The Cost of Healthcare

- The average annual healthcare coverage spent per person in the U.S. is $8,700 according to the Centers for Medicare and Medicaid Services (CMS).
- This expenditure is nearly twice as much when compared to other developed countries.
- The agency predicts such spending will reach $14,000 per person by 2021.

Refractory Epilepsy

- Approximately 500,000–900,000 of these individuals are diagnosed with refractory epilepsy.1-3
- As a disease state comparison, this refractory group equals or outnumbers the prevalence of those in the U.S. with multiple sclerosis, new-onset strokes and Parkinson’s disease.

Impact of Chronic Refractory Conditions

- Such disparities impact an ability to self-manage ongoing care needs and adherence to prescribed therapies, leading to increased utilization of healthcare resources.1-3
- U.S. hospitals may face financial penalties when patients develop exacerbations of their chronic medical conditions while in their care, or are readmitted within a short time frame.

Epilepsy

- Epilepsy is the fourth most common neurological disorder in the United States.
- The condition affects nearly 3 million Americans at an annual cost of $17.6 billion.
- $1.8 million per year is spent on emergency department utilization expenditures.
- A majority of the cost is incurred by an estimated 30% of these individuals diagnosed with refractory epilepsy – not responsive to medical therapies.

Barriers

Distance: A large fraction of individuals in the U.S. with refractory epilepsy are located in rural communities.1-2
- Socio-economic Status: A disproportionate number of individuals in rural communities with refractory epilepsy are under-insured.3

Affordable Care Act

- Once healthcare reform is fully implemented 18.2 million of the estimated 48 million uninsured individuals in the U.S. are expected to receive healthcare insurance.1
- 800,000 of the 1.8 million uninsured individuals in Illinois will receive healthcare coverage following full implementation of the ACA. GetCoveredIllinois.gov
- This disparity will noticeably impact access to limited healthcare resources.

Telemedicine as a means or bridge for delivering care

American Telemedicine Association Definition: Use of medical information exchanged from one site to another via electronic communications to improve patients health status.

Informal consultations between practitioners

Telemedicine is a subcategory of telehealth.

Lower technology costs & portability are facilitating deployment.

A new paradigm or means to treatment for healthcare providers.

Patients benefit – where traditional delivery of healthcare services are influenced by distance, lack of local specialists and resources.

Telehealth: the use of electronic information and telecommunication technologies to support long-distance clinical healthcare, patient and professional health-related education, public health, and health administration.

Telemedicine is a subcategory of telehealth.

Worldwide Telehealth Utilization

As of mid-2013, more than 15 U.S. hospitals provide pediatric telemedicine consultations to patients at remote, rural, or underserved emergency departments. The patient, parent, and referring physician are often present for the audio and video interaction with the off-site pediatric specialist.

Higher quality of care outcomes are being observed for telemedicine consultations as opposed to phone consultations.

The use of laptops, tablets, and other mobile devices are more cost-effective than larger video-conferencing systems.

In Alaska, the Alaska Federal Health Care Access Network (AFHCAN) connects approximately 180 Alaska Native community village clinics, 25 sub-regional clinics, 4 multi-physician health centers, 6 regional hospitals, and the Alaska Native Medical Center in Anchorage.

More than 3,000 providers have engaged in over 160,000 telehealth clinical consultations since 2001.

It is estimated that in 2012, the AFHCAN telehealth program saved the state of Alaska $8.5 million in travel costs for Medicaid patients alone.

Canada has one of the most sophisticated telemedicine infrastructures in the world. Feasibility of epilepsy care through telemedicine is established, but its use by practicing neurologists is underutilized.

Canadian telemedicine was mainly used for educational purposes.

79.5% of Canadian physicians had access to video-conferencing equipment, and 61.5% voiced a need for clinical telehealth.

The main perceived obstacles in the use of telemedicine in Canada were a lack of infrastructure support and reimbursement problems followed by limitations in physical examination.

Reimbursement and state licensure
- state licensure rules may prevent providers in one state from treating patients in nearby states.
- less restrictive Medicare reimbursement rules for telehealth services are not yet available.

The Telehealth Enhancement Act of 2013 has been introduced in Congress (September 2013). It would expand the sites available for telemedicine reimbursements, add incentives for fewer hospital readmissions, and facilitate home-based kidney dialysis, among other items.

The Telemedicine for Medicare Act would expand licensure across state lines.
Proposed Medicare Changes

- Telehealth tools are only recently shown to be effective in coordinating care and in saving time in areas where service access is scarce.
- However, there is a lack of data that telehealth services improve outcomes.
- The Institute of Medicine (IOM) called for more evidence on telehealth patient outcomes in 2012-2013.
- The possibilities for telehealth are expanding faster than healthcare’s ability to use, implement, or pay for it.

Solution?

**Telehealth:** as a means or bridge for delivering care

Telehealth -> mHealth

**FUTURE TELEHEALTH INITIATIVE:**

Include developing health information technology-assisted community-based coordination centers collaborating with large medical centers. Such initiatives can accommodate increased patient numbers following healthcare reform.

**Strategy:** Develop customized web-based HIPAA-compliant technology for plugging into a ‘coordination center’ operated by ‘navigators’ matching ‘on-demand’ epilepsy care and co-occurring conditions such as mood disorders and developmental disabilities.
Privacy & Security Certification Commission for Healthcare Information Technology (CCHIT)

Additional standards for security and functionality:
(1) the ability to have authorized administrators to grant or remove restrictions or privileges to users and groups,
(2) with the ability to log information and perform audits,
(3) and use passwords with user authentication.
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