USING DATA REGISTRIES TO IMPROVE CARE FOR HEART FAILURE PATIENTS
CHERIE’ BOXBERGER, MS. MBA. CPHQ
REGIONAL VICE PRESIDENT – QUALITY & SYSTEM IMPROVEMENT
AR CO OK NM TX WY

FINANCIAL DISCLOSURE:
AMERICAN HEART ASSOCIATION EMPLOYEE
## Guideline Directed Medical Therapies

<table>
<thead>
<tr>
<th>Guideline Recommended Therapy</th>
<th>Relative Risk Reduction in Mortality</th>
<th>Number Needed to Treat for Mortality</th>
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<td>26</td>
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<td>ARNI</td>
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<td>41%</td>
</tr>
<tr>
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<tr>
<td>Hydralazine/Nitrate</td>
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</tr>
<tr>
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## Guideline Directed Medical Therapies – ARKANSAS – 4 SITES  1531 PATIENTS

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BEST PRACTICES TO IMPROVE GUIDELINE DIRECTED MEDICAL THERAPIES IN ARKANSAS HEART FAILURE PATIENTS

GOAL: > 85%
Using Data Registries to Improve Care for Heart Failure Patients

Texas Health Arlington Memorial Hospital
January 2020
THAM Facility Overview

- 369 bed, faith-based, full service community hospital
- HF Certification through Joint Commission
- Magnet Designation for Nursing
- Mended Hearts Support Group
- Cardiac Telemetry Unit
- Medical/Surgical Intensive Care
- Outpatient Clinic –Chronic Disease
- Cardiac Rehabilitation Services
- Multidisciplinary Cardiovascular Committee
Gold Plus Award for 2017, 2018 and 2019

The American Heart Association proudly recognizes

Texas Health Arlington Memorial Hospital
Arlington, TX

Get With The Guidelines®-Heart Failure GOLD PLUS Achievement Award Hospital

The American Heart Association recognized this hospital for its continued success in using the Get With The Guidelines®-Heart Failure program. Thank you for applying the most up-to-date evidence-based treatment guidelines to improve patient care and outcomes in the community you serve.*

Nancy Brown
Chief Executive Officer
American Heart Association

Eric Smith, MD
Chairman, Get With The Guidelines® Steering Committee

John Warner, MD
President, American Heart Association

*For more information, please visit Heart.org/GWTGQualityAwards.
Heart Failure Volume and Outcomes

Volume: Number of admissions

Expected Readmission Rate vs Readmission Rate

- 2016
- 2017
- 2018
- 2019
Collecting and Using Data
Get With the Guidelines (GWTG) and Dashboards
Data Collection and GWTG

• HF Coordinator abstracts and enters data into Get With the Guidelines (GWTG)

• GWTG
  • Reports to monitor
    • Hospital Trends
    • Benchmark National and Regional
Dashboard and Data Analysis

- Dashboard
  - Provides quick summary
  - Color Code
    - Identifies Good Performance and Opportunities
- GWTG Reports
  - Historic Performance
  - Benchmarking
- Committee Analysis
  - Drill Down on Low Performing Metrics
  - PDSA to Improve
Daily Alert-Concurrent Review

Concurrent Review allows:

- **Real Time identification of possible care issues**
- **Standardize communication process to email or contact physicians/nurses for prompt resolution**
Heart Failure Patient Care Measures
Trends and Comparison to all GWTG Hospitals

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldosterone Antagonist at D/C</td>
<td>33%</td>
<td>42%</td>
<td>65%</td>
<td>87%</td>
<td>47%</td>
</tr>
<tr>
<td>Anticoagulation for Afib</td>
<td>97%</td>
<td>97%</td>
<td>97%</td>
<td>100%</td>
<td>88%</td>
</tr>
<tr>
<td>Evidence-based Beta Blocker</td>
<td>90%</td>
<td>96%</td>
<td>95%</td>
<td>97%</td>
<td>24%</td>
</tr>
<tr>
<td>Post Discharge 7 Day Follow-Up Appt</td>
<td>50%</td>
<td>79%</td>
<td>81%</td>
<td>100%</td>
<td>75%</td>
</tr>
<tr>
<td>HF Education Tool Kit</td>
<td>0%</td>
<td>10%</td>
<td>11%</td>
<td>89%</td>
<td>50%</td>
</tr>
</tbody>
</table>

- 163% increase from 2016
- 8% increase from 2016
- 100% increase from 2016
- 754% increase from 2017
Improving Performance
Post Acute Care
Outpatient Chronic Care Clinic
Opportunity Identified

• Using Get With the Guidelines data, an opportunity was identified regarding scheduling a follow-up appointment within 7 days after discharge

• High HF 30-Day Readmission rates

• Lack of Access to Timely Follow-up care in our Community
Plan: Data Drill Down Findings

- Barriers to making/attending follow-up appointment with patients:
  - No or Limited Post-Acute Provider
  - Lack of access to Transportation
  - Did not perceived follow-up care as priority
Do: PI Actions to Improve

- Provide Appointment Prior to Discharge and include in DC Instruction
- Utilize Clinic as Bridge for timely FU if pt’s Provider not available within 3-7 days (or has no provider)
- Easy for Care Transitions to schedule appt
  - Computer order for FU Appointment coordination
  - Care Transition Staff ability to schedule
  - Phone access to Clinic Scheduler
- Educate patients on importance of scheduling/keeping follow-up appointments
- Provide patient information or arranged transportation for follow-up visit
Follow-up Appointment Within 7 Days of Discharge

- 2016: 50%
- 2017: 79%
- 2018: 81%
- 2019: 100%

GWTG Benchmark: 67%

100% increase
THAM Outpatient Clinic Overview

• Created to serve the people in our community who have difficulty obtaining access to healthcare
  • Uninsured
  • Underinsured
  • Medicaid
  • Medicare
  • Undocumented
  • End stage or patients having difficulty managing their illness (as supplement to PCP or specialist)

Multidisciplinary Team Approach
• Nurse Practitioners
• Registered Nurses
• RN Case Manager
• Social Worker
• Medical Assistant (bilingual)
• Arlington Fire Department Paramedics – home visits
Outpatient Clinic

• Works to provide evidenced-based care to improve patient outcomes
  • Reduce complications
  • Prevent ED visits
  • Prevent Hospital Admissions/Readmissions
Continued Assessment in Clinic

• Assess for barriers to success in improving health
  • Provide medical care
  • Provide education
  • Access community resources
  • Provide medications/medical equipment
  • Provide home support through AFD Community Paramedic Program
• Assist to obtain PCP/medical home
• Assist to obtain Medicaid coverage
Outpatient Clinic patients have a readmission rate that is better than general hospital rate and national benchmark.
THAM Heart Failure Outpatient Clinic Patient Evidence Based Care Delivery
Oct 2013 – 2018

Patients Receiving Evidence-Based Care

<table>
<thead>
<tr>
<th></th>
<th>Percent Compliance</th>
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<td>HF Self- Management</td>
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<td>HF Appropriate Meds</td>
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<tr>
<td>HF Weight Monitoring</td>
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- HF Self- Management
- HF Appropriate Meds
- HF Weight Monitoring

- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
THAM Heart Failure Outpatient Clinic Patient Outcomes

Quality of Life Scores improved by 22.1%
Ben Taub Hospital

• Acute Care Hospital

- Level 1 Trauma Center
- 444 licensed-beds
- 102,987 emergency visits
- 20,551 inpatient admissions
- 3,440 deliveries
- 12,609 surgeries
- 251,414 outpatient visits

- Data Range: Jan 1, 2017 – Jan 31, 2018
- Data source: FY17 P11-12; FY18 P11 Harris Health System Monthly Stat Trend Report
Baseline State of CHF Management at Our Institution

Largely Unknown
The only measure reported was readmission and mortality
Reason: Switch from Joint Commission Accreditation to DNV
DNV does not require to monitor CHF Core measures
Value of Clinical Data Registry

- Clinical data registries provide significant data on:
  - Use of evidence-based practice guidelines to evaluate proportion of patients receiving recommended treatment
  - Compare the effectiveness of different treatments for the same disease or condition
  - Evaluate different approaches to a procedure and to monitor the safety of implanted devices
  - Support health care education, accreditation and certification.
  - Ensure that payment is adjusted based on the quality of care provided
  - Give patients the information they need to make better choices
Value of Registry to CHF Management at Ben Taub

- Foundation to establish a program with minimal financial investment
- Commitment from administration to support the program
- Increased physician awareness and compliance with GRT in CHF
- Establish metrics to drive quality care in CHF
Get With The Guidelines®- HF

• 702 U. S. hospitals are participating in the American Heart Association’s GWTG – Heart Failure program
• Ben Taub Hospital/Baylor was awarded a grant from the AHA to participate in this program
• Program started in mid Feb 2018
Get With The Guidelines® - HF
Achievement Measures

- Evidence-based beta blockers
- Angiotensin converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB), or ARNI at discharge
- Measure left ventricular function (EF by Echo, Nuc or cath)
- Post-discharge appointment for HF patients
- Readmission at 30 days
Get With The Guidelines® - HF
Other Quality Measures

- Aldosterone antagonist at discharge
- Anticoagulation for atrial fibrillation
- Hydralazine/nitrate at discharge
- DVT prophylaxis
- CRT-D or CRT-P placed or prescribed at discharge
- ICD counseling or ICD placed or prescribed at discharge
- Influenza vaccination during flu season
- Pneumococcal vaccination
- Follow-up visit within 7 days or less
Initiative by BT Cardiology for Coordination of Care

- Hospital Executives / Internal Med and out patient clinic leadership / Cardiology leadership
- Nursing Leaders
- Allied Services:
  - Social work, Pharmacy, Dietary, Home Health
- IT personnel
- Quality Department
Intervention I

- Met with Cardiology Faculty and Fellows to inform all about the program and secure their “buy in” to participate

- Consult placed in EPIC to Cardiology on all patients admitted with primary diagnosis of CHF

- Cardiology Consult Team will ensure patients are:
  - properly worked up and diagnosed
  - optimized on HF- GRT with attempt to use target doses of recommended meds
  - evaluation for ICD placement
  - Baseline and pre D/C BNP and Troponin

- Create Smart phrase for HF in EPIC to be used by consult team (all boxes have to be checked)
Intervention II

- Engage IM and FM faculty and residents with program
  - Email Memos to everyone to explain the program and expectations
  - One on one sessions with physicians
  - Grand rounds to PCP
  - Specific individual feedback by email on individual patients
  - Monthly orientation to housestaff
Intervention III

- Hired a Heart Failure Coordinator/Navigator
  - Review EPIC documentation: education, follow up,
  - Develop individualized plan of care
  - Assess and identify specific patient/family needs
  - Evaluate effectiveness of education
  - Coordinate patient referrals
  - Feedback on care provided to patients
Intervention IV

- **Nursing Education**
  - Mandatory on boarding and annual CHF Module for nurses' education
  - Cohort CHF patients into the same units
  - I-PADs One hour patient education by coordinator
  - CHF education fliers attached to patient instructions at D/C with warning signs to watch for and advice on what to do
Intervention V

• Transition of Care Consult
  • Case management and Social Worker Services
    • Transition of care to ambulatory facility
      • Order entered in EPIC by inpatient case managers to assign a medical home for the patients (monitored for compliance)
        • Home Health
        • Medication management
        • Out patient pharmacy to call patients who need help
        • Meals on Wheels, etc…
  • Physical therapy
  • Pastoral care support
Intervention VI

• Prevention
  • BP management
  • Lipid management
  • DM management
  • Anemia
  • Sleep Apnea
  • Depression
  • Nutrition
Intervention VII

• Patient Education
  • Initiated on Day 1 and reinforced daily
    • Diet
    • Fluid restriction
    • Medications
    • Daily weight monitoring
    • Tobacco cessation
    • Exercise
    • Signs and sx of CHF
    • When to call clinic
    • When to call 911
    • ICD discussion
Follow up Interventions

- Phone call at 48 hours and 3 weeks by CHF coordinator
- One week clinic visit with PCP or home visit arranged
- No-show patients are called by phone and are given another follow up within 7 days
- Cardiology clinic visit within 2-4 weeks
- Patients are encouraged to walk into Cardiology clinic within after D/C if symptoms worsen
- Added another Cardiology clinic session dedicated to CHF follow-ups
- Increase template for general cardiology to accommodate more CHF patients early follow up
Data Collection

• Abstractor
  • Non medical person
  • Given access to EPIC
  • Trained to collect data and submit to web based AHA registry
  • Support by local nursing leadership

• Transitioned data abstraction to the Quality Department at the hospital
ACEI/ARB or ARNI at Discharge

<table>
<thead>
<tr>
<th></th>
<th>Q4 2017</th>
<th>Q1 2018</th>
<th>Q2 2018</th>
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<tr>
<td></td>
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<td>84%</td>
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Evidence-Based Specific Beta Blockers

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<tr>
<td>2017</td>
<td>70%</td>
<td>89%</td>
<td>82%</td>
<td>88%</td>
<td>95%</td>
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<td>2018</td>
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Post Discharge Appointment for Heart Failure Patients

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<th>Q4</th>
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<tr>
<td>2017</td>
<td>69%</td>
<td>92%</td>
<td>85%</td>
<td>93%</td>
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<td>2018</td>
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Achievement Measures by Month

- **Cardiologist**
- **Non-Cardiologist**
- **All Physicians**

### ACEI/ARB or ARNI at Discharge

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<td>80%</td>
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<td>75%</td>
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Economic Data – preliminary estimate

- Pre-intervention compared to Post-intervention
- 693 Bed Days vs 548 Bed Days
- > $286,000 savings per year – conservative estimate

(based on $1975 per day / new data suggests it is more like 2,740. )
RESULTS OF USING A NATIONAL REGISTRY (GWTG)
GWTG Accelerates Case Growth

Average annual HF cases per hospital and year over year growth 2014 - 2017

- On average, GWTG participant programs grew 21% over 4 years, attracting about 50 additional cases year over year, while control group hospitals lost volume.
Case Growth: <200 Bed Hospitals
Average annual HF cases per hospital and year over year growth 2014 - 2017

- Small-Sized (<200 beds) GWTG participants grew 7.1% YOY while peer-facilities lost HF volume - 4.8% YOY.
- GWTG hospitals under 200 beds had the greatest increase in volume and the lowest length of stay.

<table>
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<th>Size Group</th>
<th>GWTG</th>
<th>Control</th>
<th>Delta</th>
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<tbody>
<tr>
<td>&lt;200 Bed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>787</td>
<td>1039</td>
<td>+11.8%</td>
</tr>
<tr>
<td>2015</td>
<td>879</td>
<td>1009</td>
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</tr>
<tr>
<td>2016</td>
<td>891</td>
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<td></td>
</tr>
<tr>
<td>2017</td>
<td>964</td>
<td>897</td>
<td></td>
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Ave YOY Growth:
- GWTG: 7.1%
- Control: -4.8%
- Delta: +11.8%
Case Growth: 200-400 Bed Hospitals
Average annual HF cases per hospital and year over year growth 2014 - 2017

➢ Mid-Sized (200-400 Beds) GWTG participants attracted more patients and grew 6.4% faster on average than peer-matched facilities, adding more than 100 cases per year on average.
### Case Growth: >400 Bed Hospitals

Average annual HF cases per hospital and year over year growth 2014 - 2017

<table>
<thead>
<tr>
<th>Size Group</th>
<th>GWTG</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;400 Bed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avg. Total Discharges</td>
<td>Ave YOY Growth</td>
</tr>
<tr>
<td>2014</td>
<td>1,028</td>
<td>1,134</td>
</tr>
<tr>
<td>2015</td>
<td>1,089</td>
<td>1,191</td>
</tr>
<tr>
<td>2016</td>
<td>1,138</td>
<td>1,164</td>
</tr>
<tr>
<td>2017</td>
<td>1,160</td>
<td>1,226</td>
</tr>
</tbody>
</table>

- **GWTG** 4.1% Ave YOY Growth
- **Control** 2.7% Ave YOY Growth
- **Delta** +1.4% Ave YOY Growth

- GWTG Hospitals with more than 400 beds grew admissions 1.4% YOY faster than control hospitals.
Reductions in Length of Stay

- Hospitals in GWTG programs started at an Average Length of Stay (ALOS) 0.40 days higher than the control group, but reduced ALOS by 0.40 days over 4 years, surpassing the 6.05 day national benchmark.

- Over the same period, ALOS in the control group decreased by 0.21 days, half the improvement seen in the GWTG programs.
Hospitals under 200 beds had the shortest average length of stay among the GWTG size groups.

This group decreased ALOS by 0.17 days while the control group reduced length of stay by less than 0.06 days between 2014 and 2017.
Reductions in Length of Stay: 200-400 Beds

➢ Although GWTG participants in the 200-400 bed size group started with a considerably higher ALOS, ALOS decreased by 0.59 days, considerably faster than non-GWTG programs and approaching the 2017 benchmark of 6.05 days.

➢ Overall, the ALOS decreased 5.4% faster in the GWTG group than controls between 2014 and 2017.
Reductions in Length of Stay: >400 Beds

➢ GWTG programs in the >400 bed group started with a higher ALOS than programs in the control group and reduced length of stay at the same rate as controls to beat the 6.05 day National Benchmark.

➢ On average, the ALOS at the GWTG hospitals decreased by 0.35 (5.5%) days between 2014 and 2017.

<table>
<thead>
<tr>
<th>Size Group</th>
<th>Year</th>
<th>ALOS</th>
<th>ALOS Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;400 Bed</td>
<td>2014</td>
<td>6.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>6.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>6.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>5.99</td>
<td></td>
</tr>
</tbody>
</table>

GWTG
-0.35 Days -5.5%
ALOS Reduction

Control
-0.35 Days -5.7%
ALOS Reduction

Delta
0.0 Days
+0.2% ALOS Increase
Heart Failure is the cause of 42% hospitalization and cost in the Medicare program.

A reduction in ALOS of 0.4 days (6.3%) translates to hundreds of days and hundreds of thousands of dollars saved depending on the program size.

Daily cost of $2,480 derived from FY16 Medicare reimbursement per case, case mix of DRGs 291-293, and ALOS.
HF Readmission rates at GWTG hospitals are lower than control group hospitals. However, between 2014 and 2017, readmission rates at GWTG hospitals increased slightly while controls came down slightly.

Readmission rates were not significantly impacted by.
HF Readmission rates at GWTG hospitals are lower than control group hospitals.

Overall, GWTG participants readmitted 1.2% fewer patients, a metric which translates to significant Medicare reimbursement penalties.
Recovery in a SNF or LTAC can be one of the most costly aspects of HF treatment. Since 2015, GWTG hospitals have discharged 2% more patients to home rather than to a second health care facility. Furthermore, the share of patients that expired or were discharged to hospice decreased 1% at GWTG hospitals.
Conclusions

Grow Revenue
- HF case volume at hospitals participating in GWTG collectively grew 6.8% faster YOY than their peers between 2015 and 2017.
- GWTG certification attracts
  - Patients that trust the AHA brand
  - Physicians seeking highest clinical quality standards
  - Payers looking for reductions in ALOS and readmission

Cut Costs
- GWTG programs reduced their length of stay by 0.4 days, cutting direct costs.
- Readmission rates at GWTG hospitals are lower than their peers, reducing penalties levied by Medicare and uncompensated care for readmissions.
- More patients at GWTG programs are discharged to home, saving thousands in post-acute care.
- Small changes in ALOS, Readmissions, and Discharge Disposition have a substantial impact on reducing cost
HOSPITALS OF ALL SIZES CAN BENEFIT FROM USING A NATIONAL HEART FAILURE REGISTRY

$750 - $3500 PER YEAR
GET STARTED TODAY!