
ROME
EUROPEAN
TELEMEDICINE
CONFERENCE
7-8 OCTOBER 2014 | ROME, ITALY
TELEHEALTH: A TOOL FOR HEALTH CARE TRANSFORMATION
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Disclaimers:

Telehealth

- Terminology and Definitions.
- What is the Product?

Evolution of Telehealth

- The Telephone.
- Telemedicine.
- Telehealth.
- Home Telehealth.
- Virtual Care.
- mHealth.
- Connected Health.

Genesis of Healthcare Transformation

- US Healthcare Spending was $3 trillion, or 18% of GDP in 2013, and Growing Faster than the US Economy .
- Most Complex 5% of Patients Accounted for 50% of Healthcare Costs, Approximately $36,000 for Each Individual.
- Management of Chronic Disease Conditions Consumes 75% of Total Healthcare Spending and Causes 70% of the Mortality in the US.
- Costs Directly Associated with 9.6 million Patients with Dual Eligibility Amounted to $270 billion of Healthcare Expenditure Annually, and More Likely to Have Chronic Conditions.
- An Aging Population, Rising Prevalence of Obesity, and Unhealthy Lifestyles will Exacerbate these Trends.

References: Centers for Medicare & Medicaid Services. National Health Expenditure Projections 1965-2022 U.S. Agency for Healthcare Research and Quality (AHRQ) Centers for Disease Control and Prevention "Chronic Disease Prevention and Health Promotion "Congressional budget office: Dual-eligible beneficiaries of Medicare and Medicaid

Antecedent Causes

- Legacy Healthcare Systems were Designed to Deliver Acute Care Services; and Stem Back to the Management of Communicable Disease.

- Demographics and “Boomers”.

- “Every System is Perfectly Designed to Achieve Exactly the Results it Gets” *(Dr. Don Berwick).*

Precipitants of Change

- Cost.
- Variability in Outcomes.
- Changing Patient and Caregiver Expectations.
- Emerging New Technologies.

Ways Telehealth is Transformative

- Rebalancing Patient Practitioner Relationships.
- Changing the Location of Care.
- Focusing on Making the Right Decision, for the Right Person, at the Right Time and in the Right Place.
- Leveraging Resources that “Bricks and Mortar” Care Make Inflexible.

Transformative Tools Telehealth can Utilize

Area of Change

- Professional Practice.
- Hospital Focus.
- Patient Engagement.
- Electronic Health Records.
- Variability in Quality.
- Cost and Accessibility.
- Outcomes.

Available Solution

- Virtual Team Working.
- Continuum of Care.
- Internet Consumerism.
- Knowledge Management.
- Quality Management.
- Supply-chain Management.
- Predictive Modeling.

Taking Virtual Care Networks to Scale

- Clinical Issues.
- Technology Issues.
- Business Issues.
- Demonstrating Positive Outcomes.

Types of Telehealth Networks

- Secure Messaging.
- e-Consults.
- Home Telehealth.
- Video Telehealth.
- Store-and-Forward.
- Teleradiology.

Home Telehealth Networks (1)

- Clinical Issues:
  - Patient Need (NIC and CCM).
  - Clinical Model (patient self-management).
  - Clinical Process Re-engineering.

- Technology Issues:
  - Usability.
  - Interoperability.
  - Robustness and Sustainability.

Home Telehealth Networks (2)

- Business Issues:
  - Clinical Activity Coding.
  - Workload Capture.
  - Business Case Analysis.

- Outcomes:
  - Utilization.
  - Patient Satisfaction.

Home Telehealth Networks (3)

Outcomes:

- Growth of Patient Numbers 2003 – 2007 from 2,000 to 31,570.
- Analysis of Cohort of 17,025 Patients.
- 25% Reduction in Bed Days of Care.
- 19% Reduction in Hospital Admissions.
- Mean Patient Satisfaction Score of 86%.
- Cost per Case $1,600 per Patient per Annum.

Darkins, A., Ryan, P., Kobb, R., Foster, L., Edmonson, E., Wakefield, B., et al. (2008). Care coordination/home telehealth: the systematic implementation of health informatics, home telehealth, and disease management to support the care of veteran patients with chronic conditions. Telemedicine and e-Health, 14(10), 1118– 1126..

Home Telehealth Networks (4)

Outcomes:

- 4,999 HT (NIC) Patients Compared with Usual Care in Matched Cohort Group (MCG) of 183,872 Patients.
- Intervention Group had Mean Annual Healthcare Costs that Fell 4%, from $21,071 to $20,206.
- MCG Patients had Cost increase of 48%, from $20,937 to $31,055.

Darkins, A., Kendall, S., Edmonson, E,. Young, M., and Stressel , P. Cost and Mortality Using Home Telehealth to Promote Self-Management of Complex Chronic Conditions: A Retrospective Matched Cohort Study of 4,999 Veteran Patients. Telemedicine and e-Health 2014 May 19 [Epub ahead of print}.

Home Telehealth Networks (5)

Why are Outcomes Disparate in Literature?

- Standardization of interventions +/-.
- Medical Model versus Biopsycho-social Approach.
- Clinical Process Re-engineering +/-.
- EHR
- Whether a Patient Self-Management Focus +/-.
- Benefits of Economies of Scale +/-.

TeleMental Health Networks

In 2013:

78,000 patient encounters to over 91,000 patients, between 146 hospitals and 685 clinics.

7,430 patients with chronic mental health conditions supported by home telehealth to live independently in their homes.

2,284 patients had telemental health video consultations directly into their homes.

National Center established in 2010 provided 2,893 video encounters to 1,033 patients at 53 sites in 24 states.Covers all mental health conditions, focus on post-traumatic stress disorder, depression, compensation and pension exams, bipolar disorder, behavioral pain and evidence-based psychotherapy.

Since 2003:

1,100,000 patient encounters from 150 hospitals to 729 clinics, a 24-fold increase in consultations over ten years.

Other Considerations

- Training.
- Quality Assurance.
- Reimbursement.
- IT and Biomedical Engineering Support.
- Equipment Contracts.
- Service and Warranty.
- Upgrade and refurbishment.

Lessons Learned

- From Building Services for 1.7 Million Patients over 10 Years; and Creating a Capacity to Care for 1 Million Patients Annually.
  - Growth Follows Classic Innovation “S” Curve.
  - Building-out Networks Follows a Characteristic Course.
  - Standardization.
  - Execution.
  - Accountability.
  - Clear Business Models.
  - Phased Strategic Expansion.
  - Culture Change.
  - Marriage Between Clinical Care and Technology.

Darkins A. The Growth of Telehealth Services in the Veterans Health Administration Between 1994 and 2014: A Study in the Diffusion of Innovation. Journal Telemedicine and eHealth. 20:9, 761-8;2014

Summary

- Telehealth is Transformative.
- Not Business as Usual.
- Devil is in the Detail.
- Clear Business Case.
- Defined Accountability.
- Clearly Established Outcomes.
- Changing Relationships with Engaged Patients.
- Umbrella of a Clear and Coherent Vision.

The Future

- Fusion of Big Data and Decision Support.
- Device Agnostic, Disseminated Decision-making.
- Economic Recognition of Bad Decisions.
- Supply Chain Management Concepts.
- Systems Design in Health Care.
- Increased Quality from Consistent Care.
- Obligate Need for In-Person Care.
- Increased Access and Reduced Relative Costs.