Learning Goals for this session:

1. Identify characteristics of a great team and value of high performing healthcare teams.
2. Describe the impact of team based approaches have on clinical and process improvement in health care.
3. Recognize new efforts for healthcare teams in acute and chronic disease states.

Background

- Gaps in evidenced based delivery of care exist in almost all disease states (acute and chronic) and are being addressed by health systems and communities to improve health care.
- These gaps impair quality of the care and increase the costs.
- Barriers exist in team delivery of care in STEMI, cardiac arrest, acute stroke care, chronic heart failure, and type 2 diabetes.
- Examples of team based approaches to improving healthcare will be detailed.
In Health Science Research, Improving healthcare comes in 3 buckets:

1. Asking the right questions to design research methodology that yields exceptional research for less cost than is blowing through the ceiling now to bring us yet another “me-too” same class drug or device
   - Let’s apply what we already know from clinical trials to be evidenced based in population health
2. Applying Real World Evidence data to improve provider care, process improvement, and quality delivered care that impact clinical and QOL outcomes.
3. Engaging patients in their own management of their health care regimen - behavioral economics> What works?!

Institute of Medicine, 2001

From Evidence to Routine Practice
It takes an average of 17 years for new knowledge generated by randomized controlled trials to be incorporated into practice, and even then application is highly uneven

Institute of Medicine, 2001

Team Examples
- From Birth
- School & Sports
- College & Life
- Work
   - Large proportion of our waking hours are engaged in work
   - Rewarding, functional, and productive teams at work matter to healthcare providers quality of life and literally... in our line of work, LIFE, health, heart function, ability to speak or walk, to breathe
Team

A group of people with a full set of complementary skills required to complete a task, job, or project.

http://www.businessdictionary.com/definition/team.html

Characteristics of a Great Team

Team members:
- Operate with a high degree of independence
- Share authority and responsibility for self management
- Accountable for the collective goal, preferably a data driven goal
- Work toward a common goal they are passionate about and there are shared rewards

What does the Healthcare Team need?

- **Leadership**
  - Passion: “Fire in the belly” about provider quality and patient centered care
  - Values data that demonstrates gaps, an action plan can be put in place to improve quality

- **Mixed skill sets or strengths of Team members**
  - Everyone cannot be the visionary, need a maximizer, the work force

- **Resources** (human, fiscal, technology)

- **Work culture** = empowerment to meet their goals, organization support and value of individual team members and team output

- **Consistent meeting times, development, and training**

- **Data feedback that measures goals**

Value of high performing healthcare teams

- **Clinical teams**
  - save lives or improve clinical outcomes and quality of life outcomes

- **Quality teams**
  - all of the above and lowers:
    - cost per case, length of costly inpatient care without recidivism, and inappropriate use of high cost unnecessary procedures

- **Healthcare administration teams**
  - lead clinical and quality team in a fiscally accountable manner for the good of the community they serve and the brand of their health system.
Systems And Implementation Research
Health Services Research

Group Project Portfolio

- Complete
- In Progress
- Planning

- MYOCARDIAL INFARCTION
- CARDIAC ARREST
- STROKE
- HEART FAILURE
- NEURAL FIBRILLATION
- DIABETES

- RACE Era
- STEMI Accelerator
- RACE-CARS
- IMPROVE Stroke
- CONNECT-HF (South Carolina Area)
- IMPACT-AP (International)
- IMPACT-AP Sentinel Trial
- IMPACT-AP Premier AF trial

STEMI Systems of Care Teams

- Prehospital
  - First Responders
  - EMS Medical Directors
  - Emergency Medical Services
  - Paramedics
- Non-PCI Hospitals
  - Greeter
  - Triage RN
  - Emergency Medicine & Nursing
  - Internal Medicine or Cardiology
  - QI Administration

- Transport (ground, air)
- PCI Hospitals
  - All same as Non-PCI + Cath Lab Staff and Cardiologist, Interventional Cardiologist
- Post Hospital Care

Acute Vascular Emergencies

- STEMI
  - Cardiogenic Shock
- Cardiac Arrest
- Stroke
  - Aortic Aneurism

RACE (Reperfusion of Acute MI in Carolina Emergency Departments)

- Statewide system to overcome barriers for emergency cardiovascular care

- Grass roots effort 1st organized emergency myocardial infarction care
  - dispatch centers, EMS stations, emergency departments, transfer plans, and cardiac catheterization laboratories

- Program:
  - Established data collection and feedback
  - Established EMS and transfer plans for primary PCI and for each element of the system, with local customized approach
  - Conducted massive implementation training
  - Facilitated integration of EMS and hospital networks (common protocols)

- Program improved process and outcomes for AMI care.
1) Develop leadership, funding, data collection and feedback structure

2) Establish regional referral centers (STEMI, cardiac arrest, stroke)

3a) Hospital by hospital establishment of plan (review, consensus, training)

3b) EMS by EMS establishment of plan (review, consensus, training)

4) Test and refine how to implement/improve

Measurement & Feedback

STEMI Program. Media Alert - MIEMSS Designates 23 Maryland Hospital as Cardiac Interventional Centers. Media Alert - MIEMSS Designates 23 Maryland
**Conclusions**

- Our results highlight the opportunity to shift the focus from hospital door to first medical contact to improve regional STEMI care.
- Emergency department time is an important indicator of coordination of care between paramedics and hospitals and is associated with improved survival.
- Organizing regional STEMI care results in significant improvements in the percent of patients achieving national reperfusion goals.
- We identified numerically lower mortality among participating regions compared with national rates, suggesting that regional STEMI programs can provide important improvements in public health.
Mission: Lifeline ACCELERATOR Programs

ACCELERATOR 2

Regional Systems ACCELERATOR

Using learnings from ACCELERATOR 1 for acute STEMI regionalization

AIM:

The AHA's Implementation of Mission: Lifeline Discharge and Follow Up

To create regional response to STEMI emergency care in a timely, coordinated and consistent manner including target goals:

1) First EMS medical contact to first device deployed within 90 minutes

2) Transfer patient to device within 120 minutes respectively for ≥75% of STEMI patients

STEMI ACCELERATOR INTERVENTION SITES

- Regional leadership
- Increased funding
- National faculty mentoring coaches
- Regional kick-off meeting
  - Refine STEMI system goals and returning regions foci
  - Review sample cases for EMS and Transfer
- Centralized STEMI Data Mission: Lifeline Quarterly Reports
- Strategic pre assessment regional visit & conference calls
- Grant funded regional full time Mission: Lifeline staff to review data with hospital and regional teams
- Like in the original North Carolina RACE program

ACCELERATOR - 2

Final results at Late Breaking Clinical Trials at AHA Scientific Session in Anaheim, November, 2017

Regional STEMI Systems of Care: Results of the Mission: Lifeline STEMI ACCELERATOR - 2 Study

Background  Cardiac Arrest

- >400,000 Americans experience out-of-hospital cardiac arrest (OHCA) yearly.
- Survival has improved slightly over past 10 years to 8.3-10%.
- Institute of Medicine identifies OHCA as a major unsolved public health problem.
  - Comprehensive adoption of interventions to maintain blood flow for OHCA
  - Report highlights a successful model pioneered by our research team in NC Regional Approach to Cardiovascular Emergencies (RACE)

HeartRescue RACE CARS

- 2010 Medtronic established HeartRescue, a 5 year effort to improve treatment and survival across 5 geographic areas.
- Given its established statewide collaboration, RACE program chosen to implement coordinated cardiac arrest interventions and to share our approach with other partner states.
- Combined expertise of community leaders, EMS, 911 and fire department employees, and health systems leaders
- Focused on improving bystander CPR, first responder and EMS response, post cardiac arrest care
- Massive implementation training efforts and public outreach.

RACE CARS

- The healthcare “Team” now includes the Public and emphasis on Dispatch and First Responders
- Registry implemented in 73 counties of North Carolina covering 88.5% of state population.
- Program led to a 25% improvement in bystander CPR and a 37% increase in survival with good brain function between 2010 and 2014.
- Improvement linked to bystander CPR and defibrillation. 2-3 fold improvement in survival with combination of bystander CPR and either bystander or first responder defibrillation.
- Despite overall improvement, large differences in treatment and outcome persisted across the state.

Variability in Bystander CPR and Survival for Cardiac Arrest in RACE-CARS Counties.
Key lessons from HeartRescue

- Dispatch plays key role in enhancing bystander CPR and AED use
- First responders, who arrive at scene in half the time as EMS, are critical to early defibrillation
- AED use by bystanders remains very low, and much lower than countries like Denmark that have shown the benefits of dedicated programs to enhance AED use
- Fire Station Locations

Objective
To increase the rate of and speed of cerebral artery reperfusion by organizing coordinated regional STROKE Care with measurement and feedback.

1) Develop leadership, funding, centralized data structure
2) Establish Regional Comprehensive Stroke Centers (CSC) to manage all acute presentations (lodging and positioning patients in appropriate hospital systems, triage, and prioritization of patients with stroke critical to delirium, data management and feedback)
3a) HOSPITAL by hospital (Primary Stroke Center, Stroke Ready Center, Other) establishment & implementation of acute STROKE Plan (review treatment and process plans, consensus, training)
3b) EMS by EMS establish & implement acute STROKE plan (prehospital treatment and process plans, consensus, training)
4) Quality and outcomes: Hub and spoke data program that provides integrated system data for "Measurement & Feedback" through remote (20+ base hospital specific or non-specific data center by hospital and by system)
5) Improve public recognition and access to care

IMPROVE Stroke Care Process
- Assemble consortium of high functioning regional stroke centers interested in working collaboratively to improve the outcomes of patients with acute stroke
- Develop a Manual of Operations reflecting what is currently known to be "the best approach to acute ischemic stroke care" and commit to implementing these processes at the Hub as well as spoke level within each participating center
- When best practices are not known, use this as opportunity for learning by comparing across centers and within center (before and after)
- Collect data from first contact with health system (prehospital) through to outcomes at 90 days post stroke
- Share data as close to real time as possible with participating centers in order to drive quality improvement
**IMPROVE Stroke Care - Program Goals**

- Access to Health Care
- Best Clinical Practices
- Good Outcomes
- Patient and Community Engagement

**Chronic Patient Management**

**CONNECT-HF:** Care Optimization through patient and hospital Engagement Clinical Trial for Heart Failure

A large-scale, pragmatic, cluster-randomized trial to evaluate 2 heart failure quality-improvement initiatives, compared with usual care, with the goal of driving evidence into practice and improving patient outcomes.
### Steering Committee Members

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### Study Objectives

- **Primary objective** is to assess the effect of 2 QI initiatives compared with usual care on HF outcomes and HF quality metrics at 1 year after discharge for participants with acute HF and reduced ejection fraction.

  - 2 Co-primary endpoints:
    1. Time to first HF rehospitalization or death within 12 months after discharge
    2. Improvement in an opportunity-based composite score for adherence to quality metrics for HF

- **Secondary objectives** are to examine the effect of 2 QI interventions compared with usual care, on the following:
  - Per-opportunity adherence rate for site-level HF discharge quality measures
  - Participant-level healthcare expenditures

- **Exploratory objectives** of this trial are to examine the effect of 2 QI initiatives compared with usual care on the following:
  - Participant-reported medication adherence
  - Change in KCCQ and EQ-5D

### Patient Eligibility

**Inclusion**

- Age ≥ 18 years
- Primary reason for hospitalization is acute on chronic HF
- LVEF ≤ 40% on last local measurement
- Planned discharge to home or other care facility where patients manage medications

**Exclusion**

- Prior heart transplant or current/planned LVAD
- Chronic kidney disease requiring dialysis
- Life expectancy of less than 1 year due to other illness
- Are unable to utilize mobile applications or participate in longitudinal follow-up
Hospital Eligibility

Hospitals eligible for inclusion in this trial must fulfill the following criteria:

• Treat ≥ 50 patients for acute or chronic HF annually
• Have the capacity to be randomized to a system-based QI intervention

CONNECT-HF Study Design

160 US Sites and 8000 patients

CONNECT-HF Registry

Patient Focusing Eligibility

Health System Eligibility

Digital & Direct

Usual Care

Patient-Facing Digital

Health system engagement to improve local QI programs

Both interventions

Opportunity-based composite score for adherence to quality metrics

• Evidence-based β-blockers at ≥ 50% target dose
• ACE-I, ARB, or sacubitril/valsartan use at ≥ 50% target dose
• Aldosterone antagonist use
• Anticoagulation use in patients with atrial fibrillation
• In patients with an LVEF ≤ 35%, ICD placement including CRT for patients with sinus rhythm, a LBBB, and a QRS ≥150 ms
• Attendance at 1 or more of: multidisciplinary HF disease management program, a cardiac rehabilitation program, or HF group educational classes
Patient-Facing Digital Engagement

Optimizing chronic disease management and secondary prevention efforts requires sustainable and durable change in patient behavior.

DISCHARGE Study Coordinator conducts behavioral assessment, onboarding of selected apps and devices.

Patient uses 1 of 2 apps at home.

Patient-facing digital strategy substudies

Can mobile health technologies be used to change behavior?
1. Rituals that may improve medication and behavior adherence
2. Social support networks/accountability that may improve medication and behavior adherence
3. Rewards/punishments that may improve medication and behavior adherence

Health System Direct Engagement

A health system direct engagement strategy that will involve:

- Site visits
- Ongoing mentoring from experienced teams
- Health systems and hospitals designing local quality improvement plans

Health System Direct Engagement Tools

- Learning Management System CME modules on disease states, management of acute and chronic HF
- Hospital management protocols
- Duke PillBox
- Supplemental discharge patient materials