Oklahoma State University’s Center for Health Systems Innovation (CHSI) is a unique center that operates at the intersection of OSU’s Spears School of Business in Stillwater and the Center for Health Sciences in Tulsa. OSU and Spears School of Business alumnus Neal Patterson endowed CHSI. Patterson is a founder and current chairman and CEO of Cerner Corporation, one of the country’s largest providers of electronic medical records systems. In addition to providing the funding to enable CHSI’s operations, Patterson donated the Cerner Health Facts dataset, the largest de-identified, HIPPA compliant healthcare relational database available representing more than 50 million longitudinal patient records covering 14 years.

The Need
CHSI is actively executing against our strategy to develop and promote innovative solutions in two primary areas:

• Rural and Native American health system business and delivery model innovation
• Health care information technology and data analytics/insights

Rural and Native American health system innovation:
Most of the rural hospitals and clinics in Oklahoma and the nation are faced with ongoing business model and financial challenges. Our focus within this unit of CHSI is to develop, test and implement innovative business and delivery models within rural and Native American health care systems with a goal to improve clinical quality and reduce costs. We are not focused on the clinical side of health care delivery. Candidly in the U.S. we are quite good at clinical delivery. Rather we are focused on how health care is delivered from a business model perspective.

CHSI is focusing specifically on the overall rural and Native American health clinic business and delivery models with an eye toward assuring patients are accessing the health care system in a cost effective manner, specifically, in lower cost health care environments while maintaining clinical quality. In addition, we are focusing on targeted patient populations representing high impact disease states, initially focused in cardiovascular.

The Request
Funding is sought to build the CHSI Rural & Native American Innovation Lab at the OSU Medical Center in Tulsa. A total of $3 million over four years is requested. Focusing on the sponsored research effort, the National Institutes of Health (NIH) and the National Science Foundation (NSF) represent the greatest funding opportunities in the area of analytics and health care.

Center for Health Sciences President Kayse Shrum, D.O., left, and OSU medical school students Jake Whitener and Mercedes Bernard appeared in the video, “The Cowboy Code.”
two proposals to OSU’s Institutional Review Board (IRB) Committee this summer:

- A study to identify factors that interfere with workflow in rural Oklahoma family clinics
- A study of the prevalence and management of silent atrial fibrillation in rural populations of Oklahoma

We also prepared an IRB specific to the Cherokee Nation Health System to focus on a similar atrial fibrillation study in their population.

Health care information technology:
In rural and Native American health systems there is a decreasing supply of health care professionals to meet the demands on the health care system. This is forcing health care organizations to do more with less. Furthermore, software/algorithms are becoming more sophisticated while simultaneously digital hardware continues to be faster, better and less expensive.

CHSI has been given the Cerner Health Fact database, which includes over 50 million de-identified, HIPPA compliant records covering over 14 years, to use as an academic resource. Obviously, this is a great resource for CHSI, but data is ubiquitous. As the saying goes, “we are pulling in more data but starving for knowledge.” We will utilize this data by converting it into knowledge that will enable practitioners to do more with less. Our focus is threefold:

1. Use data sets to support research activity in rural and Native American health system business and delivery model innovation
2. Mine data for clinical insights, focusing specifically on questions that this large data set enables
3. Develop a diabetes clinical decision support algorithm to enable more effective management of rural and Native American diabetic population using advanced information technology layers

CHSI is working to establish various internal and external partnerships to extract value from the data sets along the three lines discussed above. To that end, we are working internally to establish a process to collaborate with faculty members at OSU. Externally we are working on establishing a number of collaborations from Dartmouth College’s Health Care to PriceWaterhouseCoopers and others.

The OSU advantage

- OSU has a dominating presence in rural health facilities and hospitals (most of the doctors in rural hospitals are OSU graduates)
- We have a super computer (Tandy) for our use in Tulsa for data and informatics research projects
- We have access to one, if not the, largest relational de-identified HIPPA compliant health care databases
- We are building world class, turn key capabilities for rural and Native American health system innovation

For More Information

- The Center for Health Systems Innovation: http://chsi.okstate.edu/
- The Spears School of Business: http://spears.okstate.edu/
- Center for Health Sciences: http://www.healthsciences.okstate.edu/index.php

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The Center for Health Systems Innovation