    - Measure: EMS services with personnel shortages reporting improved recruiting and retention of EMS personnel
- The KBEMS, KRHOP partners, professional EMS Associations, and others have a better understanding of the status (needs, coverage gaps, personnel shortages and training issues, etc.) of local EMS providers in Kansas
    - Measure/Target: A report describing the current status and needs of local EMS services is compiled
    - Measure/Target: A plan to assist EMS agencies in need of support, training, and resources is completed and implemented
- EMS Directors have access to the tools and training to effectively and efficiently oversee ambulance service operations
    - Measure/Target: 75% of independent and 75% of hospital-based EMS agency directors are trained in EMS management/performance improvement by 2010
- EMS Medical Directors are trained to work with rural EMS agencies
    - Measure/Target: 100% of rural EMS Medical Directors are trained as rural EMS Medical Directors by 2010
- Rural EMS training opportunities are accessible to rural EMS providers and training is not a barrier to recruitment and retention of EMS staff
    - Measure/Target: All EMS personnel have access to training electronically by 2010
    - Measure/Target: By 2010, all rural EMS personnel surveyed report access to training is not an issue
- An EMS quality improvement (QI) model is developed that guides future QI activities in Kansas
    - Measure/Target: The QI plan developed depicts current EMS QI activities and QI next steps

EMS STRATEGIES/ACTIVITIES TO MEET OBJECTIVES

STRATEGIES:

- Educate payers (government, private insurance, etc.) and state and local officials regarding the value and costs of maintaining EMS operations in Kansas
    - Analyze changes in Kansas laws that reduced the ability to write-off machinery/equipment, eliminated tax reduction payments, and capped farm real estate

valuation to determine the effect on local revenues used to support EMS and other local community services
    - Because of the multiple organizational structures of Kansas EMS, develop tools to demonstrate impact of various payer models on the various types of EMS services
    - Develop and distribute information/fact sheets/briefings to elected officials (governor, legislators, county commissioners, etc.) explaining payment systems and impacts related to continuing EMS operations
    - Convene opportunities for payers such as private insurance and Medicaid representatives to discuss reimbursement issues with EMS agencies
    - Support billing and coding training opportunities for local (county, city) staff that perform EMS billing
    - Study the impacts of the 35 mile radius rule[17] to determine effects on viability of local EMS operations, including the locations of EMS agencies statewide, studies completed in other state (e.g., a fiscal analysis of an EMS agency in Montana), and strategies to meet the 35 mile rule

- Raise awareness of the need to recruit and retain additional EMS personnel
    - Use information from ambulance inspections and certification card information to determine where the greatest needs for personnel exist
    - Develop curriculum for elementary, middle, and high school students that highlight EMS careers
    - Develop incentives for local employers to release employees for ambulance runs
    - Work with local hospitals and clinics to create paid positions that utilize local EMS skills but still allow release for ambulance service duties
    - Develop public service announcements to assist in EMS recruitment efforts
    - Create enhanced EMS Week activities to broaden communities' knowledge about their local EMS service

- Educate the KBEMS, KRHOP partners, professional EMS Associations, and others regarding the status (needs, coverage gaps, personnel shortages and training issues, etc.) of local EMS providers in Kansas
    - Develop a baseline EMS assessment utilizing existing licensure data on all Kansas EMS services
        - Analyze the current EMS licensure data to use as a starting point in measuring progress and in identifying gaps in information collection.

[17] EMS agencies/ambulances services based in a CAH are eligible for cost-based Medicare reimbursement if the agency is 35 miles or greater from the next nearest ambulance service (this includes free-standing and hospital-based EMS)

        - Perform cross-tabulation analysis of the existing data by region, type of service, to better pinpoint areas for further attention.
    - Work with stakeholders to develop a list of additional information needed to adequately assess the status of local EMS services
        - Based on the results of the analysis in Strategy 1, convene a group of EMS stakeholders to develop additional items needed for EMS assessment.
        - Work with stakeholder to add these items to the next round of EMS licensure data collection.
        - If needed, focus data collection on those services with the greatest "need" based on initial data.
        - Use the data from this "next round" of data collection to develop a plan for addressing EMS gaps and issues.
    - Use the information from EMS inspection visits to identify the number of ambulance services currently struggling to maintain services in their local communities.
        - Use this information to assist those services most in need in obtaining additional service director training, resources, local official (county commissioners, etc.) and public education regarding the needs and operations of local EMS.
        - Develop additional support for site visits to assist struggling services, like those currently done by EMS inspectors, so that there are adequate resources being used to help those services in most dire need of support.

- Identify, create, and make available the tools and training to effectively and efficiently oversee ambulance service operations.
    - Support EMS Directors training such as that provided by KEMSA
    - Develop a standardized monthly report format for use by EMS directors to communicate with local officials regarding EMS operations, costs, billing, "write-offs" or non-collectible bills, service needs, equipment age and replacement schedules, etc. This report should: report the value of volunteer time for the month, express costs in terms of 24x7 coverage (preparedness) rather than "per run" costs to give a more accurate picture of costs of EMS operations, explain the "income-generating capacity" of the local EMS service, provide current accounts receivable and other financial information.
    - Identify and develop models that demonstrate opportunities where large EMS agencies provide as-needed coverage so small local EMS agencies are able to complete joint training and/or train EMS directors. This includes: determining if written mutual aid agreements or other waivers are required for services to provide assistance, determining protocols to use during the coverage period, identifying the optimal way to assist without disrupting local operations
    - Provide stipends (up to $500 per day) to EMS services that provide coverage for local communities while their EMS Director is attending training
    - Provide grant funding and/or reimburse for rural EMS service director training

- Convene meetings that allow EMS Directors to meet with directors from large and small, urban, suburban, and rural services, to network, discuss issues and develop a shared vision for EMS in Kansas

- Identify, develop, and support accessible training opportunities for EMS providers
  - Mobile training classrooms or use of electronic tools (interactive TV, videoconferencing, taped training sessions for off-hours learning by EMS staff, etc.) will be developed to ease the difficulties of getting training while maintaining EMS coverage in the local community.

  Note: Mobile classrooms may be too expensive to move due to fuel costs that ran above $2 per mile several years ago. If training is not face-to-face, other requirements would be met, such as sign-in rosters, course evaluations, and other currently required training/quality assurance elements. Any interactive training infrastructure development should be compatible with systems across the entire state.
  - Work with EMS training sites to identify opportunities to make training available at times other than weekdays 8 a.m. to 5 p.m.
  - Fund EMS provider rural trauma team training (RTTDC and CALS)
- Develop a voice for rural EMS in Kansas.
  - EMS stakeholder will work together to educate state, regional, and local leadership regarding EMS "successes", ongoing services, role in trauma events, costs, needs, and issues.
  - KDHE, the KRHOP partners, and other will include EMS as a health service along the continuum of health care and when reporting the need to recruit and retain health professionals.
  - Activities related to recruitment/retention of health professionals, such as programs in schools, will include EMS as one of the health professional opportunities.
  - Partners such as the Kansas Association of Counties will be included in ongoing discussions regarding current EMS operations and the future of EMS in Kansas, so that County Board members better understand EMS in their communities.
  - The public will be educated regarding Kansas EMS through EMS Service Director outreach activities, news releases to the local media, public service announcements, EMS presence at county fairs, county commissioner support, and EMS Week activities.

- Continue to support EMS Medical Director education and involvement in local EMS.
  - Continue to fund medical director training opportunities.
  - KDHE, KBEMS, KMS, and others should be contacted and encouraged to include medical direction sessions as part of statewide meetings.
  - Medical students should have exposure to EMS medical direction as part of their medical education
- Develop models for EMS QI activities based on the EMS services' current abilities, their history of quality improvement activities, and current QI tools.
  - Engage the EMS regions in sharing best practices in quality

- Promote and demonstrate the importance of QI activities through supporting QI and performance improvement training opportunities for rural EMS agencies
- Support pilot projects where rural EMS agencies and CAHs work together to improve the quality of pre-hospital care

HEALTH INFORMATION TECHNOLOGY (HIT): THE CURRENT CONTEXT, NEEDS, ISSUES, AND OPPORTUNITIES TO SUPPORT HIT IN RURAL KANSAS

As in all states across the U.S., the need for and use of health information technology (HIT) is expanding; rural Kansas is no exception. Within Kansas there are a number of organizations and initiatives that are advancing HIT, examples include:

- Kansas Public Health eXchange (PHIX), a secure web-based communication system for rapid exchange of public health information
- KAN-ED, a statewide internet collaborative established by the Kansas legislature in 2001 to bring broadband capabilities to hospitals and other member institutions
- Kansas Immunization Registry project
- Kansas University Medical Center's Center for Health Care Informatics Simulated E-health Delivery System (SEEDS) project is a collaborative initiative developed to teach nursing and medical school students about HIT and electronic health records (EHRs)
- Private initiatives
    - Kansas City Health Exchange (KCHE)
    - Central Plains Regional Health Care Foundation - Clinics Patient Index
- KU telemedicine program
- Kansas Rural Health Policy Authority and their role in HIT
- Health Networks
- Wichita Community Health Record

(SOURCE: Kansa Health Information Exchange Roadmap Briefing Paper. January 2006. http://www.khpa.ks.gov/QandI/Docs/KSeHIBriefingPaper022006.pdf

The rationale for including HIT in the health care equations is the belief that HIT will improve health care quality, prevent medical errors, reduce health care costs, increase administrative efficiencies, decrease paperwork, and expand access to affordable care. Kansas CAHs and EMS agencies concur with these beliefs and report that HIT should be considered the primary component of the Kansas Rural Health Plan.

Although no national standards and definitions currently exist for HIT, there are some definitions that are considered widely used and accepted by the industry. Definitions for key terms that are widely used as part of the HIT discussion, include: HIT, electronic medical record (EMR), electronic health record (EHR), electronic personal health record (EPHR), intra-operable, inner-operable, and inter-operable. Each of these is described as Appendix A.

As noted above, there are a number of organizations and initiatives that are advancing HIT in Kansas. In particular is Kan-Ed, a key component to a number of the rural health HIT objectives as proposed in this plan. As of the fall 2007, Kan-Ed had 280 members, including 108 hospitals; 43 hospitals were connected to the network.[18] Kan-Ed was created by the Kansas Legislature to expand the collaboration capabilities of schools, higher education, libraries, and hospitals. As stated in Kan-Ed's

[18] *Kan-Ed Annual Report*, Kan-Ed, 2007, [Retrieved on-line May 23, 2008], http://www.kan-ed.org/Archives/AnnualReports/Kan-ed%20Annual%20Report%202007%20Final.pdf

2007 Annual report, Kan-Ed has provided broadband intranet connectivity for Interactive Distance Learning (IDL) and other video conferencing uses (telemedicine, meetings, virtual tours, professional development, training, etc.) and operated a network designed to ensure that all schools, libraries, and hospitals have quality, affordable access to distance learning. Prior to Kan-ed, many organizations had to go through multiple providers to obtain a network connection that would allow IDL. As Kan-ed has extended network access points throughout the state, they have reduced costs to connect to the network and allowed members to connect that previously didn't have access to the network. In addition, Kan-ed provides funding for broadband subsidies to help members pay for high-speed, high-bandwidth connections to Kan-ed and the commercial Internet."[19]

Kan-Ed's Impact
The number of hospitals connected to Kan-Ed has increased from 13 (January 2006) to 44 (November 2007). This has resulted in more hospitals having access to professional development and educational programs offered over the network. An example of hospitals using Kan-Ed is the Pioneer Health Network, a network that includes 16 hospitals located in Southwest Kansas. Pioneer Health Network offers ITV educational programs that serve a variety of audiences, including physicians, nurses, managers/supervisors, human resource directors, facility managers, financial officers, purchasing agents, environmental services, and dietary staff. The programs cover many Continuing Medical Education topics such as Hepatitis C, Overuse Injuries of the Hip and Knee, and Pediatric Oncology, as well as administrative concerns such as working with customers, hiring, and evaluation. Program selection is guided by Education Coordinators from each of Pioneer Health Network's member hospitals who meet on a regular basis to determine the network's training needs. In addition, several hospitals have begun to invite others in their communities to ITV programs in which they might have interest. Since the connection of 15 Pioneer Health Network hospitals in April 2006, there have been 30 educational programs and 13 Pioneer Health Network meetings reaching over 1000 participants.

SOURCE: As taken from the *Kan-Ed Annual Report*, Kan-Ed, 2007, pages 19 – 20, [Retrieved on-line May 23, 2008], http://www.kan-ed.org/Archives/AnnualReports/Kan-ed%20Annual%20Report%202007%20Final.pdf

HIT Planning
As part of the Kansas Rural Health Planning process, rural HIT stakeholders from around the state discussed HIT issues and concerns over four teleconference calls as part of an HIT workgroup. During the conference calls, workgroup members explored current rural HIT issues and needs, delineated the strengths, barriers, and opportunities that exist, identified targeted HIT objectives and brainstormed strategies and activities to achieve these objectives. HIT work group members agree that HIT is a critical component to the success of rural health in Kansas. They also agree that although HIT is a financial burden for most CAHs, HIT is increasingly an important component to hospital operations and as HIT changes, Kansas hospitals and other health care services providers need to keep pace with these changes. Due to the scope and nature of HIT, the discussions of the HIT workgroup focused primarily on those areas that workgroup members consider "top priorities": electronic

[19] *Kan-Ed Annual Report*, Kan-Ed, 2007, [Retrieved on-line May 23, 2008], http://www.kan-ed.org/Archives/AnnualReports/Kan-ed%20Annual%20Report%202007%20Final.pdf

medical records (EMRs), HIT staff, and telemedicine. The outcomes of these workgroup conversations are reflected below, first through an overview of HIT challenges and opportunities followed by objective, strategies, and activities to advance HIT.

HIT Challenges Impacting Access to and Development of Rural HIT

- Telecommunications
- Telemedicine
    - Cost
        - Equipment (initial, on-going maintenance, replacement due to technology changes)
        - Staff training
    - Infrastructure
    - Access to a referring specialist
    - Acceptability
        - Physicians
        - Patients
    - Payment/Reimbursement
        - Medicare
        - Medicaid
        - Health Plans
        - Health insurance has never reimbursed for patient transportation costs, so although telemedicine can create transportation efficiencies, it is not a recognizable savings by insurers
    - Licensing for health care providers working across borders
    - Staff training
    - Reliability in some areas
    - Telepharmacy
        - Electronic signatures
    - Tele-mental health
    - Teleradiology
    - Service feasibility assessments
- Lack of a statewide EMS data repository
- EMS connectivity
- Electronic medical records
    - Developing EMR implementation plans
    - Selecting a vendor
    - HIPAA
    - Lack of inter-operability standards
    - Transition of data from hard copy to electronic
    - Sharing of patient data across providers and organizations

- Patient access to information
    - Within network
    - Outside of network
    - Anywhere
- CAHs have telemedicine and/or ITV equipment but are not using it
- Electronic claims submissions and the lack of statewide standards

- HIT Staff
    - Training and certification
        - IT, clinical, operational/financial, quality improvement, and pharmacy
        - Current needs vs. future needs
    - Position description – administration's knowledge of the role and scope of HIT services
    - Networking
    - Skills of current HIT staff vs. those that will be needed in the future
    - Recruitment and retention

HIT Opportunities

- KU Medical Center and their telemedicine work
- Kan-Ed which offers a dedicated network to ITV and telemedicine, assuring the network is dependable with low traffic
- Organizations working to address HIT issues
    - Kansas Health Policy Authority
    - State of Kansas Chapter of Healthcare Information and Management Systems Society (KHIMSS)
- Blue Cross and Blue Shield of Kansas, Inc. is providing reimbursement for originating site telemedicine services that meet established guidelines, including outpatient claims received starting May 1, 2008 that have a service date on or after April 1, 2008 and telemedicine services that involve a physician specialty that is not otherwise available in the community
- Annual American Telemedicine Association Meeting, Seattle, WA
- HIT courses/certifications at/via local technical and community colleges
- CAHs are primarily working with a limited number of EMR vendors
- Some KS CAHs have successfully implemented part of their EMR
    - Models and experts exist in the field and can serve as resources
        - Processes to transition from paper to paperless
        - Super-Users within hospitals
        - Increasing knowledge of HIT staff of the CAH/rural health environment

Using these challenges and opportunities as their framework, the workgroup identified seven objectives and nine strategies that they believe will address HIT issues and advance the goals of the Kansas Flex Program/KRHOP. They also identified measures and in some instances targets for those measures that accompany each objective. The goals, objectives, and measures are below followed by strategies and the associated activities.

GOAL: ADVANCE RURAL HIT
HIT OBJECTIVES:

- All CAHs have an EMR (that supports discreet data relationships)
    - Measure/Target: EMRs are in place and implemented in all CAHs by 2012
- All CAHs' EMRs are capable of being inner, intra, and inter-operable
    - Measure/Target: CAH EMRs are fully operable by 2014
- CAHs are able to meet the specialty care needs of rural Kansas through telemedicine
    - Measure/Target: By 2012, all CAHs have the ability to provide services via telemedicine as needed

- All CAHs have access to relevant and helpful Kansas and national HIT information, technical assistance, and best practices
    - Measure/Target: CAHs report being satisfied with the HIT section of the KRHOP Website
    - Measure: The KRHOP Website has an annual increase in users
    - Measure: The KRHOP HIT listserv has an annual increase in information exchanges
    - Measure/Target: CAHs report being "satisfied" or "very satisfied" with the technical support provided by CAH HIT staff
- Those working in rural areas are trained in HIT or have access to rural relevant HIT training
    - Measure/Target: By 2012, at least two training programs are available electronically to train clinical and IT staff to work in rural HIT
    - Measure: CAH administrators increasingly report new hires (clinical and other staff) as having HIT skills
- ITV is available and used by all CAHs for education and training purposes
    - Measure/Target: By 2009, all CAHs report having access to and the tools needed to use ITV
    - Measure/Target: At least 3 Flex Program supported training sessions per year are presented via ITV starting in the 2008 – 2009 grant year
    - Measure/Target: CAHs have at least one staff person that participates in at least one Flex Program supported training sessions presented via ITV, 75% by 2009, 85% by 2010, and 95% by 2011
- HIT standards, reimbursement, licensing and border issues are addressed statewide
    - Measure: State rural health stakeholders recognize a need and advocate for a state HIT Office

HIT STRATEGIES/ACTIVITIES TO MEET THE OBJECTIVES:

- Provide EMR technical assistance to CAHs
    - Activity: Track the HIT status of CAHs (EMR and telemedicine)
    - Activity: Include EMR information and updates as a regular component of SNC meetings
    - Activity: Update KHA's EMR tool that documents the costs, benefits, and pitfalls of implementing and maintaining an EMR.
    - Activity: Develop EMR case studies to document lessons learned and tips in identifying, implementing, and maintaining an EMR.
    - Activity: Identify, maintain, and make available a list of CAHs, the EMR they are using, and contact information for those wishing to talk to them about their EMR
- Provide telemedicine technical assistance to CAHs
    - Activity: Include telemedicine as an area for education and discussion at SNC meetings
    - Activity: Conduct and make available a literature review that documents the costs, benefits, and pitfalls of implementing and maintaining telemedicine.
    - Activity: Develop telemedicine case studies to document lessons learned and tips in identifying, implementing, and maintaining an telemedicine. Focus should be on high need (e.g., mental health) and up and coming services (e.g., pharmacy)
    - Activity: Identify, maintain, and make available a list of CAHs, the telemedicine services they are providing, and contact information for those wishing to talk to them about their telemedicine

    - Activity: Support physician-to-physician telemedicine training opportunities to increase physicians' comfort with and acceptance of telemedicine and its uses (this may include partnering with the Kansas Medical Society or Area Health Education Centers)
- Develop and Support an HIT area on the KRHOP Website
    - Activity: Post all HIT related information developed by KRHOP on the Website
    - Activity: Post HIT training opportunities on the Website
    - Activity: Establish a CAH HIT staff/super-users listserv as part of the Website
- Establish a pool of CAH HIT staff experts that can be consulted to address CAHs' HIT needs (shared resource)
    - Activity: Email/survey CAH Administration to identify CAH HIT staff
    - Activity: Survey CAH HIT staff to identify their areas of expertise and to determine which CAH staff are interested in serving as technical support to other CAHs
- Establish a mechanism for on-going planning related to rural HIT
    - Activity: Discuss needs and issues as part of a SNC meeting and identify the best way to move forward with those issues (e.g., specialists and border issues with telemedicine, addressing needed changes in HIT reimbursement policy, identifying patient data that needs to be stored on a discreet basis)
- Develop or make available an ITV teaching tool on how to be effective in presenting information via ITV
    - Activity: Partner with Kan-Ed to create an ITV teaching tool
    - Activity: Make the tool available electronically on the KRHOP Website
    - Activity: Demonstrate the information presented in the tool at a SNC meeting and at other venues
- Develop web-based HIT certification courses for IT staff, needing clinical education, and clinical staff, needing IT education
    - Activity: Assemble a group of HIT staff working in CAHs to assist with developing the framework for the curriculum
    - Contract with a community college to develop the curriculum and make it available on-line (as appropriate). A potential model for this work may be the Fort Hays State University's *Grants Training and Certification Program* (http://www.fhsu.edu/sociology/8weekgrants.shtml)
- Train health care students within an HIT environment
    - Activity: Convene a group of key educational partners to discuss how HIT is incorporated into health care educational training to assure it is rural relevant (e.g., ITV, telemedicine, and EMR use) and work with them to enhance/expand these opportunities as needed
- Advocate for the establishment of a Kansas HIT Office to address HIT (standards, reimbursement, licensing and border issues)
    - Activity: Work with the Health Policy Authority and other HIT stakeholders to establish an HIT office

QUALITY IMPROVEMENT (QI): THE CURRENT CONTEXT, NEEDS, ISSUES, AND OPPORTUNITIES TO SUPPORT QI IN RURAL KANSAS

Kansas CAHs consider quality improvement (QI) to include data collection, policy and procedure changes and other activities that address quality of patient care, patient safety, medication reconciliation, infection control and risk management as well as activities targeted towards health promotion and disease prevention. They also view QI as being increasingly important, particularly given the anticipated changes in health care reimbursement and demands from patients.

The KRHOP has been implementing two primary QI projects over the past few years: Quality Health Indicators (QHi) Project and the CAH Quality and Performance Improvement Program. QHi is the Web-based hospital benchmarking program that was developed through KRHOP. It was designed by Kansas CAHs and is user-driven to allow rural hospitals to collect, track and trend data that are pertinent to their unique environment and to participate Hospital Compare, a nationally recognized initiative to demonstrate health care quality in rural America. Recent updates to the application are designed to improve data integrity and enhance the reporting process. A popular feature of QHi is the Core Measures Dashboard that displays measurement comparisons for the eight core measures. Each participating hospital is asked to collect at least the core measures, a subset of the over 40 measures available in the QHi library of indicators. Statistical averages for the hospital, state and all of QHi are provided for the most recent three months. Users have the opportunity to create their own customized dashboard by selecting any of the measures they currently collect to display. Hospitals print the easy-to-read dashboards to illustrate their hospital's performance and identify areas of opportunity when presenting at clinical quality, human resource, financial, operational and board meetings. Fifty-five Kansas CAHs and 121 CAHs nationwide participate in the project.

Also aimed to address QI needs in Kansas is the multi-state CAH Quality and Performance Improvement Program. The Program makes available CAH tools to improve quality and performance through assessment, consultation, education, and networking/benchmarking. Each organization completes a formal self-assessment project with the guidance of Darlene Bainbridge of D.D. Bainbridge and Associates. Darlene also provides one-on-one consultation and guidance with facilities to help them develop and carry out an organizational plan to enhance quality and performance. In addition to on-site and phone/email support, a series of educational programs are offered through regional workshops and webinars/conference calls. These programs are supplemented with a series of on-line training modules. To encourage dialogue and sharing of best practices among project participants, the project supports an on-line benchmarking project. Seventy-five Kansas CAHs participate in this project along with 21 CAHs in from 5 other states.

QI Planning

As part of the Kansas Rural Health Planning process, CAH quality improvement staff from around the state discussed CAH QI issues and concerns over three teleconference calls as part of a QI workgroup. During the conference calls, workgroup members explored current rural CAH QI issues and needs, delineated the strengths, barriers, and opportunities that exist, identified targeted CAH QI objectives and brainstormed strategies and activities to achieve these objectives. The outcomes of these workgroup conversations are reflected below.

Although not included in this section of the plan, the workgroup also discussed and reported HIT as a "significant" challenge for QI in rural areas. In response, work group members provided comments

and feedback related to the recommendations of the HIT workgroup as their contribution to HIT in this plan.

Quality Improvement Challenges Impacting CAHs

- Decreasing the risk of health care associated infections/infection control
- Risk management
- Medication errors and reconciliation
- Improving quality indicators being reported
- Meeting the National Patient Safety standards
- Decreasing falls
- Lack of resources to address QI needs
- Lack of/limited HIT
- Turnover of QI staff
- Lack of integrated electronic health records
- Lack of physician champions to help support change
    - Particularly in the smallest rural hospitals
- Lack of networking opportunities for some CAHs
- Resources to develop and implement quality improvement projects
    - EHR
        - Building systems that work for the hospitals
        - Costly, particularly with the trial error approach
        - PDAs vs. notebooks
    - Staffing
    - Financial
- Quality improvement tracking
    - Electronic
    - Outcome tracking
    - Tools
    - How to use the CART tool (really need someone that knows how to use the CART tool well) KFMC (KS Foundation for Medical Care)

Opportunities to Improve Quality of Care

- Some CAHs have well-developed quality improvement networks in place that serve as a means to share best practices, tools, policies and procedures, and discuss rules and regulations
- Some CAHs are having few to no difficulties reporting quality indicators to Hospital Compare and using the CART tool (trained folks are able to use tool in way it was intended)
- Some CAHs have physician champions that are advancing quality improvement initiatives
- Education and learning
    - Quality Forum sponsored by the Kansas Foundation for Medical Care (KFMC)
    - Risk Management Meeting sponsored by KFMC
    - Multi-state Quality and Performance Improvement Program (work by Darlene Bainbridge)
- Participation in national quality initiatives

Anticipated Quality Improvement Needs and Issues

- Pay-for-performance payment models
- Documentation of patient diagnosis and condition present upon admission

Using these QI challenges and opportunities as a framework, the workgroup identified five objectives and seven strategies that they believe will address key QI issues and needs and advance the goals of the Kansas Flex Program/KRHOP. They also identified measures and in some instances targets for those measures that accompany each objective. The goals, objectives, and measures are below followed by strategies and the associated activities.

GOAL: IMPROVE THE QUALITY OF RURAL HEALTH SERVICES
QI OBJECTIVES:

- All CAHs participate in CMS' Hospital Compare
  - Measure/Target: All CAHs are reporting on all of the medical condition indicators to Hospital Compare by 2012
- CAHs have the data and tools needed to address/improve quality of care and patient safety
  - Measure/Target: All CAHs participating in QHi are submitting data for all core indicators
  - Measure: QHi data audits indicate no data quality issues
  - Measure: All CAHs reporting to QHi show improving quality of care for all core indicators in QHi
- Falls in CAHs decrease (measures included as Appendix B)
  - Measure: Unassisted patient falls per patient decline as reported by CAHs through QHi
- Medication errors in CAHs decrease (measures included as Appendix B)
  - Measure: Medication omissions resulting in medication errors per patient day decline as reported by CAHs through QHi
  - Measure: Medication errors resulting from transcription errors per patient day decline as reported by CAHs through QHi
- Health care associated infections occurring in CAHs decrease (measures included as Appendix B)
  - Measure: Nosocomial infection rate per patient day declines as reported by CAHs through QHi

QI STRATEGIES/ACTIVITIES TO MEET THE OBJECTIVES:

- CAHs not reporting to Hospital Compare are provided technical assistance and support
  - Activity: CAHs not participating in Hospital Compare are identified and contacted to identify barriers to participation
  - Activity: CAHs not participating in Hospital Compare are provided technical assistance and resources as needed to support them in submitting data to Hospital Compare
  - Activity: Engage in contractual arrangements with CAHs that submit all medical condition data to Hospital Compare for at least one year, to provide peer support to other CAHs
- Identify and showcase CAH quality improvement best practices
  - Activity: Develop and email a best practices questionnaire to CAH QI coordinators
  - Activity: Contact and obtain additional information on best practices as needed
  - Activity: CAH QI best practices are presented as vignettes in a written document
  - Activity: CAH QI best practices are distributed and presented as part of a panel discussion at KRHOP supported events
- Establish and support a CAH QI staff listserv

- Support QI pilot projects and other initiatives to address CAH QI issues related to falls, medication errors, and health care associated infections
    - Activity: Establish contractual arrangements with CAHs to support medication errors reduction pilot projects (e.g., pharmacy, bar-coded medication administration at the bed-side)
    - Activity: Establish contractual arrangements with CAHs to support quality improvement pilot projects to address health care associated infections/infection control issues
    - Activity: Establish contractual arrangements with CAHs to support quality improvement pilot projects to decrease falls
- Work with networks to address pharmaceutical issues that create barriers to addressing key medication error issues (e.g., the need for medications to be packaged in a unit dose)
- Identify and showcase best practices to address health care associated infections/infection control issues, medication errors, and falls (this should be in coordination with the CAH QI best practices
    - Activity: Develop and email a best practices questionnaire to CAH QI coordinators
    - Activity: Contact CAH QI coordinators and obtain additional information on best practices as needed
    - Activity: Develop a best practices report and distribute through the CAH QI staff listserv and at a SNC meeting
    - Activity: Facilitate CAH QI best practices conference calls with CAH QI staff which feature the best practices in the QI best practices report
- Continue supporting the work of the Quality & Performance Improvement Program
    - Activity: Training and tools should focus on falls, medication errors, health care associated infections/infection control as well as the other core indicators in QHi

NEXT STEPS

Although the Kansas Rural Health Plan serves as a guide to advance the Flex Program in Kansas, many goals, objectives, strategies, and activities included as part of the plan, require additional support from KRHOP partnership members and other rural health stakeholders in the state. Therefore, to begin advancing the goals of the plan, the KRHOP will use the Kansas Rural Health Plan to determine how to allocate Flex Program resources. Simultaneously, the KRHOP will re-engage a number of work group members to assist KRHOP in prioritizing the objectives included in the plan and to determine which objectives and activities should be accomplished through the KRHOP. The KRHOP will also engage state stakeholders in a discussion about the plan and each organization's ability to contribute to implementing and advancing the plan. Finally, baseline data will be collected to track outcomes measures and planning work will begin on other rural health planning areas that are being considered for inclusion in future Kansas Rural Health Plan updates.

APPENDIX A

Definitions

HIT: Allows comprehensive management of medical information and its secure exchange between health care consumers and providers

Electronic Medical Record (EMR): An electronic record of health-related information on an individual that is created, gathered, managed, and consulted by licensed clinicians and staff from a single organization who are involved in the individual's health and care.

Electronic Health Record (EHR): An aggregate electronic record of health-related information on an individual that is created and gathered cumulatively across more than one health care organization and is managed and consulted by licensed clinicians and staff involved in the individual's health and care.

Electronic Personal Health Record (ePHR): An electronic, cumulative record of health-related information on an individual, drawn from multiple sources, that is created, gathered, and managed by the individual. The integrity of the data in the ePHR and control of access to it are the responsibility of the individual.

Intraoperable: A centrally-based system where one product is somehow central and dominant, either by product, vendor, or the system design itself. The connectivity is supported by protocols and data formats that favor the central software, and those are often prescribed by the vendors. The goal is to maintain all important data and processing within the central software system as a whole.

Interoperable: The ability of different information technology systems and software applications to communicate, to exchange data accurately, effectively, and consistently, and to use the information that has been exchanged. There is no centrally-based system that makes decisions on how the software must interact as there are open standards that do not favor any one product.

Sources: SOURCE: *Defining Key Health Information Technology Terms*, Draft Report Prepared for the Second Public Comment Period., National Alliance for Health Information Technology, [On-line], Retrieved March 25, 2008, http://definitions.nahit.org/doc/HITTerms_DraftReport_032408_Final.pdf; National Alliance for Health Information Technology, Retrieved May 8, 2008, http://www.nahit.org/cms/

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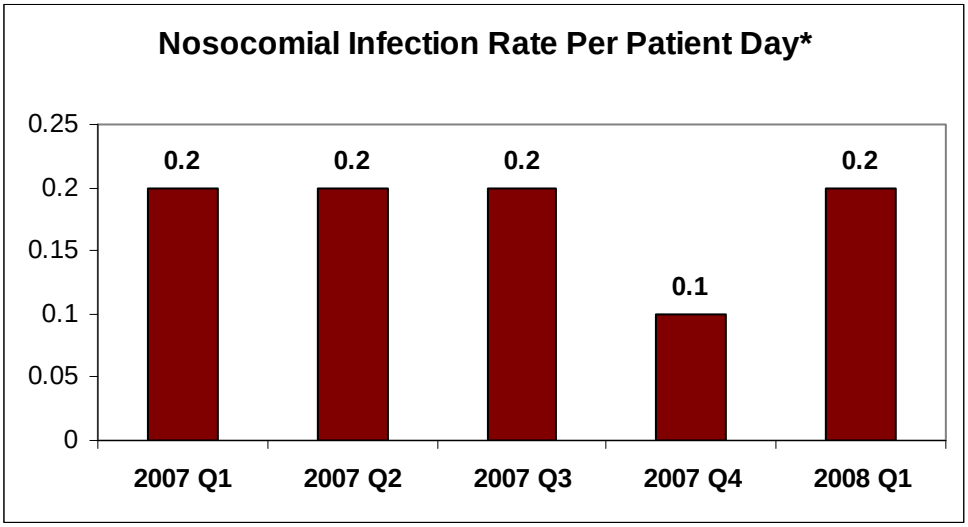
http://lazdynas.lt/intelika/ziniu-baze-diskut/km-kbfld/sem-web/sem-istr/inter-sem/interop/interop-intraop [On-line], Retrieved June 20, 2008.

APPENDIX B

QHi Key Measures for the Kansas Rural Health Plan

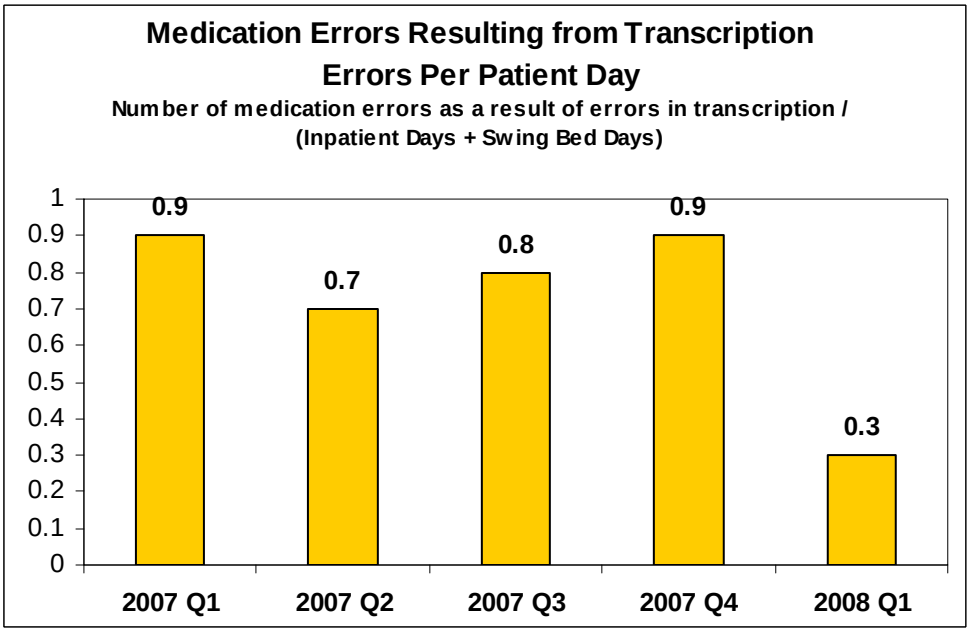
Nosocomial Infection Rate Per Patient Day

Month	# Hospitals	2007 Q1	2007 Q2	2007 Q3	2007 Q4	2008 Q1
KS Avg	28	0.2	0.2	0.2	0.1	0.2



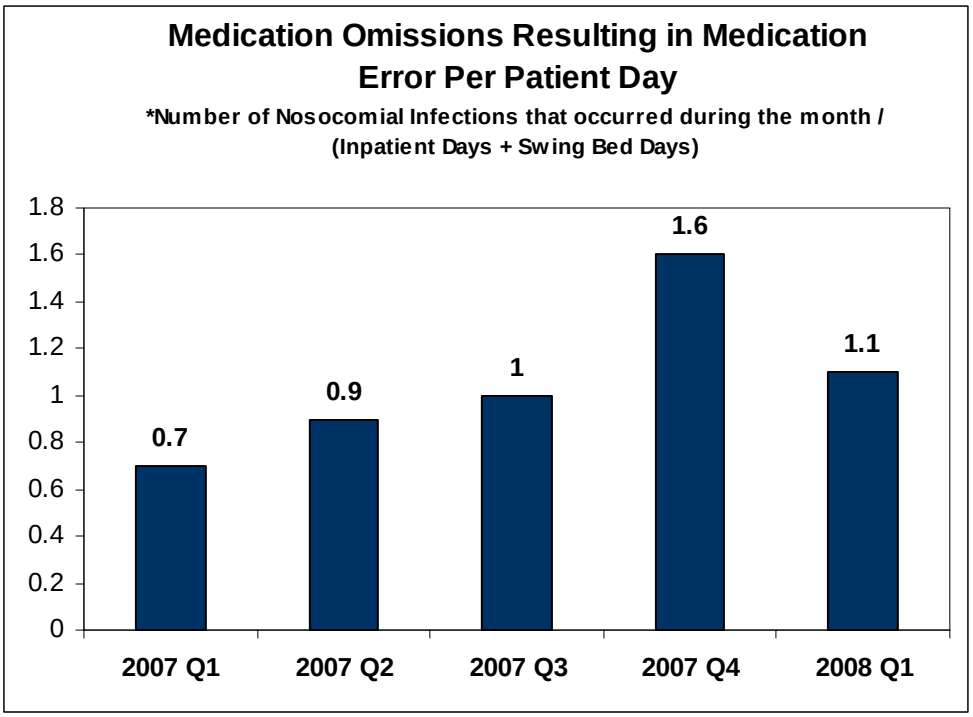
Medication Errors Resulting from Transcription Errors Per Patient Day

Month	# Hospitals	2007 Q1	2007 Q2	2007 Q3	2007 Q4	2008 Q1
KS Avg	12	0.9	0.7	0.8	0.9	0.3



Medication Omissions Resulting in Medication Error Per Patient Day

Month	# Hospitals	2007 Q1	2007 Q2	2007 Q3	2007 Q4	2008 Q1
Peer Avg	8	0.7	0.9	1	1.6	1.1



Unassisted Patient Falls Per Patient Day

Month	# Hospitals	2007 Q1	2007 Q2	2007 Q3	2007 Q4	2008 Q1
KS Avg	40	7.9	5.2	7.8	7	8.4