1. SPECIFIC AIMS

The Telehealth Rural Ambulatory Care Coordination (TRACC) initiative is a novel patient-centered population health management (PHM) outreach delivery model for delivering subspecialty care for refractory chronic epilepsy and co-morbid mood disorders in Northeastern Illinois (FIGURE 1).

An independent community-based PHM coordination hub has been established in McHenry County, IL to facilitate access to community social service resources, telemedicine-linked subspecialty expertise and ‘on-demand’ internet-based patient education.

Such a community-based health information technology (IT) bridge for managing refractory epilepsy is critical for accommodating a markedly increased patient throughput upon implementation of the Affordable Care Act.

This initiative aims to improve the co-morbidity patterns and the healthcare use-behavior of the majority of the individuals in the rural under served community with refractory epilepsy and co-morbid psychiatric illness.

The clinical implementation and replication of this strategy in other communities hinges on the scalability of an efficient networking approach. Such an approach must coordinate near real-time matching of community psychosocial services with geographically distant specialized neurological needs of a large portion of individual patients residing in the community.

2. METHODS

The methodology combines the following four innovative components:

(1) a HIPAA-compliant portable video-conferencing communication protocol and technology for remote access of specialists at Rush University Medical Center (RUMC) with patients and community-based healthcare providers (FIGURE 2, A&B).

(2) a custom-designed web-based networking technology employing a relational database for accessing and tracking allocation of all community-based resources and providers.

(3) computer-intensive production, archiving and on-demand streaming of an animated education series targeting epilepsy and mental health to accommodate closed virtual classrooms (FIGURE 3).

(4) an independent community-based PHM coordination hub facilitating the above innovative components.

3. RESULTS

- Preliminary data demonstrate a 262% increase in patient throughput (489 patients) evaluated since 2010.
- A four-fold increase is observed in successful epilepsy specialist referrals at the distant tertiary care center (RUMC) of children and adults evaluated in the non-affiliated rural emergency department with a diagnosis of seizures.
- ‘On-demand’ community psychosocial resources have been matched with all patients using our networking provider database.
- Individual-level predictors included insurance status, age, ethnicity, and co-morbidities.

4. CONCLUSIONS

This telehealth IT-intensive PHM-based outreach delivery model overcomes barriers preventing such coordinated care from being implemented.

The model significantly expands the geographic reach of a distant tertiary care medical center to an underserved region. Preliminary data suggest that an independent community-based coordination hub can efficiently maximize patient access to community psychosocial resources, medical expertise, and customized patient education.

Progress of the TRACC model can be followed at: http://www.synapticom.net

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