Telemedicine and the Future of Primary Care Practice

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Dr. Carter earned his medical degree from Harvard Medical School, Boston, Massachusetts, and a doctoral degree in bioengineering from the University of Pennsylvania, Philadelphia. He has more than 20 years of experience managing and delivering pediatric patient care, as well as more than 15 years of experience with community-based health information systems. He is a strong advocate for efficient health system design and the use of health information technology (IT) to improve the quality of health care. At the PGCHD, Dr. Carter provides oversight for the Family Health Services Division, the Health and Wellness Division, and all clinical providers. In the last three years, he has secured more than $10 million in grant funding for projects, including the Prince George’s County (PGC) Health Enterprise Zone, the PGC Public Health Information Network, Consent2Share (a consent management technology for behavioral health care), and a System of Care program to provide support to at-risk youth and their families. In addition, he is a member of the Maryland Care Coordination Workgroup, the Health Information Exchange Policy Board Workgroup, and the Maryland Telemedicine Workgroup. In addition, he is on the board of Chesapeake Regional Information System for our Patients (CRISP), the Maryland Health Information Exchange, and the Kennedy Krieger Institute.

Learning Objectives

1. Define the essential elements of telemedicine and how they translate to primary care practice.
2. Apply telemedicine to primary care practice, resulting in a virtual practice.
3. Understand how to integrate virtual practice into current practice model with an eye to the future.
Define the essential elements of telemedicine and how they translate to primary care practice

**What is Telemedicine?**

An element of the practice of medicine

where medical information is exchanged from one site to another via electronic communications to improve a patient’s health status

- Not a separate medical specialty but a medical practice tool
- Many payers:
  - No distinction between services provided on site and those provided through telemedicine
  - No distinction in the reimbursement fee structure
  - No separate coding requirements for billing of remote services

Source: American telemedicine association

**Telemedicine vs. Telehealth**

- Telemedicine and Telehealth both describe the use of medical/health information exchanged from one site to another via electronic communications to improve patients’ health status.
- Although evolving, telemedicine is associated with direct patient clinical services and telehealth is associated with a broader definition of healthcare services provided via electronic communications.

**Telemedicine/Telehealth: Examples**

Telemedicine

- remote consultations,
- in-home monitoring,
- outsourced diagnostic analysis,
- remote specialist consultations.

Telehealth

- health literacy – consumer and professional
- medication management
- health promotion
- care coordination and home health
- Disaster management
- Counseling

**Telemedicine/Telehealth: Elements**

Categories of Telemedicine Tools

- Teleconsultations
  - eVisits
  - Specialty consults
- Telementoring
  - Educational assistance and coaching
  - Emergency Medical Technician Assistance
  - Disability treatment - Autism
- Telemonitoring
  - Continuous or asynchronous data gathering for the purpose of diagnosis and treatment
Types of Telemedicine Transmission

- Store and Forward
  - Radiology, Dermatology, Pathology
- Real Time Two Way Transmission
  - e/visits

Telemedicine Components

- Electronic Network, (i.e. Internet, point-to-point, cloud, virtual private network (VPN))
- Source of medical/health information capture and application
  - Computer software programs
  - Digital Device
    - Medical devices, video presentation, tattoo
    - Compute software programs, Aura, image
    - Other specialized software
  - Other

Without Telemedicine

- 24/7 Access
- Available appointments
- Flexibility for patients
- Expanded access
- Reduction in unnecessary tests
- On-demand specialist
- Real time monitoring
- Reduction in ED visits
- Patient satisfaction

Benefits of Telemedicine

- Improved Access
- Cost Efficiencies
- Improved Quality
- Patient Demand

AES POLL QUESTION

Which are considered examples of Telemedicine?
1. remote consultations,
2. in-home monitoring,
3. medical interactive voice response (IVR),
4. remote specialist consultations
Choose the correct combination:
A. 1, 2 and 3
B. 1, 2 and 4
C. 2, 3 and 4
D. 1, 3 and 4
Telemedicine Allows Practice Anywhere

• Connects providers and patients
• Avoids long travel times
• Your patient stays your patient
• Provides care services directly in the community
  – Primary care and Specialty Services such as
    • Teleradiology
    • Telepsychiatry
    • Tele-post surgical care
    • Tele-oncology
    • etc.


Telemedicine Facts

- Telemedicine/Telehealth
  - Telemedicine is a significant and rapidly growing component of health care in the United States.
  - Improves quality, reduces healthcare costs, and increases patient satisfaction.
  - Telemedicine is safe, guided by technical standards and clinical practice guidelines.
  - Expands access to PCP and specialists, and provides 24/7 access.
  - Medicare and Medicaid reimbursements for Telemedicine.
  - 30 states and the District of Columbia require that private insurers cover telemedicine the same as they cover in-person services.

Apply telemedicine to primary care practice resulting in a virtual medical practice

Virtual Medical Practice

Virtual Medical Practice (VMP) is the practice of medicine that utilizes an electronic network.
Goal: Merge VMP into your “brick and mortar” practice

AES POLL QUESTION

You have decided to create a virtual medical practice. Which statement is false.
A. Your virtual medical practice should be merged with your “brick and mortar” practice to create a 21st century practice.
B. You should require that the virtual medical practice improve your income.
C. Your first step should be contacting a telemedicine vendor to assist in all of your decision making.
D. You will need to know your state’s telemedicine regulations.

Virtual Medical Practice

Virtual Medical Practice (VMP) requires practice transformation to meet the following objectives:
- save time
- Improve quality of care
- Improve income
Telemedicine in virtual medical practice

- What Services Can Be Provided by Telemedicine?
  - Live, interactive consultation
  - Remote specialist
  - Remote behavioral health provider
  - Still image transmissions
  - Remote patient monitoring:
    - Vital sign
    - Blood glucose
    - Heart
    - Variety of indicators for homebound patients
  - Medical education

How to Create a Virtual Medical Practice

1. Create Implementation Team
2. Research state regulations
3. Know payer rules for reimbursement
4. Define scope of services
5. Create Implementation Plan
6. Technology selection
7. Patient Adoption Plan
8. Quality Improvement Plan

How to Create a Virtual Medical Practice

- Create an Implementation Team
  - Physician lead
  - All staff
  - Clearly define the mission to create a virtual practice using telemedicine

How to Create a Virtual Medical Practice

- Research State Regulations

How to Create a Virtual Medical Practice

- Know Payer rules for reimbursement

How to Create a Virtual Medical Practice

- Define the Scope of Services
  - % time devoted to telemedicine
  - What situations that will use TM and which will not
  - Create Road Map
  - Define team roles:
    - work through use-cases
How to Create a Virtual Medical Practice

- Create an Implementation Plan
  - Budget Development
  - Timeline
  - Scheduling and billing plan
  - Workflow development
  - Consent Management
  - Technology selection and acquisition
  - Adoption and Training plan
  - Mock trials and process improvement
  - Go Live

How to Create a Virtual Medical Practice

- Technology Selection – key points
  - Vendor neutral
  - HIPPA Compliant
  - Customizable
  - Interoperable
  - Ease of Use for all
  - Fit into your workflow
  - Reasonable Cost

How to Create a Virtual Medical Practice

- Technology Selection - components
  - High Speed Network
  - HD video conferencing
  - Website

Example: Virtual Medical Practice: Home Page

Example: Virtual Medical Practice: Patient Page

- Communication Tools
- Disease Specific Education
- General Health Education
- Social Networking
- PHR Information
- Care and Treatment Plans
- Patient Notes
- Alerts: Provider to Patient
- Patient to Provider

- Technology Selection - components
  - Software (Standards based)
    - EMR
    - Practice Management
    - Chat
    - Email
  - Devices (Standards based)
    - Biometric monitors
    - Video Conferencing
    - Smart Phones, computers
Integration with Telehealth Devices

With the use of Telehealth enabled devices, your patients can upload their readings directly into the portal.

- Blood Glucose
- Blood Pressure
- Heart Rate
- Weight

Biometric Readings

How to Create a Virtual Practice

- Patient Adoption Plan
  - Marketing
  - Education
  - Training
  - Feedback

How to Create a Virtual Practice

- Quality Improvement Plan
  - Measures outcomes
  - Clinical
  - Process
    - Time efficiencies
  - Cost
  - Patient satisfaction

Understand how to integrate virtual practice into current practice model with an eye to the future
Telemedicine as a part of the virtual medical practice addresses all of the secondary drivers of practice transformation as defined by MACRA legislation except which area below.

A. Patient and Family Engagement  
B. Team-Based Relationships  
C. Population Management  
D. Practice as a Community Partner  
E. Coordinated Care Delivery

**AES POLL QUESTION**

**Patient-Centered Medical Home**

**Primary drivers**

- **PERFORMANCE:** Person and family-centered care design combines evidence-based practices with the voice of patient and family.  
- **QUALITY:** Continuous, data driven quality improvement that leverages technology, systems and innovation.  
- **SUCCESS:** Sustainable business operations that are staffed correctly, efficient workflows and coordinated care.

**VMP Introduction into Transforming Clinical Practices Initiative (TCPI)**

**Background**

- **MACRA legislation recognizes Telemedicine**
  - Increasing patient engagement  
  - Decreasing ED utilization  
  - Improving care coordination  
  - Advancing information technology

**TRANSFORMING YOUR PRACTICE SECONDARY DRIVERS**

- 1. Person and Family-Centered Care Design  
  - 1.1 Patient and Family Engagement  
  - 1.2 Team-Based Relationships  
  - 1.3 Population Management  
  - 1.4 Practice as a Community Partner  
  - 1.5 Coordinated Care Delivery  
  - 1.6 Organized, evidence-based care  
  - 1.7 Enhanced access
PRACTICE
SECONDARY DRIVERS: Telemedicine addresses

1.1 Patient and Family Engagement
- 1.1.1 Respect values and preferences:
  - Scheduling flexibility
  - Transportation
  - Family involvement
  - Comfort

1.2 Team-Based Relationships
- 1.2.1 Enhance teams:
  - Coordination with Specialists, Nursing facilities, Home health agencies
- 1.2.3 Optimize continuity:
  - Establish partnerships

1.5 Coordinated Care Delivery
- 1.5.2 Establish medical neighborhood roles:
  - Clear expectations
  - Established roles
  - Information sharing

1.6 Organized, evidence-based care
- 1.6.4 Decrease care gaps
- 1.6.5 Reduce unnecessary tests

1.7 Enhanced access
- 1.7.1 Provide 24/7 access
- 1.7.2 Meet patient scheduling needs
- 1.7.4 Mitigate access barriers

Sample workflows...
The most important aspect of a future virtual medical practice is its ability to:

A. Incorporate complete genomic data into its decision support tools
B. Exchange data and incorporate future technologies
C. Maximize the use of artificial intelligence
D. Support wearable devices that monitor biometric variables

The Connected Community
Do not create your virtual medical practice in isolation!

Incorporation of complete genomic (CG) data is coming!

The Future of Medical Practice

Virtual Medical Practice Model
Interoperability is the key
- The ability of systems to exchange and use electronic health information from other systems without special effort on the part of the user

Future of Virtual Medicine

- Genomics
  - Precision Medicine and deep genomics

- Nanotechnology
  - Portable medical devices

- Robotics
  - A future assistant in hospital systems applications

- Imaging
  - Molecular imaging
  - Ultrasound imaging
  - Ultrasound guided body visualization
  - Image assisted therapeutics

- Data
  - Artificial intelligence - "Cognitive assistant", deep learning, decision support
  - Data mining - that recognize subtle patterns of health status
  - Predictive modeling - that allow for preempted interventions
  - Personalized Medicine and Drug Design
  - Population Health Analysis and Management System
Conclusion

Virtual Medical Practice

- Telemedicine is a safe, significant and rapidly growing component of medical practice that improves quality, reduces healthcare costs, and increases patient satisfaction
- Future of medical practice is high tech, low touch i.e. virtual practice
- A virtual medical practice can be created by incorporating telemedicine and other software applications into an online medical practice
- Virtual medical practice can aid with meeting MACRA requirements in clinical practice transformation
- Virtual medical practice will allow for community wide connectivity
- Future virtual medicine will evolve to use rising technologies such as artificial intelligence, advanced scanning, monitoring and data analytics to create an efficient medical practice

Practice Recommendations

- Create a virtual medical practice that is in compliance with state regulations and payer requirements
- Take the lead, form an implementation team and create an implementation plan
- Align your virtual medical practice with MACRA and other standard practices
- Start small and scale up
- Choose systems that are interoperable and expandable with an eye to the future

Questions

Contact Information

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Additional telemedicine resources

- American Telemedicine Association: www.americantelemed.org
- Telehealth Resource Center: www.telehealthresourcecenter.org