INNOVATIVE TECHNOLOGY SUPPORTING HEALTH EDUCATION

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MOTIVATION

• Preventive care at an early stage of child development has the potential of reducing, if not eliminating the possibility of developing chronic diseases that increase the cost of health care.
• Health education is an critical component of preventive care.
• Healthcare providers routinely offer health education.
• These educational and training materials require relatively large digital storage space and should be available using multiple computing devices.
• Sensor-based technology can now be used to measure the impact of health education on health outcome.

OBJECTIVE

✓ National University Community Research Institute (NUCRI) is engaged in developing myCHOIS or Community Health Obesity Informatics System as a health-IT solution to address the childhood obesity and related chronic diseases with a vision to offer it as a fully functional EHR.
✓ Developed a grid portal to store, manage and share large amounts of distributed community health related data in a data grid for further analysis by the health researchers in a collaborative environment.
✓ Use of Mobile Technology to develop solutions
✓ Develop mobile application for collecting real-time streaming physiological data.

BACKGROUND

• myCHOIS system has been developed using open source portal technology with three-tiered Open Grid Services Architecture.
• Developed multiple mobile applications that can communicate with myCHOIS.
• This system is now deployed for the School Health Program of the Illinois Department of Human Services (IDHS) after successful pilot testing. Its School Health Program monitors students health provided through 59 School-based Health Centers (SHCs) located throughout the State of Illinois.
• Developed and deployed a data-grid, termed C-Grid for storing and managing big data.

PROBLEM DESCRIPTION

✓ In 2010 alone, health related data from about 120,000 cases have been collected using myCHOIS.
✓ A significant number of educational events were conducted that ranged from intervention of obesity to prevention of sexually transmitted diseases.
✓ No tool was available to measure the impact of such health education and training.

SOLUTION

• myCHOIS as a health-IT solution
• C-Grid to store massive amounts of data
• Mobile applications to collect data at the point-of-care and real-time streaming physiological data
• A PHR system to collect personal health data

CONCLUSION

• Data collected using mobile applications can be used for health monitoring while data on educational training events can be saved for a longitudinal study.
• Video and other big data can be saved in C-Grid.
• Mobile applications serve as a gateway to these two portals, myCHOIS (nucri.org/mychois) and PHR (nucri.org/healthbychoices)

FUTURE WORK

In planning phase for a longitudinal study utilizing this infrastructure. This will include HIPAA and FERPA compliant surveys.

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REFERENCES