Prepared for the Foundation of the American College of Healthcare Executives

Session 63X
Leveraging Telehealth to Reduce Costs, Improve Outcomes in Small, Rural and Independent Hospitals

Presented by:
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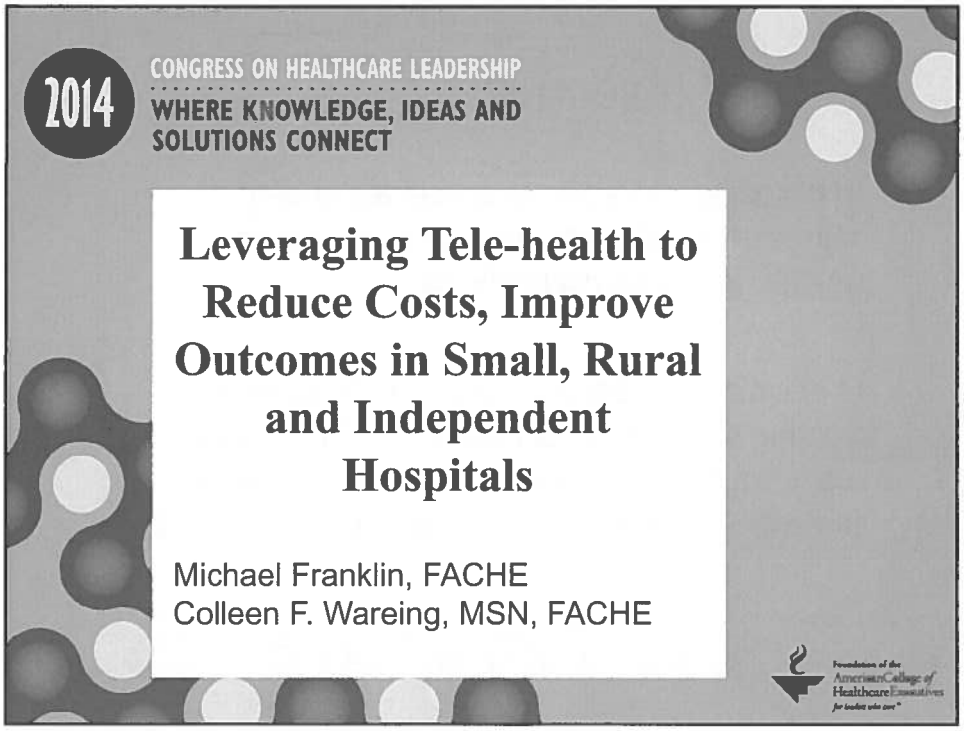

Presenters:

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Learning objectives:

- To learn key strategies to accelerate quality improvement and improve nurse and physician satisfaction using telemedicine.
- To examine collaborative structures/models for creating shared ICU capabilities and take-away successful practices including IT requirements, credentialing protocols and implementation timelines.

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Executive summary:

- With falling reimbursement increasingly tied to performance, hospitals must develop more effective and efficient care. A group of independent hospitals created a collaborative telemedicine model, leveraging hospital resources and allowing smaller, rural hospitals to deliver specialized care around the clock. The majority of participating hospitals have found a decrease in transfers to other facilities, and all participating hospitals have seen a statistically significant decline in ICU and hospital mortality rates and ICU length of stay.

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Agenda:

1. AGH/HS and Our Service Area
2. Development of Maryland eCare®
3. Grant Funding
4. Legal Structures
5. Clinical Use of Telemedicine in the ICU
6. Added Value of Telemedicine in the ICU
7. Best Practice through Collaboration

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ATLANTIC GENERAL HOSPITAL
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Atlantic General Hospital & Health System

- **AGH is a 62-bed acute care hospital in Worcester County, Maryland. Worcester County is designated as a "Health Professional Shortage Area" (HPSA) for primary care.**

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- **Our 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.

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AGH has a unique service area

- Population in that it serves a rural community of approximately 100,000 year-round
- It also is the primary hospital for the resort community surrounding Ocean City, Maryland, where the population surges to over 500,000 in the summer months
- This places a unique demand for seasonal resources in the hospital

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ICU TELEMEDICINE

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Why Telemedicine at AGH?

- AGH employs two full-time intensivists in its 6-bed ICU
- While this provides adequate coverage for availability during the day, maintaining appropriate ICU coverage and physician availability 24/7/365 creates physician fatigue and retention issues

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In the Beginning...

- In 2006, thirteen Maryland hospitals collaborated with CareFirst BlueCross/BlueShield of Maryland in commissioning a feasibility study by the Delmarva Foundation regarding "e-Technology Solutions for Community Hospital-Based Intensive Care Units."
- The purpose of the evaluation was to provide decision support for regional implementation of new technology to leverage scarce resources and create an affordable, cost-effective means of expanding ICU coverage in communities.
- This study also provided an assessment of the capital and operational costs for implementation as well as potential savings to the healthcare system.

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Maryland eCare Members

- Member hospitals vary from 24 beds to 4 monitored ICU beds.
- Each member hospital participates on Maryland eCare's board of directors and has voting rights that are directly related to the number of monitored beds.

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Challenges

1) Shortage of critical care physicians straining staff and dominating on-call needs.
2) ICU patient volume not large enough to create tele-ICU alone and insufficient funds to act independently.
3) Desire to improve quality indicators, accommodate increasing ICU demand and ultimately achieve cost savings.

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Grant Funding

- Maryland eCare® received a three year grant totaling $3 million from CareFirst BlueCross/BlueShield of Maryland.
- The grant funding offset member hospitals' per-monitored bed costs.
- Those who fully committed to the program early necessitating quick implementation and early "go live" dates received a larger share of support.
- The remaining costs of capitalization and operation were the responsibility of each member hospital.

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Legal Structures

- Six hospitals formed Maryland eCare® through the Maryland State Department of Assessments and Taxation as a limited liability company (LLC)
- This formal structure was essential for technical logistics such as joint contracting as well as organizational structure and decisions established through an operating agreement (OA)
- Monitored beds drives the per-member hospital contribution to the LLC for operating capital and dictates dispersion of start-up grant funds (which offset initial costs for contracting monitored beds)

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- The primary purpose in forming an LLC was to create the vehicle for jointly contracting with the tele-ICU hub provider, originally Christiana Care in Delaware and now the University of Maryland Medical System (UMMS)

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Operating Agreement

- The OA dictates leadership and voting structure, initial distribution of start-up grant funding, and voluntary as well as involuntary termination of members
- OA binds members of Maryland eCare® together and guides the group's actions and decisions
- The OA creates the monitored ICU bed "group purchasing" volume that enables member hospitals to each realize a "discount" in the cost per monitored bed.

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Key Point

- Regardless the quantity of remote site locations, more monitored beds increases the efficiency of the tele-ICU hub and lowers the price for Maryland eCare members.

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Service Agreement

- A Service Agreement (SA) establishes the service level agreements and responsibilities between the clinical parties (UMMS and Maryland eCare hospitals) and the clinical application original equipment manufacturer (VISICU™, now a part of Philips Healthcare).

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- The SA contractually obligates Maryland eCare to provide a minimum number of monitored beds to the hub (currently 72), and investment in appropriate equipment for the remote site hospitals.
- It obligates UMMS to the provision of appropriately qualified physicians and nurses, time of service, and provision of timely information for the credentialing of providers.
- The relationship with Philips VISICU is managed through UMMS in the SA.

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Relationship Management

- Layering the relationships and the responsibilities of all of the participants in the Maryland eCare® relationship through the LLC, the OA and the SA has created the boundaries for the ongoing success of the program.

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Clinical Outcomes and Clinician Perceptions of eCare

CLINICAL UTILIZATION OF E-CARE

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Objectives

- Share the perceived value of telemedicine by administration, the nurse and physician as an adjunct to their practice
- Explore the initial outcomes experienced through 24 hour coverage by a skilled eCare team
- Explore the cost benefits of telemedicine over 24 hours on site coverage by intensivists.

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eCare through the Nurses Eyes

- Two rural hospitals participated in a Phenomenological study
- The purpose was to elicit the themes that predominate with ICU nurses as perceptions of the eCare technology in assisting them in their daily practice and care of the patient.

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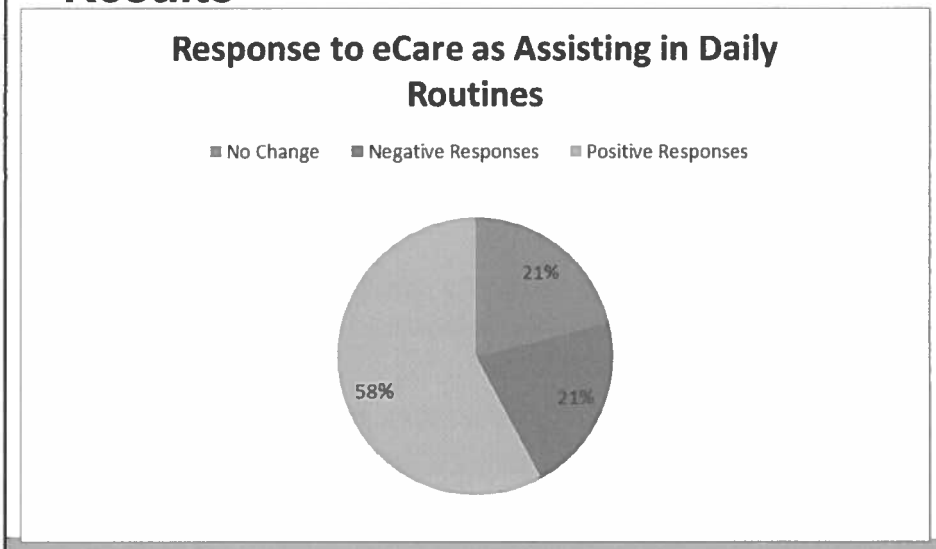
Results



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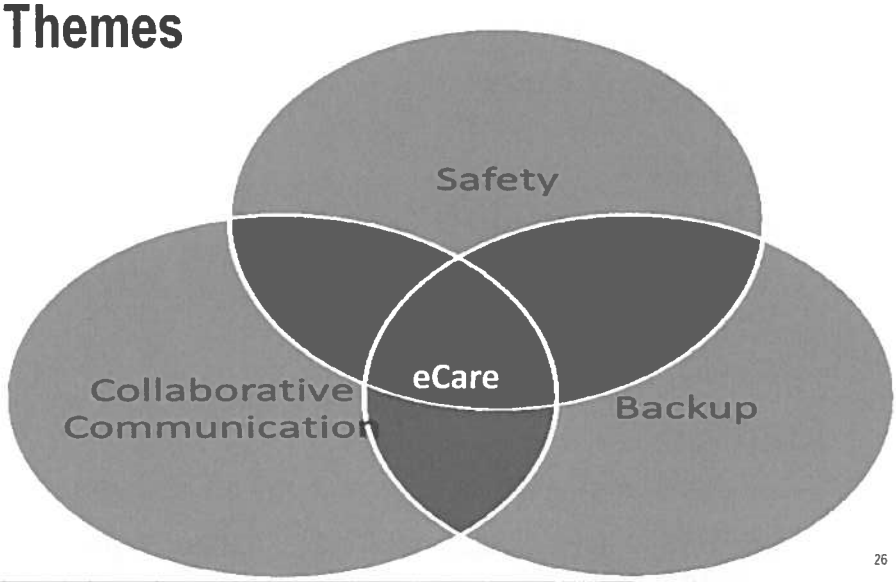
Themes



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Significance

Leadership/Administration:

- Perceived Patient Safety
- Decrease Expenses R/T Medical Error
- Perceived Increased Nurse-Nurse and Nurse-Physician Communication
- Decreased Expenses R/T Costly Hiring & Training of Critical-Care Nurses Through Increased Retention

Nursing:

- Increased Retention R/T Increased Nursing Satisfaction
- Perceived Sense of Reassurance/Backup
- Ability to Provide Safe, Quality-Driven Patient Care

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Value and Opportunities as seen Through the Physicians Eyes

- Advantages:
  - Immediate availability of consultation
  - Immediate intervention and prevention of delay in lifesaving treatment
  - Continuous monitoring
- Opportunities:
  - Unable to perform procedures - back up required
  - Electronic stethoscopes to allow expanded data

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Advantages to the Physician/Patient

- Significant decrease in calls at night
  - Monitoring 7pm-7am and weekends 24 hours
- Compliance to protocols for prevention of preventable complications such as line infections and ventilator associated pneumonias
  - Zero VAPS since 2008
  - Zero CLAPSI for ___ weeks

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Lessons Learned

- Concentrate education of eCare as an adjunct, not to replace staff
- Educate the patients and families that eCare is an adjunct, not because we are understaffed or need assistance from a "bigger hospital"
- Coordinate documentation between VISICU and your hospital EMR to prevent duplication
  - APACHE data must be in the system

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Sepsis

- Improved compliance with best practice through sharing of university based protocols
  - Reduced mortality
  - Reduced LOS
  - Reduced costs of care with reduced LOS and complications

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Interdisciplinary Rounds Guidelines for ICU

Purpose of Rounds:

- 1. Communication among caregivers
- 2. Establish and update the daily plan of care
- 3. Medication appropriateness
- 4. Review of problems over past 24 hours
- 5. Improve communication with patient/family for continuity
- 6. Identify risk and patient/family dissatisfaction issues early
- 7. Prevent adverse outcomes through early intervention

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Structure, expectations and rules

- Use the Plan of Care in eCARE and update the Plan of Care in the computer. Announce rounds are beginning
- Physician- Provide a brief description of patient, reason for ICU and level of care
- Nurse -gives a current condition, significant issues for past 24 hours, pressers, family/patient issues, safety concerns, critical values, Line days, infection control concerns.
- Respiratory – Ventilator setting and status update
- Pharmacy – Medication concerns, DVT and GI prophylactics
- Nutrition – Status and concerns

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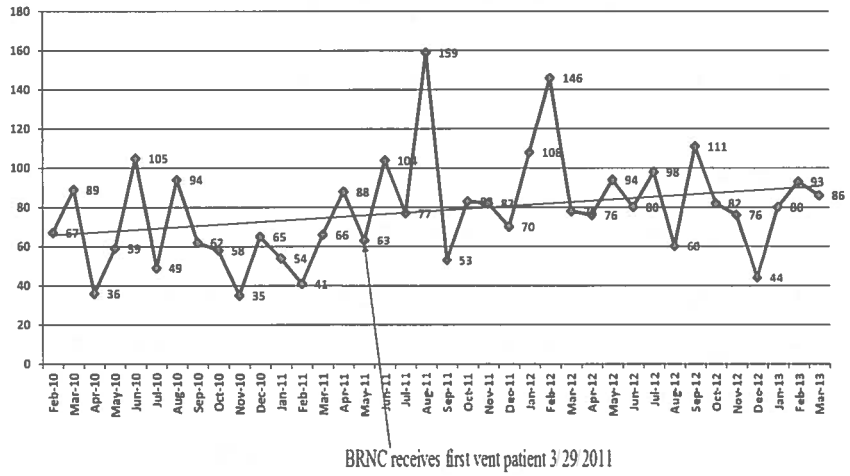
Respiratory Care Services Ventilator Days by Month



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Acuity versus Utilization

- Average APACHE vent days in the system were 3.17 with AGH at 4.11
- Low VAPS indicate excellence in clinical outcomes
- High vent days are not resulting in complications or above expected morality
- Vent days are high reflecting higher acuity and change in local service delivery

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Cost Comparison
eCare vs. More Intensivists

- Currently we have 2.0 FTE covering day shift seven days per week plus eCare covering nights and week-ends
  - Total Annual Cost: $228,000
- To cover 24 hours/seven days per week it is estimated we would need to hire two additional intensivists
  - Total Estimated Annual Cost: $700,000

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Maryland cCare Members Sharing and Comparing Data

BEST PRACTICE COLLABORATION®

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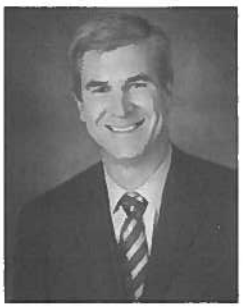

Michael A. Franklin, FACHE

Mr. Franklin joined Atlantic General Hospital and Health System as President and CEO in October 2005. He has guided the leadership team at AGH through the process of establishing a unique, cyclical strategic planning process that incorporates the input of all the key stakeholders of the hospital and health system (physicians, associates, community). This "customer-based" focus has led to the successful development of programs such as the Patient-Centered Medical Home and the "ER 30 Minute Promise." Prior to coming to Atlantic General Hospital, Mr. Franklin served as the Chief Operating Officer of Shady Grove Adventist Hospital in Rockville, MD, and has served in healthcare management for over 25 years. Michael is a Fellow of the American College of Healthcare Executives, holds a Bachelor of Science in Health Sciences degree from Old Dominion University in Norfolk, Virginia, and a Master's of Science in Healthcare Administration degree from Virginia Commonwealth University – Medical College of Virginia in Richmond, Virginia.

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Colleen Wareing MS, BSN, RN. NEA-BC, FACHE

Ms. Wareing, Vice President of Patient Care at Atlantic General Hospital, received her Bachelor of Science in Nursing from the University of Delaware and her Masters of Science with a major in Nursing Administration degree from Columbia Pacific University. She received her specialty certification in advanced Nursing Administration through the AANC. Prior to coming to AGH, Ms. Wareing served as Emergency Service Director, and Assistant Vice President of Nursing at Peninsula Regional Medical Center in Salisbury, Maryland and as Vice President of Patient Care at Beebe Medical Center in Lewes, Delaware.

Ms. Wareing is a member of the Critical Care Nursing Association, American Organization of Nurse Executives, the American College of Healthcare Executives and the American Nurses Association.

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Name:	Michael A. Franklin, FACHE
Event Title:	2014 Congress on Healthcare Leadership
Program Title:	Leveraging Telehealth to Reduce Costs, Improve Outcomes in Small, Rural and Independent Hospitals (63X)
Relationship:	**Faculty**

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Michael A. Franklin — October 11, 2013

Signature — Date

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