Telehealth Projects

In September 2014, the Maryland Health Care Commission (MHCC) awarded three telehealth grants to study the impact of telehealth on improving the coordination of care between general acute care hospitals and comprehensive care facilities (CCFs). CCFs often do not have 24/7 access to primary and other health care services when needed, contributing to increased hospitalizations of CCF residents. Telehealth enables better coordinated care by virtually connecting a CCF with a physician and other support services.[1] Improved care coordination in an effort to reduce unnecessary hospital encounters is a central goal in Maryland, particularly in an environment of global budgets where hospitals are at financial risk for readmissions.

The grantees are implementing nine-month telehealth projects and will assess how the use of telehealth technology impacts hospital utilization. A total of $87,888 was awarded in grant funds, and a dollar for dollar match is required of each grantee. In addition to telehealth technology, the grantees are required to use a nationally certified electronic health record and services of the State-Designated Health Information Exchange, the Chesapeake Regional Information System for our Patients (CRISP). The work of the telehealth projects, including lessons learned and best practices, will inform telehealth activities more broadly in the State. The telehealth projects are scheduled for completion in the fall of 2015. A summary of each of the three projects and the current status is below:

Project Overview

1) Atlantic General Hospital (Atlantic General) is working in partnership with Berlin Nursing and Rehabilitation Center (Berlin) in Worcester County to provide remote care to Berlin residents through telehealth. The project will assess how the provision of preventative onsite care via telemedicine can reduce costs associated with a) transportation to and from Berlin and Atlantic General, and b) emergency room visits and hospital admissions/readmissions from Berlin to Atlantic General. The project will also assess patient satisfaction in regards to the use of telehealth.

2) Dimensions Healthcare System (Dimensions) is working in partnership with Sanctuary of Holy Cross (Sanctuary) in Prince George's County to provide care for Sanctuary residents via virtual consultations and remote monitoring. The project will assess how use of telehealth technology impacts hospital admissions, readmissions, and emergency department visits. The project will also assess the impact of using telehealth on patients' reported quality of life.

3) University of Maryland Upper Chesapeake Health (Upper Chesapeake) is working in partnership with Bel Air facility of Lorien Health Systems (Lorien) in Harford County to extend emergency medical management expertise to Lorien 24 hours a day. The project will assess how use of telehealth impacts emergency room visits, admissions, and readmissions between Lorien and acute care hospitals.

[1] Health Affairs, *Use of Telemedicine Can Reduce Hospitalizations of Nursing Home Residents and Generate Savings for Medicare*, February 2014.

Advancing Telehealth through Innovative Transitions of Care Symposium

Agenda

Wednesday, February 25, 2015
House Office Building, Room 180
6 Bladen Street, Annapolis, MD 21401
4:00PM – 7:00PM

I. INTRODUCTORY REMARKS *(5 minutes)*

Ben Steffen, *(Executive Director, MHCC)*

- *Role of MHCC in health information technology (health IT) and involvement in telehealth*
- *Maryland Telemedicine Task Force recommendations to advance telehealth adoption*
- *Initial telehealth projects on transitions of care between acute and post acute settings*

II. INTRODUCTORY SPEAKER *(15 minutes)*

Susan Lee, *Senator, Maryland State Senate*

III. OPENING SPEAKER *(10 minutes)*

H. Neal Reynolds, *Associate Professor of Medicine, University of Maryland School of Medicine*

- *Telehealth legislation in Maryland*
- *Overview of telehealth landscape nationally and locally*
- *Maryland Telemedicine Task Force recommendations for 10 telehealth use cases*

IV. TELEHEALTH PROJECT PARTICIPANTS:

University of Maryland Upper Chesapeake Health and Bel Air facility of Lorien Health Systems *(35 minutes)*

Fermin Barrueto Jr., *Regional Director and Chairman for the Department of Emergency Medicine, University of Maryland Upper Chesapeake Health*

J. Wayne Brannock, *Chief Operating Officer, Lorien Health Systems*

Colin Ward, *Vice President of Population Health and Clinical Integration, University of Maryland Upper Chesapeake Health*

- *Telehealth use in combination with enhanced laboratory and pharmacy capabilities*
- *Use of audio-video conferencing, remote monitoring to track vital signs, and ultrasound technology*
- *Impact of telehealth in averting three potential hospital admissions to date*

Dimensions Healthcare System and Sanctuary at Holy Cross *(35 minutes)*

Carnell Cooper, *Senior Vice President and Chief Medical Officer, Dimensions Healthcare System*

Leliveld Emeni, *Health IT Project Manager, Zane Networks, LLC*

Samaria Washington, *Administrator, Sanctuary at Holy Cross*

- *Use of telehealth to reduce emergency department visits and hospital admissions and readmissions*

- *Telehealth technology, including carts, tablets, and software that facilitates visit scheduling*
- *Workflow integration for telehealth consultation with emergency department before transfer to hospital and follow up after discharge, including initial patient feedback*

Atlantic General Hospital and Berlin Nursing and Rehabilitation Center *(35 minutes)*

Michelle Clifton, *Director of Clinical Operations, Atlantic General Health System*

Charles Gizara, *Director of Clinical Operations, Atlantic General Hospital*

Jennifer Light, *Patient Centered Medical Home Telemedicine Coordinator, Atlantic General Hospital*

- *Use of telehealth as part of pre-transfer protocols to reduce transfers to hospital*
- *Criteria and selection process for identifying telehealth technology*
- *Identifying appropriate hospital providers to render services using telehealth and policies for credentialing and malpractice insurance*

V. PROVIDER PRACTICE PERSPECTIVE *(10 minutes)*

Kerry Palakanis, *Family Nurse Practitioner, Crisfield Clinic*

- *Telehealth as an innovative intervention in Maryland primary care*
- *Telehealth integration within a small provider practice*
- *Opportunities to expand telehealth in school-based health centers; a 2014 Task Force recommendation*

VI. CLOSING SPEAKER *(15 minutes)*

Eric Aldrich, *Vice President of Medical Affairs, Howard County General Hospital*

- *Current role of telehealth in improving transitions of care*
- *Using telehealth to manage chronic health conditions*
- *Future of telehealth to improve care delivery*

VII. CLOSING REMARKS *(5 minutes)*

David Sharp, *(Director, Center for Health Information Technology & Innovative Care Delivery, MHCC)*

- *Diffusing health IT – successes and challenges*
- *On the horizon – additional telehealth pilots*

University of Maryland Upper Chesapeake Health and Bel Air facility of Lorien Health Systems

Fermin Barrueto Jr., MD is double-boarded in Emergency Medicine and Medical Toxicology. He is a Clinical Associate Professor for the University of Maryland School of Medicine Department of Emergency Medicine where he teaches the Toxicology curriculum for Emergency Medicine Residents. He is also Regional Director and Chairman for the Department of Emergency Medicine at the University of Maryland Upper Chesapeake Health, which is a two-hospital community system. Since 2008, the University of Maryland Upper Chesapeake Medical Center and the University of Maryland Harford Memorial Hospital are the two hospital Emergency Departments that he oversees. Dr. Barrueto has over 25 peer-reviewed publications and over 50 different textbook chapters. He has presented research from medical toxicology as well as Emergency Department operations both nationally and internationally. He has led various new population health initiatives, including assessing clinical variation among Emergency Medicine physicians, instituting a low risk chest pain protocol, and developing a highly effective high risk care plan program.

J. Wayne Brannock, CPHQ, CPHRM is the Chief Operating Officer of Lorien Health Systems. Lorien Health Systems is a for-profit, privately owned health care company serving approximately 1,400 lives in nine post-acute, comprehensive care and five assisted living facilities in Maryland. Prior to his 15 years with Lorien Health Systems, Wayne worked for 25 years in various capacities in long term care that included administration, risk management, and quality improvement. Wayne also has had an extensive career working in acute care in Maryland, Wisconsin, and Texas as a clinician, manager, educator, and department director in respiratory care, cardiology, and pulmonary diagnostics. Besides his education and training in nursing and respiratory care, Wayne holds international certification in health care quality and national certification in health care risk management.

Colin Ward, MHS is the Vice President of Population Health and Clinical Integration at University of Maryland Upper Chesapeake Health (UMUCH). In this role, he works with providers to improve the quality and coordination of care for residents of Harford County. Prior to his time at UMUCH, he served as the Executive Director of the Greater Baltimore Health Alliance, the first Medicare approved accountable care organization (ACO) in Maryland that includes a hospital partner. His responsibilities included provider recruitment, the development commercial and government insurance ACO agreements, care management programs, and information technology implementation within the ACO. Colin previously served as the Director of Corporate Strategy at Greater Baltimore Medical Center (GBMC), assisting with service line development and master facility planning. Prior to GBMC, he worked at LifeBridge Health as an Operations Consultant. Colin has a Bachelor of Arts degree from Mt. St. Mary's University and a Masters in Health Science from the Johns Hopkins University School of Public Health.

Reducing Unnecessary Hospital Utilization in CCF Population

University of Maryland–
Upper Chesapeake Health
Telehealth Program

1

Presenters

- Fermin Barrueto, M.D.
  - Chair Emergency Medicine, UM Upper Chesapeake Health
- J. Wayne Brannock
  - COO, Lorien Health Systems
- Colin Ward
  - Vice President, UM Upper Chesapeake Health

2

Project Participants

- University of Maryland Upper Chesapeake Health
  - Acute Care Hospital (ACH)
- Lorien Health Systems, Bel Air
  - Continuing Care Facility (CCF)
- Life Bot Inc.
  - Telehealth Technology Vendor
- Maryland Emergency Medicine Network

3

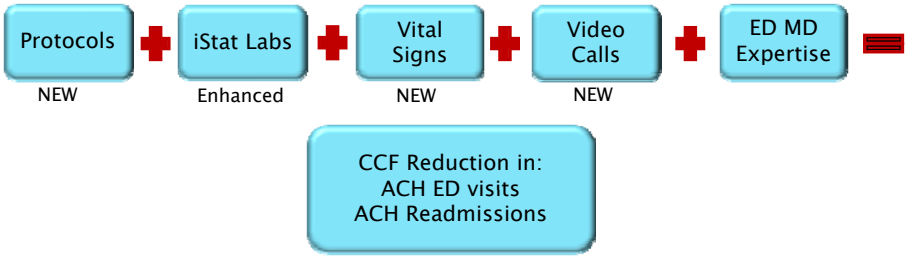
Overview

- Project, Objectives, Goals and Current Status
- Technology Demonstration & Clinical Enhancements
- Clinical Workflow Integration
- Challenges, Successes & Case Studies
- Key Takeaways

4

Project Overview and Goals

- Project
  - Pair Treatment Protocols and Technology with Emergency Management Expertise



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Clinical Measures

- Reduction in 30-day readmissions for all patients discharged from ACH to CCF

  Goal 25% reduction from 13.6% to 10.2%
- Reduction in ACH admission rate for all conditions for residents admitted from CCF

  Goal 25% reduction from 4.2 to 3.2
- Reduction in ED utilization from ambulance transfers from CCF to ACH

  Goal 25% reduction from 6.2 to 4.7
- Patient and family satisfaction/feedback

6

Current Status

- Program implemented 12/3/14 with on-going utilization
- Weekly Transfer and Utilization Reviews
- Monthly Medical Team Reviews
- Medical Director and Attending MD meetings

7

Technology Demonstration & Clinical

8

New Lorien Capabilities due to LifeBot

- ePCR Electronic Patient Call Report
- ECG 12 Lead
- Peripheral Pulse
- Pulse Oximeter
- Respirations
- End Tidal CO2
- Two Temperatures
- NIBP and Mean BP
- Heart Rate
- Ultra Sound

9

New Lorien Testing and Clinical Enhancements

- Expanded Clinical Expertise of CCF
  - Point of service labs
  - Stat X-Rays
  - IV Med/Fluids/Antibiotics
  - PICC Insertion/Management
  - Isolation
  - Surgical Drain Management
  - Tracheostomy Management
  - Vapotherm
  - Q-Ball
  - Central Line Management
  - SCDs
  - SBAR Communication

10

New Lorien Lab Capabilities

- Point of Service Lab
  - WBC
  - Hb
  - Hct
  - Chem 7
  - INR
  - Routine UA

11

Updated Lorien IV Inventory

- 0.9% Normal Saline 1000 ml
- 0.9% Normal Saline 250 ml
- 0.9% Normal Saline 50 ml
- D5W 1000 ml
- D50 50 ml
- Normal Saline Flushes 100 ml
- Heparin Flush 10 units/ml
- Dextrose 5% +.45% Normal Saline
- Dextrose 5% with 20 KCL
- Dextrose 5% +.45%NS with 20 KCL
- 0.9% Normal Saline with 20KCL
- Dextrose 5% with 40kcl
- Dextrose 5% + 0.45% NS with 40KCL
- 0.9% Normal Saline with 40KCL

12

Lorien– UCMC Matching Medication Options

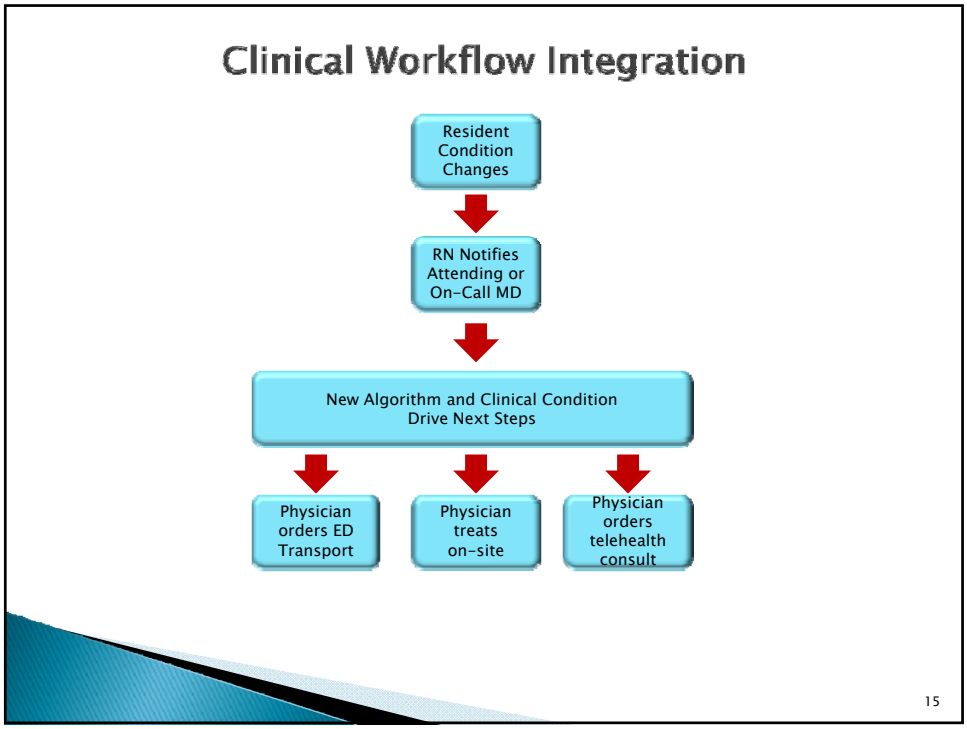
- Emergency Medication Box
  - Aspirin 81mg Chewable
  - Dextrose 50% injection
  - Atropine 1mg/ml injection
  - Heparin 10,0000 units/ml injection
  - Diphenhydramine 50mg/ml injection
  - Epinephrine1:1000 (1mg/ml) injection
  - Furosemide 10mg/ml 4ml injection
  - Intaglucose/ Glutose 15
  - Nitorquick (nitroglycerin)0.4mg tab
  - Vitamin K injection 10mg/ml
  - Naloxone (narcan) 0.4mg/ml injection
  - Ativan Injection
  - Vancomycin IV
  - Ancef 1 gm
  - Levaquin IV
  - Rocephin IV
  - Levaquin IV
  - Zithromax IV
  - Clindamycin IV
  - Unasyn IV
  - Zoysn
  - Decadron IV
  - Haldol
  - Albuterol
  - Atrovent

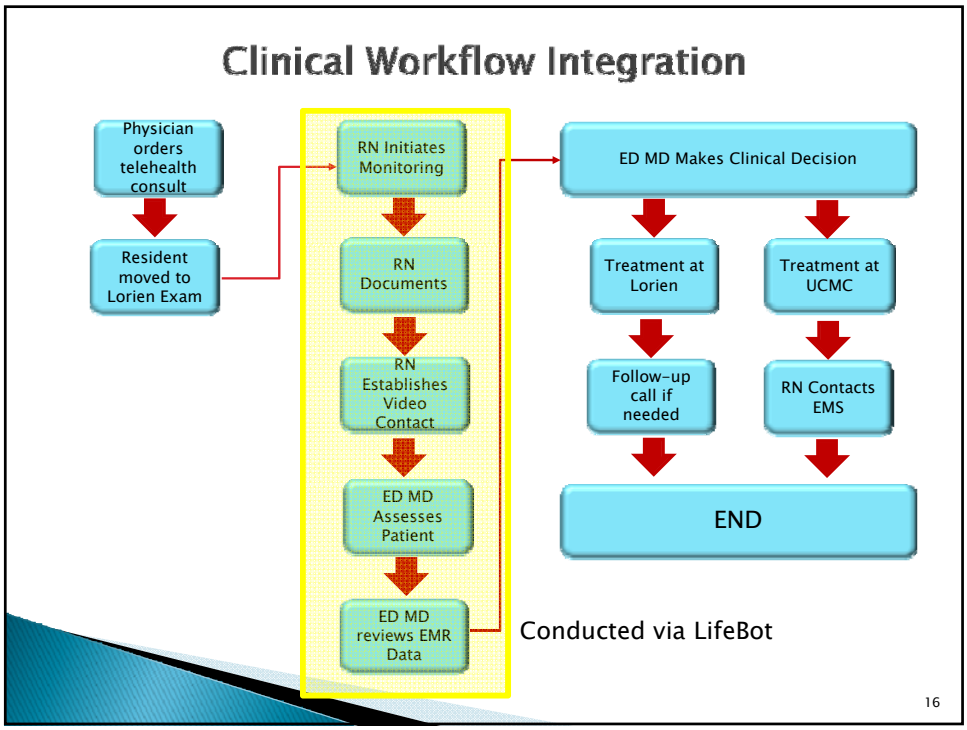
13

Supporting Clinical Information

- Electronic Medical Record Access
  - CRISP (Health Information Exchange)
  - Millennium (Electronic Medical Record)
  - Point Click Care (EMR)

14


Clinical Workflow Integration
Resident Condition Changes
RN Notifies Attending or On-Call MD
New Algorithm and Clinical Condition Drive Next Steps
Physician orders ED Transport
Physician treats on-site
Physician orders telehealth consult
15


Clinical Workflow Integration
Physician orders telehealth consult
Resident moved to Lorien Exam
RN Initiates Monitoring
RN Documents
RN Establishes Video Contact
ED MD Assesses Patient
ED MD reviews EMR Data
ED MD Makes Clinical Decision
Treatment at Lorien
Treatment at UCMC
Follow-up call if needed
RN Contacts EMS
END
Conducted via LifeBot
16

Clinical Workflow Integration

- Collaboration in developing clinical algorithms
- Ongoing Education of Bel Air Attending and On-Call physicians
- Ongoing Education of ED physicians on command center, tablet consultations and Lorien capabilities

17

Program Successes

- Secured Medical Malpractice Insurance for ACH ED Physicians
- Addressed consultation reimbursement
- CCF clinical enhancements including laboratory
- Utilization of CRISP
- Additional LifeBot enhancements under development including stethoscope
- Successfully avoided hospital activity for multiple patients (preventable admissions)

18

Program Success Continued

- Avoided 14 costly & time consuming ED transfer steps

- Nurse calls on-call physician
- Nurse calls family/responsible party
- Nurse call for transportation
- Nurse gathers documentation to be sent
- Nurse staff prepares patient for transfer
- Nurse documents the transfer
- Ambulance arrives for transfer
- Patient transported to ED $
- ED triages and registers patient
- ED nurse and physician assessment of patient
- Labs complete $
- EKG complete $
- X-Ray complete $
- WAIT

- *Documentation and billing requirements at every step of the way

19

Program Challenges

- On-going consultation reimbursement
- Telehealth equipment costs
- Managing patient panels for ENS

20

Case Study One

- Change in Condition:
  - Complaints of nausea and general sickness, finger stick 77 which did not increase with interventions of glucose gel and glucagon
- Diagnosis:
  - Hypoglycemia
- Telehealth Evaluation:
  - IV insertion, monitoring of BP and Pulse Ox, visual exam
- Treatment:
  - IV push of D50, finger sticks
- Outcome:
  - Finger stick 225 after one hour, patient returned to room.

21

Case Study Two

- Change in Condition:
  - Lethargic, poor p.o. intake
- Diagnosis:
  - Chronic c-diff, CVA, HTN
- Telehealth Evaluation:
  - Monitoring of ECG, BP, Pulse Ox, visual exam
- Treatment:
  - Attempted IV access but unable, lab WBC 5.9, IV in room for 1 liter and lab work since unable to get access
- Outcome:
  - Seen by attending physician and returned to room.

22

Case Study Three

- Change in Condition:
  - Received abnormal lab potassium 6.7
- Diagnosis:
  - CABG x 3, diabetic, acute on chronic renal failure
- Telehealth Evaluation:
  - Monitoring of ECG, BP, lab Chem profile
- Treatment:
  - Kayexalte, 500 cc of saline and repeated labs
- Outcome:
  - Patient returned to room and discharged to home 7 days later

23

Key Takeaways

- Physician education – EDs, On-Calls, Attending's
- Supporting Clinical Capabilities (Lab/ RX)
- Need for reimbursement
- Regulatory considerations – i.e. Assisted Living

24


Questions?
25

University of Maryland Emergency Medicine

About Us

Whatever professional experience you're looking for, you can find it here, all backed by the support and prestige of the University of Maryland.

Originally serving the faculty practices associated with the University of Maryland School of Medicine, our network expanded in 1998 to meet the emergency service needs of community hospitals in the state of Maryland. Our hospitals in the heart of downtown Baltimore offer physicians with an academic focus the opportunity to practice in a busy urban environment, while our locations in communities throughout the state (see map on opposite side) offer a more traditional community practice setting.

Coupled with state-of-the-art technology and cutting-edge academic resources available to us as part of the University of Maryland School of Medicine, we offer comprehensive training and opportunities for advancement in emergency medicine.

Brian J. Browne, MD
Professor and Chairman,
Department of Emergency Medicine,
University of Maryland School of Medicine
President & CEO,
Maryland Emergency Medicine Network

Facility	Annual Volume
University of MD Medical Center	60,000
Bon Secours Hospital	25,000
Mercy Medical Center	55,000
UMMC Midtown Campus	38,000
Baltimore VA Medical Center	32,000
Memorial Hospital at Easton	36,500
Dorchester General Hospital	22,000
Queen Anne's Emergency Center	15,000
Shore Medical Center, Chestertown	16,500
University of Maryland Upper Chesapeake Medical Center	65,000
University of Maryland Harford Memorial Hospital	34,000
	55,000
Prince George's Hospital Center	32,000
Laurel Regional Hospital	32,000
Bowie Health Campus	

University of Maryland Emergency Medicine
110 S Paca Street, 6th Floor, Suite 200
Baltimore, MD 21201

recruitment@umem.org 410.328.8025

Dimensions Healthcare System and Sanctuary at Holy Cross

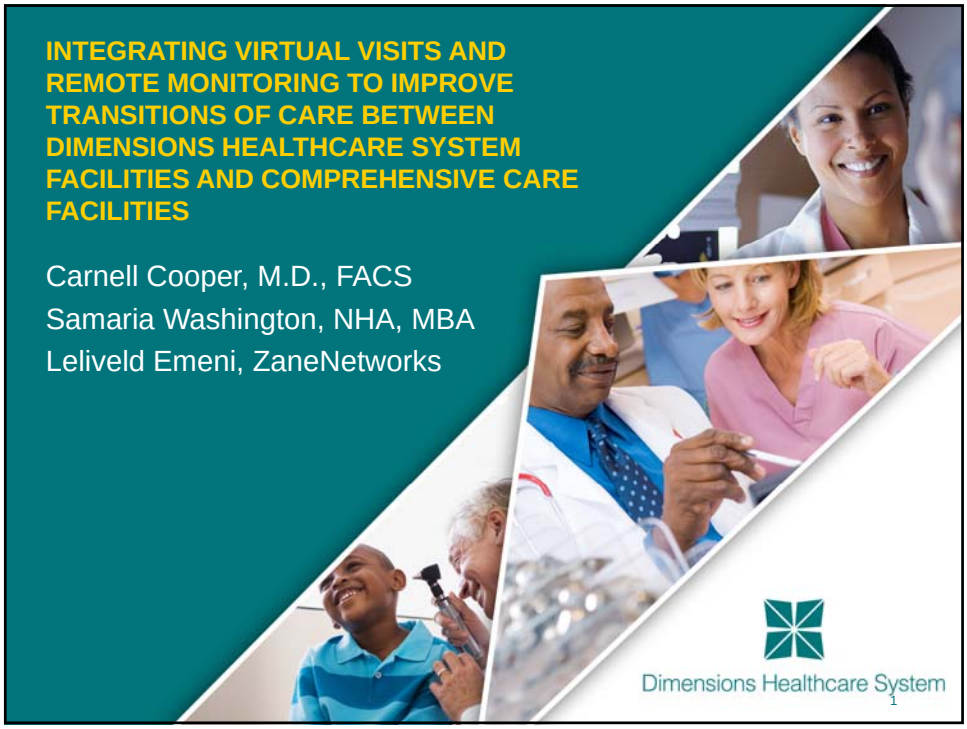
Carnell Cooper, MD, FACS is the Senior Vice President and Chief Medical Officer for Dimensions Healthcare System; Vice President of Medical Affairs for Prince George's Hospital Center and a Clinical Associate Professor of Surgery, University of Maryland and Shock Trauma Center. Dr. Cooper is also the Lead Physician Adviser for the telehealth project. In this capacity, he conducts virtual consults with Sanctuary providers, provides consultation to the Technical Manager to increase the effectiveness of the use of telehealth technology and redesign of clinical processes, as well as oversees the physician adviser assigned to the Case Management Department and other Dimensions Healthcare System hospitalists.

Leliveld Emeni, CPHIMS, PCMH CEC is Technical Manager for the telehealth project. Mr. Emeni is a ZaneNet Health Information Technology project manager with extensive knowledge and experience in the field of Health Informatics. As a Certified Professional in Health Information Management Systems, Mr. Emeni is adept at managing and implementing complex information systems. He has worked extensively across the State of Maryland to help providers improve quality of care by effectively using health care technology, adopting electronic health records (EHRs), and achieving Meaningful Use. As a certified Patient Centered Medical Home Content Expert, Mr. Emeni has also worked with larger health systems to implement the Patient Centered Medical System of Care. These efforts involved workflow optimization and advanced EHR training. Mr. Emeni is responsible for the technical direction of the telehealth project, including handling negotiations with the telehealth vendor and ensuring that providers are fully trained on using the telehealth technology.

Samaria Washington, MBA, NHA has been a licensed nursing home administrator for more than nine years and has served as administrator at Sanctuary at Holy Cross for the past three years. Ms. Washington is also a member of the Board of Directors for the Beacon Institute and is presently Chair Elect. She is an approved educator for the State of Maryland Assisted Living Manager 80 hour course. Ms. Washington earned her Bachelor of Science in Healthcare Administration and her Masters in Business Administration at Washington Adventist University and is currently working toward her Doctorate of Business Administration with a specialization in Healthcare Administration with an anticipated graduation date of Fall 2015. Ms. Washington is serving as the Facility Project Liaison. In this capacity, Ms. Washington coordinates Sanctuary's activities relative to the telehealth project and ensures the engagement and cooperation of Sanctuary providers and staff with project operations.

INTEGRATING VIRTUAL VISITS AND REMOTE MONITORING TO IMPROVE TRANSITIONS OF CARE BETWEEN DIMENSIONS HEALTHCARE SYSTEM FACILITIES AND COMPREHENSIVE CARE FACILITIES

Carnell Cooper, M.D., FACS
Samaria Washington, NHA, MBA
Leliveld Emeni, ZaneNetworks



Dimensions Healthcare System

1

Participating Partners

Dimensions Healthcare System

2

Dimensions Healthcare System

- Integrated, not-for-profit healthcare system in Prince George's County, Maryland
- Largest provider of healthcare services in Prince George's County
- Serving approximately 180,000 patients annually
- Partnered with University of Maryland Medical System, the State of Maryland, Prince George's County and the University System of Maryland – to achieve the goal of transforming healthcare in the region

SANCTUARY AT HOLY CROSS
A Trinity Senior Living Community

Enriching THE LIVES OF SENIORS

- Faith-based community offering several living options and services, including:
- **Sanctuary™ Nursing Care** residences offer compassionate, sensitive care to seniors who require significant assistance with activities of daily living
- **Sanctuary™ Rehabilitation and Wellness** was created to cultivate wellness for body, mind and spirit — helping short-stay guests stabilize, rehabilitate and return to normal activities

UNIVERSITY of MARYLAND
SCHOOL OF MEDICINE

DEPARTMENT OF EMERGENCY MEDICINE

Maryland Emergency Medicine Network

- National leader in academic and community-based emergency medicine
- Affiliated with the University of Maryland Medical System
- Manages the emergency departments in 14 locations throughout the state of Maryland

Dimensions Healthcare System 5

ZaneNet
Expect Excellence

- ***Mission:*** To serve public and private entities by solving complex problems using innovative technologies in the areas of health information technologies (HIT), unified communications and collaborative technologies (including voice, data and video conferencing), medical staffing and print and online health communications

Clients:

- **Certified 8(a) Company and Small and Woman-Owned Disadvantaged Business (SDB)**
- **Maryland MBE Certified woman owned SBD registered in the District of Columbia**
- **Accreditation by the Maryland Health Care Commission to serve as a Management Service Organization (MSO)**
- **Certified Professionals in Health Information Technology (CPHIT)**
- **Clinical Implementation Specialists and Project Management Professionals**
- **Writers, Editors & Graphic Designers**
- **VTC Engineers and Technicians**

Dimensions Healthcare System 6

Objectives

- Reduce Readmissions
  - Effective Post-Discharge Transfer
  - Periodic Post-Discharge Follow-up
  - Provider to Provider Consults
- Reduce Unnecessary Emergency Department Visits
- Reduce Unnecessary Hospital Admissions/Reduce Hospital Stay
- Improve Patient Experience

Dimensions Healthcare System 7

TELEHEALTH PROCESSES

Dimensions Healthcare System 8

Post Discharge Follow-Up

- Provider to Provider Consult
  - Physician Advisors
  - Case Management
  - Nursing Facility Staff (M.D./R.N.)
- Patient Interview
- Effective Transfer
  - Patient Status
  - Review of Discharge Instructions
  - Review of Prescriptions/Medications
  - Review of Overall Care Plan
- Scheduled Periodic Follow-Up (as appropriate)

Emergency Department Consults

- Change in Resident Condition Requires Physician Intervention
- Nursing Facility Physician (e.g. On Call) orders Emergency Department (ED) Consult
- Pre-Assessment and Preparation for E-Consult
- Nursing Facility contacts Dimensions “One Call”

Emergency Department Consults

- One Call coordinates consultation
- ED Provider reviews info and interviews patient
- ED Physician makes recommendations and notifies Nurse at facility
  - On site intervention(s) and treatment
  - Transport to ED
- Nurse communicates ED recommendations to On-Call Physician
- On-Call Physician orders Interventions/ Transport

Dimensions Healthcare System 11

TELEHEALTH TOOLS

Dimensions Healthcare System 12

Hardware

Computer Hardware

- Surface Pro 3 Tablets and IPADs were considered as hardware options
- Surface Pro 3 Tablet was selected because it provides full widows desktop capabilities along with the versatility of a tablet
- Surface Pro 3 USB port can support future integration of devices (stethoscope, examination camera, BP cuff, etc.)

Hardware: JACO Carts

- The JACO Cart was chosen for mobility and ease of use for end users
- The Surface Pro 3 tablets can be mounted to the JACO carts, providing greater security for the hardware
- With the JACO Cart clinicians can easily navigate between patients rooms to conduct telehealth visits

Dimensions Healthcare System 15

Software: HouseCall

- HouseCall created by ZaneNetworks, a Maryland State Designated Management Service Organization credited through ENHAC
- HouseCall is a cloud-based software service, hosted in a HIPAA certified data center
- Telehealth Calls are encrypted and sent through the internet, securely
- HouseCall is provider-centered and supports provider-to-provider video conferencing
- ZaneNetworks currently developing direct integration to allow providers to send Direct Messages with documents using HouseCall

Dimensions Healthcare System 16

CRISP ENS and Direct Messaging

- CRISP - the Maryland Health Information Exchange - is leveraged for the project to facilitate data-related transition of care
- ENS is used to monitor patient readmissions at hospitals outside of the Dimensions network
- The CRISP query portal allows both facilities to view and download any information available from patient visits at local hospitals
- CRISP Direct Messaging is used to collaborate and share information between facilities
- SBAR communications are sent directly via the secure CRISP HISP

Demonstration

Video Demonstration

Dimensions Healthcare System 19

CHALLENGES & SUCCESSES

Dimensions Healthcare System 20

Key Challenges

The Challenge

- Coordination between Organizations
- Technology Infrastructure
  - Procurement
  - Deployment
  - Training
  - CRISP
- Viability
  - Reimbursement
  - ROI
- Risk Management
  - Malpractice
  - Provider Mindset

The Solution

- Project management facilitated collaboration & communication
- Technical expertise provided critical advice & support
- Quantifiable benefits show project value (consistent with population health and GBR goals)
- Reimbursement would allow alignment of quality and business objectives
- Demonstrable value outweighs identified risks

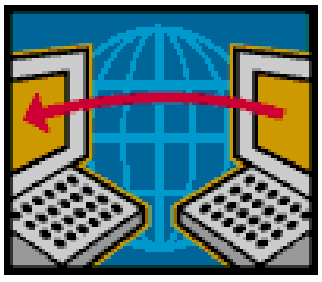
Key Successes

- Effective Team Established
- Timely Implementation and Deployment
- Initial Positive Feedback
- Interest from Additional Nursing Facilities

The Future

- Clear reimbursement reform will ensure viability and sustainability
- Expanded communication between facilities to timely manage patient care
- Consults to ambulatory care sites to address emergent/critical concerns and facilitate transfers to higher level of care
- Subspecialty consults to ambulatory providers
- Provider/patient consults (“HouseCalls”) to manage high risk patients and reduce hospital visits

Questions



Integrating Virtual Visits to Improve Transitions of Care Between Dimensions Healthcare System and Comprehensive Care Facilities

Dimensions Healthcare System

The Telehealth Project

Coordination to Improve Transitions of Care

Dimensions Healthcare System (DHS), an integrated, not-for-profit healthcare system serving residents of Prince George's County, Maryland and surrounding areas, has partnered with Sanctuary at Holy Cross, a comprehensive care facility(CCF) in Burtonsville, MD, JACO, a telehealth technology vendor, University of Maryland Department of Medicine Maryland Emergency Medicine Network, Zane Networks, a State-Designated management service organization (MSO); and the Chesapeake Regional Information System for our Patients (CRISP) the State-designated health information exchange (HIE), to improve care transitions and reduce unnecessary hospital visits for Medicare, Medicaid and dually eligible patients residing at the comprehensive care facility.

How the Project Works

Reducing Readmissions and Hospital Stays

There are essentially two scenarios by which patients may enroll in the project. The first involves Sanctuary patients (Medicaid, Medicare or dually eligible beneficiaries) who have already been admitted to either of the two participating DHS facilities.

Patients discharged to Sanctuary are tracked to reduce risk for readmission. Targeted patients complete the informed consent process and enroll in the project. Within 24 – 48 hours post-discharge to Sanctuary, a telehealth consult and follow up is scheduled with the patient's Sanctuary provider. The purpose of this interaction is to ensure that Sanctuary has received and is prepared to adhere to the patient's discharge plan and to resolve any questions that Sanctuary may have relative to the plan.

Program Goal

The proposed project will demonstrate that the integration of virtual visits with remote monitoring can improve transitions of care between two DHS facilities (Prince George's Hospital Center and Laurel Regional Hospital) and the Sanctuary CFF.

Objectives

- **Reduce Readmissions**
- **Reduce Unnecessary Emergency Department Visits**
- **Reduce Unnecessary Hospital Admissions**
- **Reduce Hospital Stay**
- **Improve Patient Experience**

The second patient enrollment scenario involves Sanctuary patients (Medicaid, Medicare or dually eligible beneficiaries) who have not been admitted to a hospital and who appear to be at risk for hospital admission/ emergency department care. In this instance, the Sanctuary provider will contact the project's DHS Emergency Department Liaison who will conduct a video consult of the patient and advise Sanctuary on what measures to take to prevent hospital admission/ an emergency department visit. If hospital admission/ an emergency department visit is successfully averted, then the Physician Advisor will follow up with the Sanctuary provider on a periodic basis until the patient's risk for hospital admission declines.

The exchange between the providers at the Hospital and Sanctuary occurs using a JACO mobile cart with tablet computing that supports video consultation and can be upgraded as needed. The cart renders video consultation more accessible as it may be rolled into residents' rooms to permit video consults with DHS providers. The tablet computer is connected to the Internet and thus enables providers to review patient charts and notes via the CRISP on-line portal. The JACO telehealth consult mobile carts will be equipped with "HouseCall" the telehealth consult web-based patient record software developed by ZaneNetworks that facilitates both live and deferred telemedicine consultations between DHS physicians and Sanctuary providers. Each participating DHS and CCF facility is equipped with a JACO mobile cart with tablet computing that supports video consultation.

For Additional Information Contact;
Dr. Carnell Cooper, Chief Medical Officer, Dimensions Healthcare System
3001 Hospital Drive, Cheverly, MD 20785 (301) 618-3550

Program Partners

ZaneNet
Expect Excellence

SANCTUARY AT HOLY CROSS
A Trinity Senior Living Community

University of Maryland School of Medicine
DEPARTMENT OF EMERGENCY MEDICINE

Dimensions Healthcare System

Atlantic General Hospital and Berlin Nursing and Rehabilitation Center

Michelle Clifton, BSN, RN has been in the field of nursing for over 20 years. Her diverse experience includes: Medical Surgical, Emergency Department, Nursing Supervisor, Employee Health, and Physicians Office Nursing. As a nursing leader she has developed a Forensic Nurse Examiner Program, Safe Patient Lifting Program, and provided the Forensic Nurse Examiner services for a new Child Advocacy Center in Worcester County. She most recently directed the Patient Centered Medical Home (PCMH) transformation for Atlantic General Hospital's (AGH's) primary care practices. Michelle currently is the Director of Clinical Operations overseeing AGH's network of more than 15 outpatient physician offices, walk-in clinics, and its Diabetes Education Program. She serves as the Project Director for AGH's PCMH project, including the management of the program's over $1 million, Healthcare Innovation Award from the Centers for Medicare & Medicaid Services.

Charles Gizara, MS, BSN, RN, CCM is the Director of Clinical Operations at Atlantic General Hospital (Acute Care) and works closely with health care providers, regulatory agencies, community providers, and insurance carriers to address topics which impact the delivery of health care in the hospital setting and in the community. A Registered Nurse with a Master's Degree in Health Care Administration, Charles has over 20 years experience in the health care field and has worked in many environments including: CareFirst Blue Cross Blue Shield of Maryland, IPA networks in Western Maryland, Case Management /Utilization Review, Clinical Nursing in hospitals located throughout Baltimore, the Eastern Shore of Maryland, and Delaware. In addition, he is an active member of the American Case Management Association of America.

Jennifer Light, RN is the Patient Centered Medical Home (PCMH) Telemedicine Coordinator. She is a 2004 graduate of Beebe School of Nursing and comes to Atlantic General Hospital with a rich background in Emergency Nursing. She holds various roles, such as Charge RN, Lead RN for a free standing emergency room, and nurse preceptor. She also participated on the clinical ladder team where she was the Trauma Nurse Liaison. Jennifer has been with Atlantic General Hospital for more than two years. She is responsible for the day to day operations of the Patient Centered Medical Home (PCMH) program. She oversees the Vaccine for Children program and developed the vaccine emergency response plan. Jennifer's biggest interest is implementing a Telemedicine Program within Atlantic General Health System and PCMH program. Through a significant amount of self-study and research, she is dedicated to providing access to quality care for the community.

Atlantic General Hospital
Telehealth Project

A collaborative effort between Atlantic General Hospital and Berlin Nursing & Rehabilitation Center with the focus of implementing telehealth services to prevent avoidable transfers, readmissions, and to improve patient outcomes.

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BERLIN NURSING & REHABILITATION CENTER

1

Presenters

Atlantic General Hospital:

Michelle Clifton, BSN, RN – Director of Clinical Operations for Atlantic General Health System

Charles Gizara, MS, BSN, RN, CCM – Director of Clinical Operations for Atlantic General Hospital

Jennifer Light, RN – Telemedicine Coordinator

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BERLIN NURSING & REHABILITATION CENTER

2

History

Demographics

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Atlantic General Hospital

- Located in Worcester County, MD
- Founded in 1993
- 62 bed acute care hospital
- 7 primary care offices located in MD and DE
- Patient Centered Medical Home
- 2 Atlantic ImediaCare walk-in clinics

Acute Care Services:
- 19 bed ER
- General surgery
- Medical surgical services
- 8 bed ICU

Hospitalists program:
- 9 physicians
- 3 mid-level providers

3

Vision

ATLANTIC GENERAL HOSPITAL
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Atlantic General Hospital

4

History

Demographics

Berlin Nursing and Rehab Center

- Founded in 1981
- Restructure – Mid-Atlantic Health Care 1983
- Services:
  - 63 long term care beds
  - 38 short term rehab beds
  - 35 certified Alzheimer /dementia beds
  - 12 bed ventilator / pulmonary care unit
- Average daily census of 137
- Rated 5 star facility by CMS rating system

5

Project Goals

- Acquire and operationalize telemedicine equipment for achieving the objectives.
- Develop connectivity and interfaces between BNRC and AGH for secure telecommunication and two-way sharing of electronic health information.
- Development of Coordinated Care Plans for Disease Management for BNRC residents.
- Develop patient / family and caregiver satisfaction and feedback survey instrument for patients receiving care via telemedicine at BNRC and those providing the care.

6

Clinical Goals

- Reduce all inpatient admissions from BNRC to AGH.
  Goal 13%
- Reduce all transfers from BNRC to AGH.
  Goal 16%
- Identification of LACE scores for patients discharged from AGH to BNRC compared with those who are readmitted within 30 days.
  TBD
- Utilize telemedicine physician consultations as part of pre-transfer protocols.
  Goal 100%
- Reduce readmissions from BNRC to AGH for patients initially discharged from AGH.
  Goal 53%

7

Stakeholders (AGH)

Concept to Implementation

Hospital-Based Stakeholders

1. Senior Leadership
2. I.S.
3. Hospitalists
4. Credentialing
5. Med records / billing
6. Corporate compliance
7. Legal
8. Education /marketing
9. Malpractice carrier

8

Stakeholders (BNRC)

Concept to Implementation

Nursing-Home Based Stakeholders

1. Corporate Offices
2. Administration
3. I.S.
4. Medical staff
5. Nursing staff
6. Credentialing
7. Med records / billing
8. Education /marketing

9

Project Status

Project Timeline / Template

TASK NAME	*Date* --
TO BE COMPLETED BY SECOND WEEK OF FEBRUARY 2015	
Develop telemedicine consent and orientation for patients and families	Due 2/1/2015
Evaluate Corporate Compliance / Med Record implications	
Assess documentation, billing and auditng guidelines	
Finalize careplan / care mapping for key conditions - send for approval	
Develop satisfaction survey instruments / processes	Noreen, Hospitalists, Terry Dukes
Develop policy / procedure for telehealth services	Jen Light, Chuck, Noreen, Terry Dukes
Develop billing guidelines (skilled vs. non-skilled) and forms	Noreen / Bonnie McLean
Develop medical record documentation forms	Lynee Snyder / Noreen
Develop training schedule for medical / clinical staff	Jen light, Noreen Terry Dukes
AGH credentialing of hospitalists	Stefanie Morris
BNRC credentialing of hospitalists	Terry Dukes
Provide list of Hospitalist rendering telehealth services to BNRC	Noreen

10

Care Integration

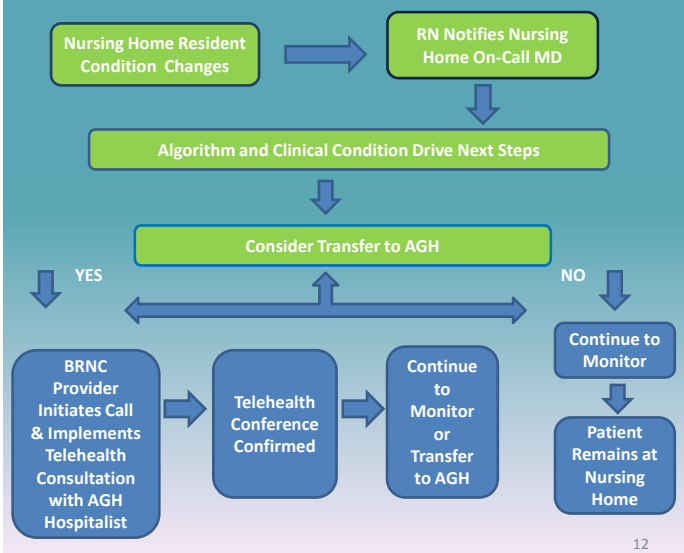
Hospital / Nursing Home Collaboration

- Existing monthly clinical meetings.
- Initiated weekly team meetings.
- Patient Centered Medical Home integration.

11

Clinical Algorithm

Clinical Algorithm



12

Video-Demo

13

Challenges

- Identifying the most appropriate providers to render services.
- Physician engagement – hospital and nursing home providers.
- Dashboard Metrics – manual data collection versus automated.
- Coordinating meetings / training to meet physician needs.

14

Successes

- Community partnership.
- Multidisciplinary approach to achieve goals.
- Patient focused interventions.
- Enhanced awareness of readmission efforts across both organizations.

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LACE Tool

Ottawa Hospital Research Institute
LACE Index Scoring Tool for Risk Assessment of Death and Readmission

Step 1. Length of Stay
Length of stay (including day of admission and discharge): _____ days

Length of stay (days)	Score (circle as appropriate)
1	1
2	2
3	3
4-6	4
7-13	5
14 or more	7

L

Step 2. Acuity of Admission
Was the patient admitted to hospital via the emergency department?
If yes, enter "3" in Box A, otherwise enter "0" in Box A

A

Step 3. Co-morbidities

Condition (definitions and notes on reverse)	Score (circle as appropriate)
CVA	+1
Uncontrolled diabetes	+1
Peripheral vascular disease	+1
Previous M.I.	+1
CHF/COPD	+2
Pneumonia	+2
Dementia	+2
Cancer	+2
Attempted Suicide / overdose	+3
Alcohol abuse	+3
Moderate liver disease	+4
Re-admission within 30 days	+4
Metastatic disease	+6
TOTAL	

C

Step 4. Emergency department visits
How many times has the patient visited an emergency department in the six months prior to admission (not including the emergency department visit immediately preceding the current admission)?
Enter this number or 4 (whichever is smaller) in Box E

E

Add numbers in Box L, Box A, Box C, Box E to generate LACE score and enter into box below. If the patient has a LACE score that is greater than or equal to 10, the patient will be referred to PCMH and/or community based resources post discharge.

LACE

Patient Survey

Atlantic General Hospital / Berlin Nursing and Rehabilitation
Telehealth Patient Satisfaction Survey

Your feedback helps us to continuously improve the services we provide. Thank you for taking the time to complete this survey and for participating in our telehealth program.

Instructions:
Listed below are a number of questions about your recent telehealth experience. Please answer each question by marking the box that **best indicates** your opinion.

Rating Scale: A = Agree
B = Neutral
D = Disagree

	A	N	D
I received an explanation of why the equipment was being used.	☐	☐	☐
I was able to communicate adequately with the specialist during the telehealth visit.	☐	☐	☐
My privacy and confidentiality were respected and protected during the consultation.	☐	☐	☐
I was confident with the telehealth exam that was performed.	☐	☐	☐
The nurse was very helpful during the telehealth visit.	☐	☐	☐
I am confident that the telehealth visit was helpful in managing my care.	☐	☐	☐
The next time I would prefer to see the specialist "in person"	☐	☐	☐

Additional comments:

_____

_____

Thank you for taking the time to complete this survey. Please return this form to Terry Dukes at Berlin Rehabilitation and Nursing Center.

Patient's Name_____

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Provider Survey

Atlantic General Hospital / Berlin Nursing and Rehabilitation

Telehealth Provider Survey

Please complete each time telemedicine is utilized for patient care. Send completed forms to Chuck Gizara at Atlantic General Hospital via FAX (410) 641-9277.

DATE OF SERVICE: _____**TIME OF SERVICE:** _____

PATIENT LAST NAME: _____

Check all modalities uses during this encounter:

___ Telephone conference ___ Telemedicine Equipment ___ Exam camera ___ Stethoscope

Rating Scale: **A= Agree**
N= Neutral
D= Disagree

	A	N	D
1. Equipment check above worked properly.	☐	☐	☐
2. Telehealth equipment was easy to use.	☐	☐	☐
3. I had adequate access to this patient's records/ test results.	☐	☐	☐
4. I was able to communicate adequately with the patient.	☐	☐	☐
5. The tools adequately supported my examination.	☐	☐	☐
6. I felt the privacy of the session was respected.	☐	☐	☐
7. I felt the patient was satisfied with the encounter.	☐	☐	☐
8. Overall, I was satisfied with today's encounter.	☐	☐	☐

Additional thoughts:

_____

_____

_____

RN / Physician Last Name:_____

PATIENT DISPOSITON: ___ Remained at Nursing Home ___Sent to Emergency Department

18

Open Forum

Questions / Open Forum

19

The Global Budget Revenue Model

As part of the new strategic plan, AGH is adopting a **Global Budget Revenue Model** as developed by the state of Maryland's Health Services Cost Review Commission.

- Under this model, our revenue is fixed each year based on AGH's previously approved budget and revenue history.
- To ensure financial health under this model, we will embrace and implement strategies and tactics that support the three key aims of healthcare:
  - Improve the health of the population
  - Enhance the patient care experience
  - Reduce the cost of care

Our strategic priorities will ensure the success and financial well-being of AGH in our mission to provide access to quality care, personalized service and education to improve individual and community health in our region.

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2015-2020
STRATEGIC PLAN OVERVIEW

2020 Vision: The Right Path to Good Health

care.coordination

2020 Vision: Care Coordination

The U.S. healthcare industry continues to face unprecedented uncertainty as fundamental reforms are implemented:

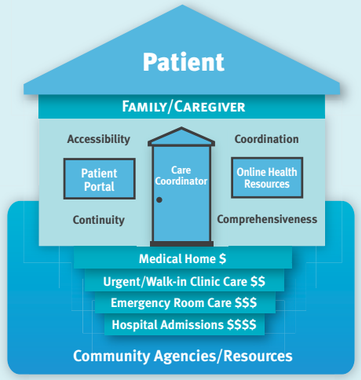
- **The Patient Protection & Affordable Care Act**
- **Maryland's new healthcare financing model for hospitals**

The goals behind the initiatives are praiseworthy:

- **Improve the health of the population**
- **Enhance the patient care experience**
- **Reduce the cost of care**

Achieving this triple aim is a challenge, as there are many unresolved questions about their implementation. Our new 2015-2020 Strategic Plan is designed to get us there.

ATLANTIC GENERAL HOSPITAL
Patient-Centered Medical Home Model



The Medical Home Model combines patient-focused principles with the integration of clinical professionals and IT under the supervision of primary care physicians. It has been the focus of our planning efforts up to now – and is the basis for the new strategic plan as well.

Where We've Been

Atlantic General Hospital's previous five-year strategic plan helped us achieve many notable accomplishments, including:

- Implementing better service and more convenience for our patients and for the community:
  - **30-Minute ER Promise**
  - **Atlantic ImmediCare clinics**
  - **Patient-Centered Medical Home model**
  - **RediScripts pharmacy**
- Implementing the Health Literacy project in the Worcester County Public Schools and through faith-based initiatives with local spiritual leaders
- Implementing an integrated electronic health record system across the entire AGH system
- Attaining Level I and Level II Meaningful Use goals set by the federal government
- Performing well in healthcare quality metrics and achieving strong patient satisfaction ratings
- Expanding the pool of primary care physicians and specialists in our region

... And we've accomplished all this coupled with operational efficiencies and positive financial performance.

VISION

To be the leader in caring for people and advancing health for the residents of and visitors to our community.

MISSION

To create a coordinated care delivery system that will provide access to quality care, personalized service and education to improve individual and community health.

2020 Vision
care.coordination

Our **2020 Vision** is all about integrating healthcare beyond the acute care facility. Investment in technology-based solutions will result in care being distributed more evenly throughout our region, with easier access for all. AGH will be the leader in promoting our region's good health and the prevention of disease.

We are grounded by these timeless values:

- **P** Patient safety first
- **A** Accountability for financial resources
- **T** Trust, respect and kindness
- **I** Integrity, honesty and dignity
- **E** Education – continued learning and improvement
- **N** Needs of our community – participation and community involvement
- **T** Teamwork, partnership and communication
- **S** Service and personalized attention

Coordinated Quality Care is ...
Convenience and ease of access.

Coordinated Quality Care is ...
Reducing preventable ER visits

Coordinated Quality Care is ...
Reducing hospital admissions, readmissions and rehospitalizations.

Right Care
- Focused on affordable patient and family care
- Error-free healthcare services
- Focused on primary care providers
- Timely delivery of healthcare services
- Driven by best practices

Right Place
- Community-based healthcare services
- Primary care available everywhere
- Conveniently available healthcare specialists
- Telemedicine capabilities

Coordinated Quality Care is ...
Reducing preventable health complications.

Right People
- A service orientation
- A provider mix that aligns with our community's needs
- The right healthcare specialists, available locally
- Continuous learning and improvement

Right Partners
- Accountable, affordable care
- Advanced acute care referral
- Rehabilitation care
- Long-term care
- Hospice and palliative care
- Mental health care

Coordinated Quality Care is ...
Improving the health of everyone.

Right Hospital
- The right hospital to lead care coordination in our community
- The right place to receive care

Susan C. Lee is a Maryland State Senator representing District 16. She was previously elected to the Maryland House of Delegates in 2002, and has been described as the General Assembly's leader on cyber security and innovation, identity theft, online fraud, and consumer protection issues. As Co-Chair of the Maryland Commission on Cyber Security, Innovation and Excellence, and as Co-Chair of the Maryland Identity Theft Task Force, she has authored and led efforts to pass major laws to protect Marylanders against cyber attacks and terrorism, identity theft, and online fraud, and assist victims of those crimes.

During her two terms as President of the Women's Caucus, Susan led efforts to pass an aggressive agenda of legislation to fight domestic violence, sexual assault, and human trafficking; economically empower women, children and families; secure funding for statewide rape crisis centers; and authorize the placing a statue of Marylander and American hero Harriet Tubman in the United States Capitol.

Susan also is a champion of education, the environment, public safety, civil rights, transportation, quality health care, telemedicine, bioscience, clean energy, and emerging technologies. She authored Maryland's first Telemedicine law as well as the law creating the Maryland Nanobiotechnology Task Force, which she served as its Co-Chair.

Susan, an attorney, serves as a Deputy Majority Whip; Judiciary Committee Member; Chair, Family Law Subcommittee; Vice Chair, Montgomery County House Delegation; Co-Chair of the Maryland Commission on Cyber Security, Innovation & Excellence. She also served two terms as President of the Women Legislators of Maryland (Women's Legislative Caucus) and as the Co- Chair of the Maryland Nanobiotechnology Task Force and Co-Chair of the Maryland Identity Theft Task Force. She is the first Asian American woman and Chinese American elected to the Maryland General Assembly.

Susan is the daughter of a World War II veteran of the US Navy and retired Washington Post artist and a proud product of the Montgomery County public schools, Leland Junior High School, Herbert Hoover Junior High and Winston Churchill High School. She graduated from the University of Maryland and University of San Francisco School of Law. Susan was a member of the Western Montgomery County Citizens Advisory Board, Jewish Foundation for Group Homes Board, Montgomery County Gang Task Force, and Progressive Maryland and Co-Chair of the NAACP Multicultural Community Partnership. She was appointed to serve on the United States Patent and Trademark Advisory Board during the Clinton Administration.

Susan represents District 16, which includes Bethesda, Chevy Chase, Friendship Heights, Potomac, Rockville, Cabin John, and Glen Echo. She and her husband live in Bethesda.

H. Neal Reynolds, MD holds a degree in Electrical Engineering from the University of Maryland at College Park and subsequently graduated from the University of Maryland School of Medicine; and completed training in Internal Medicine and Critical Care Medicine. He currently practices critical care medicine at the R Adams Cowley Shock Trauma Center in Baltimore. Dr. Reynolds has been involved in telemedicine/telehealth since 2000 when he assisted in operationalizing the first Tele-Intensive Care Unit in the country. Since then, he has contributed to the literature in telemedicine with six peer- reviewed manuscripts, two position papers, nine abstracts presented at national meetings, two chapters, and has provided 15 talks in telemedicine. Since 2010, Dr. Reynolds has worked with the Maryland State General Assembly for the passage of HB 1149/SB781 in 2012, mandating that commercial payors reimburse providers in parity for telemedicine services; HB1042/SB798 in 2013, establishing proxy privileging for physicians; HB 934/SB776 re-establishing the Maryland Telemedicine Task Force; and finally HB802/SB198, mandating that Medicaid reimburse providers in parity for telemedicine services. In 2014, Dr. Reynolds served as the Chairman for the Clinical Advisory Group for the Maryland Telemedicine Task Force and coordinated the development of use cases for telemedicine in the State.

Advancing Telehealth

…..through Innovative Transitions of Care Projects

H. Neal Reynolds, M.D.
Associate Professor of Medicine, University of Maryland School of Medicine
Associate Director: Multi-Trauma Intensive Care Unit, RAC Shock Trauma Center
Chairman: Clinical Advisory Group for the Maryland Telemedicine Task Force

1

Current state of Telemedicine Legislation in Maryland

2012: HB 1149/SB781 Mandating commercial Payers to reimburse providers ***in parity and without geographic restrictions*** for telemedicine services

2013: HB1042/SB798 establishing Proxy Privileging for physicians

2013: HB 934/SB776 re-established the Maryland Telemedicine Task Force

2014: HB802/SB198 mandating Medicaid reimburse providers ***in parity and without geographic restrictions*** for telemedicine services

2

Pending Telemedicine Legislation in Maryland

2015 An Austere year

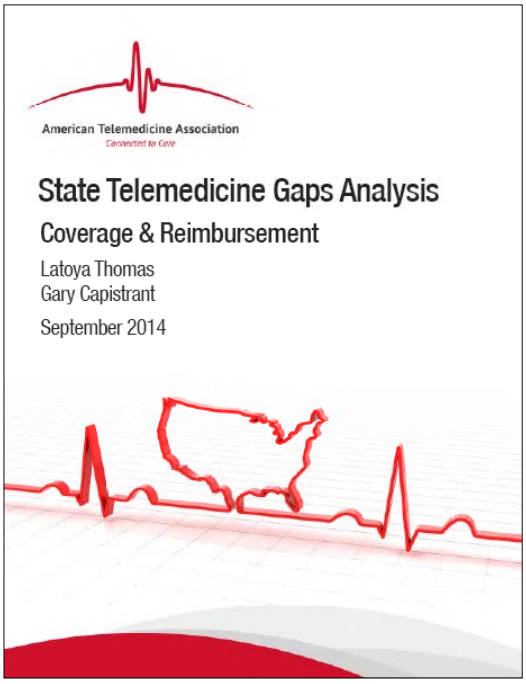
Medical Licensure "Compact" (SB:252 Sen Pugh)

- Align Maryland with Federation of State Medical Boards
- Alignment with future potential Federal legislation
- Remove a major barrier to expansion to telemedicine

Tele-Therapy Task Force (SB:162 Sen Nathan-Pulliam)

Nurse Practitioner reimbursement for Tele-Mental Health (SB:318 Sen Pugh)

3



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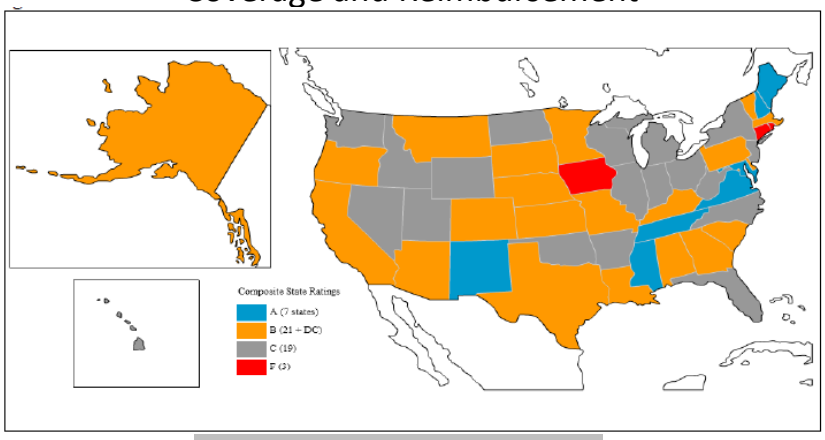
ATA Telemedicine Gaps Analysis

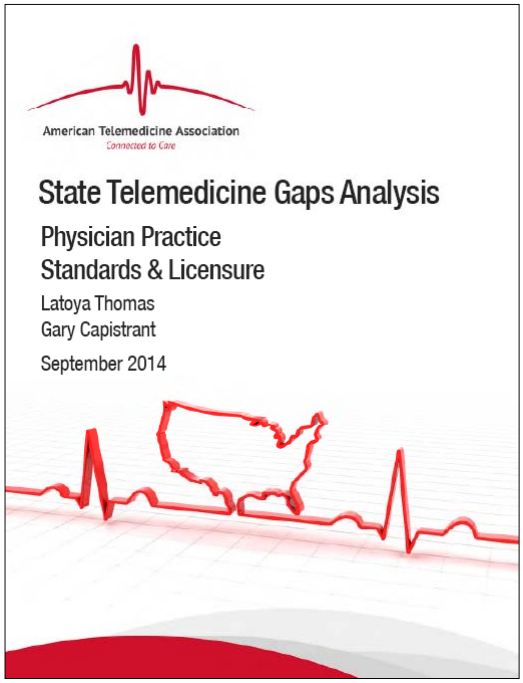
Coverage and Reimbursement



Reasons Maryland is "A" rated

1. Parity of Payment
2. No Geographical Restrictions
3. No (almost) Technology Restrictions
4. No Service Type Restrictions

5



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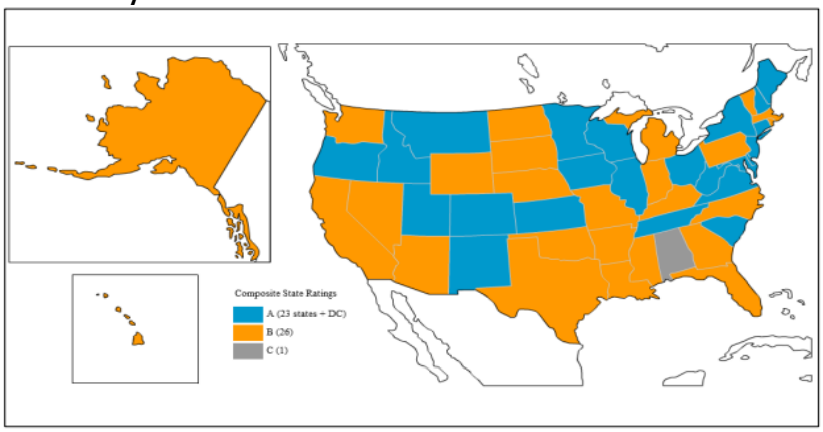
ATA Telemedicine Gaps Analysis

Physician Practice Standards & Licensure



Reasons for Maryland's (near) "A" rating
1. Tele-presenter presence not required
2. Prior informed consent not Required
3. No In-Person follow up examination required
4. Some licensure "reciprocity"

7

Telehealth Landscape: Nationally

American Telemedicine Association

200 Telemedicine networks in the USA

3500 service sites

1,000,000 patients with remote cardiac monitoring

300,000 VA remote consultations in 2011

2014: Estimated 75 million Telehealth visits

Predict +/- 50% of health care provided remotely in 5 years

State-Wide Programs (Georgia, Arizona, California)

8

Telehealth Landscape: Maryland

Critical Care Network (110 beds covered/day)

Tele-Mental Health (under-deployed)

Stroke Program (very limited application of TeleHealth Tech)

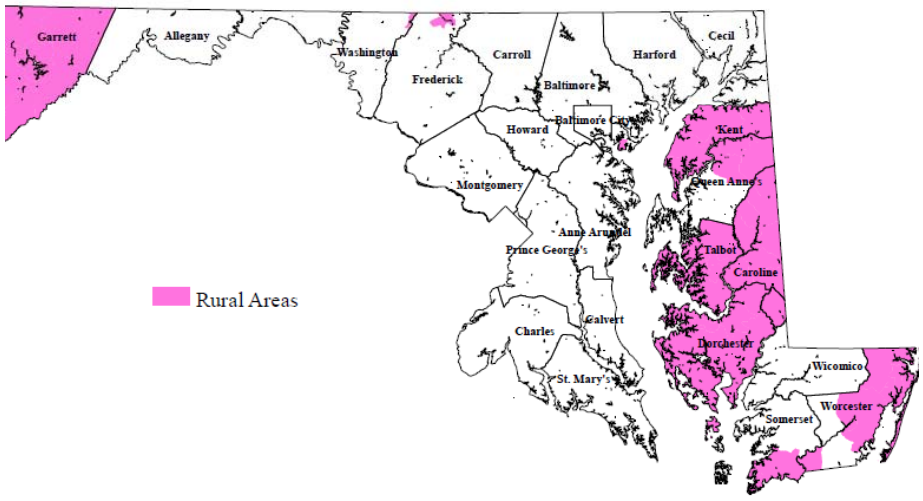
Maternal-Fetal Health (very limited application of TeleHealth Tech)

Chesapeake Regional Information System for Our Patients (CRISP): State Health Information Exchange

(No IMAGE Exchange)

9

Federally Designated Rural Areas in Maryland



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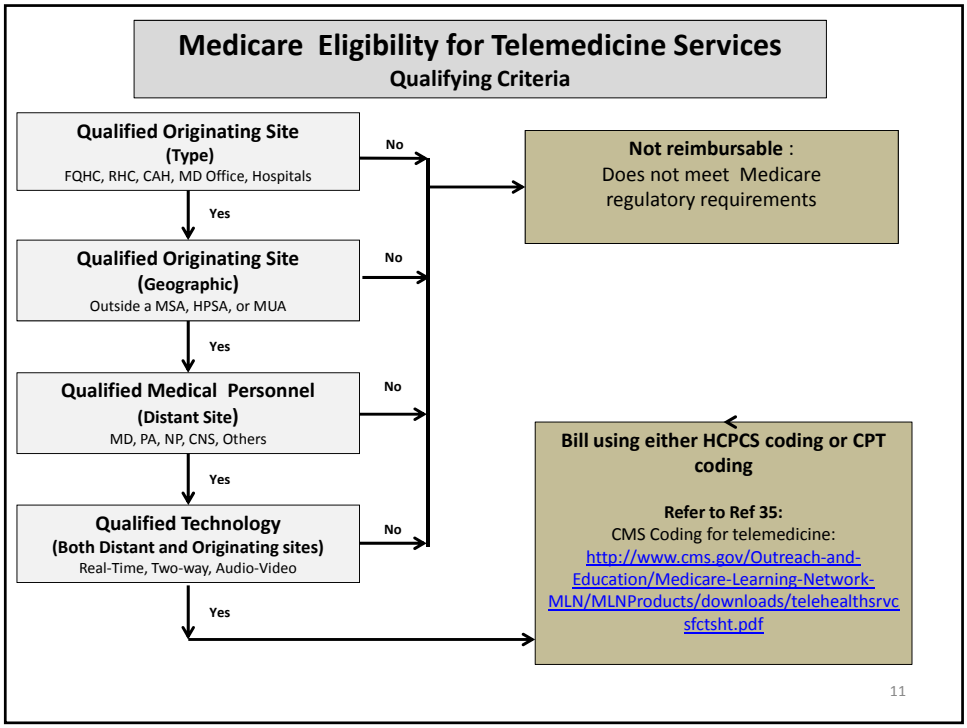


Maryland Telemedicine Task Force

- 2013: Re-established Maryland Telemedicine Task Force
- Report completed and delivered Dec 2014
- Telemedicine Task Force: three advisory groups

Technology Standards and Solutions

David Sharp: Technology exists and adequate

Business and Finance Group

Ben Steffen: May be reimbursement issues

Clinical Advisory Group

Neal Reynolds, M.D.: Clinical Applications

12

Maryland Telemedicine Task Force

- Telemedicine Task Force developed "Use cases" to:

improve access to care and quality of care

improve patient satisfaction

facilitate management of a surge of patients

decrease cost of care consistent with the Affordable Care Act

ULTIMATELY - accelerate telehealth diffusion in the State

13

Clinical Advisory Group

Improve transitions of care between acute and post acute settings through telehealth

Reduce returns from SNF/LTACs to acute care hospital

May not have physician care providers at night or ??weekends

Enhance goals of "Community Based Health Care"

With telemedicine, can provide virtual care during off hours

Dimensions Healthcare System

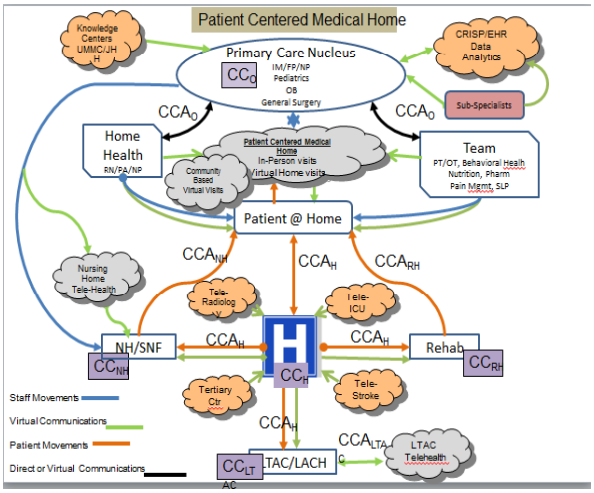
ATLANTIC GENERAL HOSPITAL

UNIVERSITY of MARYLAND UPPER CHESAPEAKE HEALTH

14

Clinical Advisory Group

Incorporate telehealth in hospital and community delivery models through shared savings (ACOs) and PCMH programs



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Disease State	Criteria for Enhanced Monitoring	Monitoring
Congestive Heart Failure	1. Ejection fraction < 45% 2. More than 1 Hospitalization for CHF per year 3. Weight gain more than 10 lbs in 60 days	1. Daily weights with reporting daily to network
Diabetes Mellitus	1. HgbA1C > 9% 2. ≥ 40 units total insulins 3. DKA more than once per year 4. ≥ 3 oral medications required for control	1. Home glucose monitoring with daily reporting to Network till advised otherwise
Hypertension	1. SBP > 180 2. DBP > 115 3. Admission ever for malignant hypertension or hypertensive emergency 4. Cerebro-vascular event related to uncontrolled hypertension 5. ≥ 3 oral medications required	1. Daily home blood pressure monitoring and daily reporting to network till advised otherwise
Chronic Obstructive Pulmonary disease	1. Uses home oxygen 2. Pulmonary function tests demonstrating Forced Expiratory Volume in 1 second (FEV1) ≤ 1 liter 3. Admission to hospital requiring artificial life support ever 4. Sleeps in a chair 5. Cannot perform activities of daily living independently	1. Home pulse oximetry (SpO2) and report to network for set individualized criteria 2. Peak Expiratory Flow (PEFR) and report for individualized set criteria

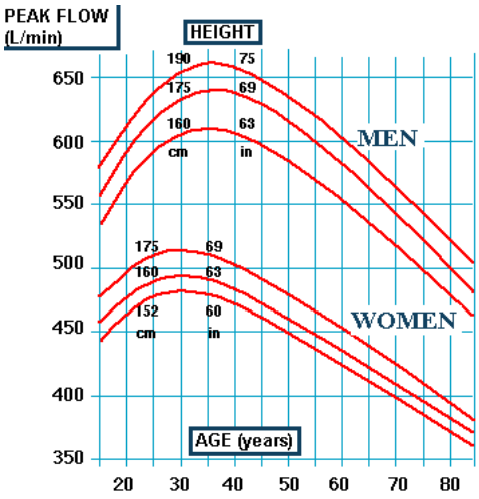
16

Monitoring and Telemonitoring

17

Telemonitoring

Peak Expiratory Flow Monitoring



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Clinical Advisory Group

Community deployment of telehealth sites (kiosks) connected to health care professionals and/or the statewide health information exchange

Improving access to health care
Improving exchange of vital health information

19

Clinical Advisory Group

Remote mentoring, monitoring, and proctoring for the expansion, dispersion, and maintenance of skills, supervision, and education

Knowledge Sharing

Keeping the Care Providers in the Rural Communities

20

Clinical Advisory Group

Telemedicine deployment to hospital emergency departments and/or during transport of critically ill patients

Stroke Network: Time is Brain

School Telehealth:

Asthma , diabetes, childhood obesity, ***behavioral health***, and smoking cessation

Telehealth for routine and high-risk pregnancies

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Telemedicine adoption in Maryland

SLOW

- MD resistance to change
- Uncertainty under newer reimbursements schemes
- Perception of expense and complexity
- No training (not offered in medical school)
- Belief that TM should be supported by grants
- Oh… the patients will not like TM
- Yeah.. maybe this is part of the future

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What is next??

- Successful demonstration projects
- Education, education, education
  - MDs, health care administrators, health care educators
- Some legislation
  - Home as an acceptable “originating site”
  - Reimburse home monitoring
  - Reimburse for “Store-and-forward” (Tele-Derm, Tele-Path)
  - CRISP: real image sharing
  - Medical Licensure Compact
  - Funding pilots

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Kerry Palakanis, DNP, NP-C is a family nurse practitioner who has been working in rural and underserved areas for over 20 years. In 2012, she established the Crisfield Clinic, a nurse practitioner owned and operated family practice in rural Somerset County. In 2014, the Crisfield Clinic was awarded more than $600,000 by the USDA Distance Learning and Telemedicine Grant to establish clinic and school-based telemedicine in Somerset County. Dr. Palakanis has been working on several other telehealth projects, including expansion of school-based telemedicine centers, chronic disease management and remote patient monitoring solutions.

Telehealth as an Innovative Intervention in Maryland Primary care

Kerry Palakanis, DNP, FNP-C
Crisfield Clinic, LLC

"How we get to the mainland for work, errands, doctor's appointments, etc. when the ice sets in. Likely to get worse before it gets better with the frigid temps coming soon."
– Facebook post from Smith Island Resident 02/17/2015

2

Overall health and well-being is influenced by and dependent upon the community in which we live and work. In order to understand identified health indicators and disparities of a community, it is imperative to understand the geographical location, demographic population, and socioeconomic factors.

3

The challenges to providing quality health care services and delivery to rural Maryland largely result from geographic isolation and lack of the critical population mass necessary to sustain a variety of primary and specialty services.

Chart 1: Quartile Rankings by Jurisdiction Based on Health Status and Health Care Access Indicators, 2011*

Quartile	Health Status	Health Care Access
Top Quartile	Carroll Frederick Howard Montgomery Queen Anne's Talbot	Anne Arundel Calvert Carroll Frederick Howard Montgomery
Second Quartile[1]	Anne Arundel Charles Garrett Harford Prince George's St. Mary's Worcester	Baltimore County Charles Harford Queen Anne's St. Mary's Talbot
Third Quartile	Baltimore County Calvert Cecil Kent Wicomico	Cecil Dorchester Kent Prince George's Washington Worcester
Bottom Quartile	Allegany Caroline Dorchester Somerset Washington Baltimore City	Allegany Caroline Garrett Somerset Wicomico Baltimore City

*Note that the order within the quartiles is alphabetical and does not indicate further ranking.
[1] The second quartile of health status indicated a tie between two counties causing a shift in even quartiles
Source: Primary Care Office, Office of Health Policy and Planning, Family Health Administration, Maryland Department of Health and Mental Hygiene, 4/4/2011

4

Telehealth Can Offer Primary Care Providers Access to Specialists and Assist with Chronic Care Management

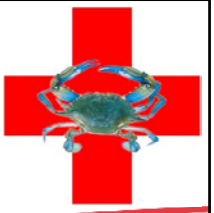




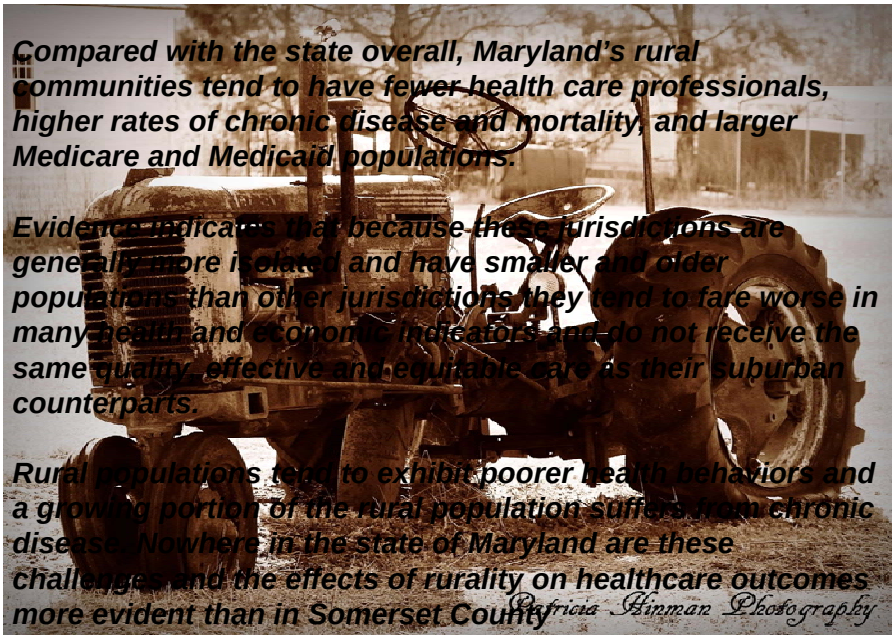


5

Telehealth Integration within a Small Provider Practice




6



7

Telemedicine in Primary Care Integration – Solving Access Issues

Project CRAB – Creating Resources Across Barriers
- School-based Telemedicine in 2 Crisfield Clinics and 6 Somerset County schools
- Initial Funding - USDA RUS Grant

SHIP – Smith Island Health Improvement Plan
- Telemedicine on 2 cities in Smith Island
- Funding – RUS grant, ongoing search for staffing funding

HELP Somerset – Health, Education & Learning Program
- Community Health Workers/telemedicine access
- mHealth device deployment to at risk patients
- Funding - HRSA Rural Outreach Grant (application in process)

****All programs sustainable through billing for telemedicine care services**

8

Telemedicine in Primary Care
Crisfield Clinic - Collaboration

9

Opportunities to Expand Telehealth in School-Based Health Centers

10

Schools are an ideal environment to promote health. Children spend approximately one-half of their waking hours in the school environment.

School can be a context where children can learn and practice positive health behaviors within a health-promoting environment. The Institute of Medicine's report *Accelerating Progress in Obesity Prevention* concluded that schools should be strengthened as the heart of health.

Research has demonstrated the School-Based Health Center's impact on delivery of preventive care, management of chronic illnesses, and improvement of academic performance.

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Despite their proven success, school-based health centers have consistently faced challenges in securing adequate funding for operations and development of effective financial systems for billing and reimbursement.

By creating a self-sustaining system of health care which bridges the school-based health center with care by providers who have billing and reimbursement systems in place, the burden of the cost of care is shifted off of the school and back to the health care insurers who are responsible for overall health care delivery.

12

Future Opportunities for School-Based Telehealth

Develop Statewide School-Based Telehealth Resource Center to:

- Assist interested counties in exploring funding and grant options
- Develop network of primary care and specialty care providers
- Establish sustainability through telehealth and remote patient monitoring billing/reimbursement
- Collect data for program planning, evaluation of effectiveness and targeted interventions
- Share best practices within the state and with other state programs
- **Make Maryland the Healthiest Place for Children to Learn and Live!**

13

Eric M. Aldrich, MD, PhD is the Vice President for Medical Affairs of Howard County General Hospital and is an Associate Professor of Neurology and Physical Medicine & Rehabilitation at the Johns Hopkins University School of Medicine. Dr. Aldrich graduated with Honors in Psychobiology from Hamilton College in 1982. He then graduated from the MD/PhD program at the George Washington University School of Medicine in 1991. After completing an internship in Internal Medicine at the George Washington University Medical Center in 1992, he completed a residency in Neurology at the Johns Hopkins Hospital in Baltimore, Maryland, rising to the level of Chief Resident in 1995. He received a National Research Service Award for a fellowship in Neurorehabilitation and Stroke at the University of California Los Angeles Medical Center. He was invited to join the faculty of the Department of Neurology at UCLA. Subsequently he returned to Johns Hopkins in 1999 to join the Department of Neurology and has a joint appointment in the Department of Physical Medicine & Rehabilitation. He developed the Johns Hopkins Hospital Stroke Center and served as its Medical Director for 10 years. In addition, Dr. Aldrich was the Physician Advisor for the Department of Neurology, the quality and safety officer for the department, and has been involved in a variety of quality improvement and safety programs at Johns Hopkins Hospital. Dr. Aldrich has been a strong advocate for improving the quality of care and quality of life for stroke patients and their families. He has been a volunteer for the American Heart Association/ American Stroke Association in a variety of roles, including President of the Mid Atlantic Affiliate Board of Trustees, Leadership Committee of the Stroke Council, the Get With The Guidelines Advisory Committee, and the American Stroke Association Advisory Committee. In Maryland, he has served as the Chair of Operation Stroke, as President of the Maryland Stroke Alliance, and as a member of the Maryland State Stroke System Quality Improvement Committee. In addition, he was appointed to the Maryland Governor's Advisory Council on Heart Disease and Stroke as well as the Maryland Health Care Quality and Cost Council Telemedicine Task Force.

Telehealth In Maryland: Pride In Our Past, Faith In Our Future

Advancing Telehealth Through Innovative Transitions Of Care Symposium

Dr. Eric M. Aldrich
Vice President for Medical Affairs
Howard County General Hospital
Johns Hopkins Health System

My Charge

- Current Role of Telehealth in Improving Transitions of Care
- Using Telehealth to Manage Chronic Health Conditions
- Future of Telehealth to Improve Care Delivery

A Historical Perspective: Pride In Our Past

- Consider stroke as a model of using telehealth to improve care
- Background: Stroke is a leading cause of death and disability in Maryland
- Opportunity: Exciting new treatments now exist that can improve care and outcomes
- Problem: Access to care, not enough experts to go around etc. etc.
- Solution: Telehealth

A Brief History of Stroke and Telehealth in Maryland

1996 FDA approves tPA
1999 University of Maryland Telestroke Project with St. Mary's Hospital
2002 State Advisory Council on Heart Disease and Stroke
2003 MIEMSS creates pre-hospital stroke care protocols
2004 JCAHO Primary Stroke Center Certification Program
2006 MIEMSS Stroke System created
2007 MIEMSS certification of stroke centers
2007 Maryland State Advisory Council on Heart Disease and Stroke Bi Annual Report identifies the need for telemedicine

Stroke Telehealth History Continued

2009 Maryland State Advisory Council on Heart Disease and Stroke Bi Annual Report again calls for telemedicine

2010 University of Maryland School of Law Telemedicine Conference

2010 Maryland DHMH Family Health Administration Office of Chronic Disease Prevention While Paper on Telemedicine

2010 Maryland Health Care Quality and Cost Council Telemedicine Task Force

2011 Telemedicine Task Force directed to take a broader approach

2012 Telemedicine legislative activity increases significantly

2013 Senate Bill 776: MHCC Telemedicine Task Force

More History: Rapid Technological Development

1. University of Maryland – St. Mary's Project
   - Older technology – land lines and basic audiovisual
   - Expensive
   - Communication but not data

2. Mass General, Medical College of Georgia etc.
   - Web based
   - Less expensive
   - Allowed communication and data, but logistical challenges

3. Commercial Providers
   - Specialists On Call
   - In Touch robots
   - Still challenges with cost and logistics

Lessons From The Past

- We have come a long way in the past 20 years
- The need is great and the potential to improve care is known
- Technology has evolved at a very rapid rate, almost outpacing efforts to adapt to those changes
- The cost of that technology continues to decrease
- Many of the challenges that were identified in the past are being addressed
- A large group of people have devoted a great deal of time and energy to this issue
- Truly "Pride In Our Past"

So What About The Future?

- Past efforts were in an era of very different medical economics
- New Era of Health Care in Maryland
  - Affordable Care Act
  - Meaningful Use
  - Maryland Medicare Waiver and the GBR
  - Accountable Care Organizations (ACO)
  - Medical Homes
- Its All About Value Not Volume
- Its All About The Triple Aim
- Its All About Population Health

Telehealth Technology Today

- Wireless Technology
  - Smart Phones
  - iPads
- Impact of Meaningful Use
  - Most hospitals have electronic medical records
  - Most hospitals have teleradiology
  - Remote access
  - CRISP brings together hospitals and systems
- Costs of Technology are Significantly Less
- Clinical Analytics is Much Easier
  - Allows for improved quality improvement
  - "If you can't measure it you can't manage it"

Organized Telehealth Today

- Nationwide there are 12 Telehealth Resource Centers
- 2 National Centers focus on technology assessment and telehealth policy
- Funded by the U.S. Department of Health and Human Services Health Resources and Services Administration (HRSA)
- Mid Atlantic Telehealth Resource Center (MATRC)
  (PA, NJ, MD, WV, VA, NC, KY)
- Significant effect in improving care in remote rural areas
- Significant impact in a wide variety of applications including primary care, chronic disease management, numerous clinical specialties, and education

My Charge

- Current Role of Telehealth in Improving Transitions of Care
- Using Telehealth to Manage Chronic Health Conditions
- Future of Telehealth to Improve Care Delivery

Role In Transitions Of Care

- Transitions of care is one of the key points of vulnerability in our health care system (e.g. complications, mistakes, readmissions etc.)
- Telehealth promises to be a powerful tool to address this vulnerability (e.g. projects presented today)
- Opportunity to improve quality and outcomes with acceptable cost

Role In Chronic Disease Management

- Remote monitoring via telehealth need not be just with a facility, but can be brought to the home of the patient
- Telehealth also addresses access to care issues in underserved or remote areas by bringing expertise to the patient or the facility (e.g. MATRC accomplishments or the Maryland State Stroke System)
- Again, an opportunity to improve quality and outcomes with acceptable cost

Future of Telehealth

- Maryland is uniquely positioned to take full advantage of the benefits of telehealth in the new health care environment
- Size, available resources and a culture of collaboration provide opportunities that others states would envy (DHMH, MHCC, HSCRC, MIEMSS, CRISP, MHA, Elected Officials etc.)
- The key to success in the arena of population health is to be fully engaged in the patient's care
- First and foremost via disease prevention
- Second, and equally important, across the continuum of care (home, hospital and post-acute settings)
- The common theme is communication, access to data, and collaboration
- Telehealth provides the ability to do all three
- And, at an affordable price!

Acknowledgements

- Efforts to date span nearly two decades and have involved hundreds of individuals contributing their time, energy and expertise
- Support of key state agencies and key state leaders has been invaluable
- We would not be where we are today without them
- Democracy in action is a wonderful thing to watch
- Reminds us how fortunate we are to live in Maryland
- The future is bright
- We truly can have “Faith In Our Future”