Infusing technology into chronic disease management

We Have An App For That!

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Disclosures

All planners and presenters have signed conflict or interest disclosures and no conflicts of interest have been declared and no commercial support have been received

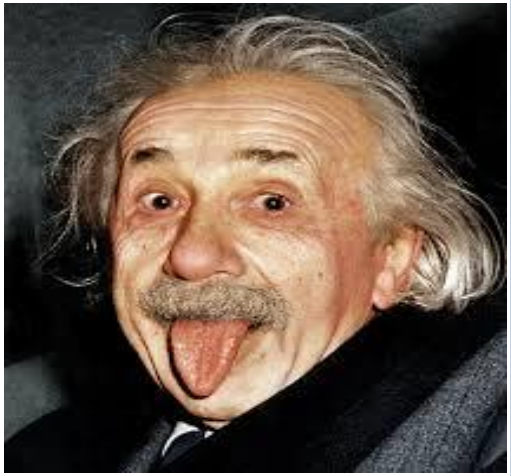
We would like to thank Sigma Theta Tau International for this opportunity to share our work with our nursing colleagues from around the globe

United States of America

AtlantiCare a member of Geisinger Health System:

- Located in Southern New Jersey
- Non-Profit healthcare organization serving diverse urban and rural populations
- 567 bed teaching hospital
- Level I trauma center, comprehensive stroke center, interventional cardiology providing open heart surgery
- Ambulatory services including primary care, urgent care, and specialty care locations throughout the state

Well-Know 'Jersey' Residents

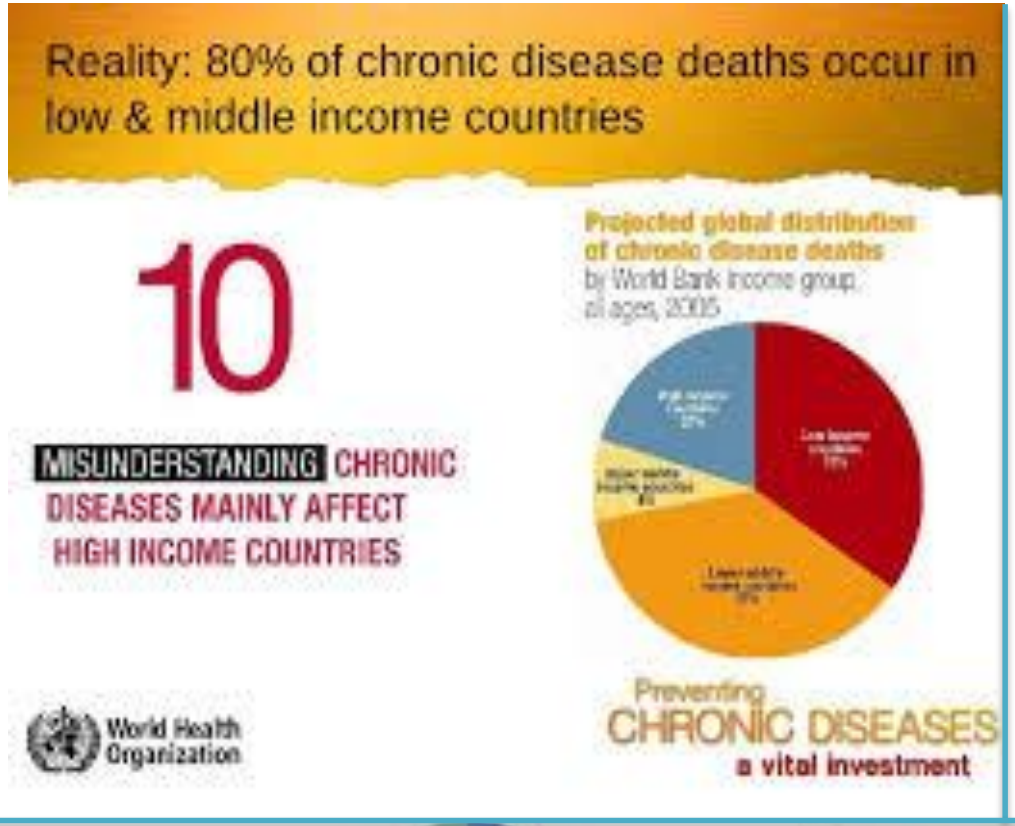


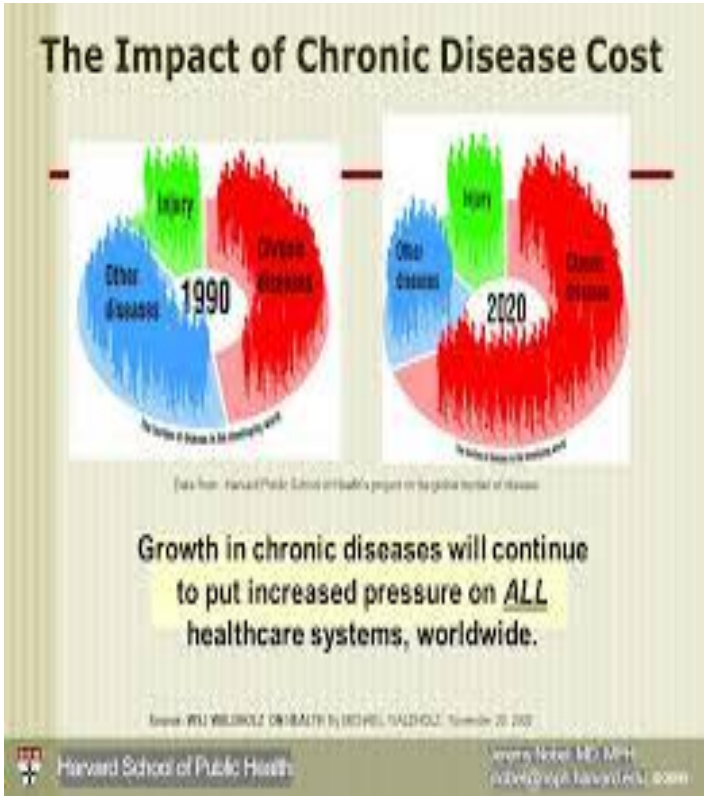
Objectives

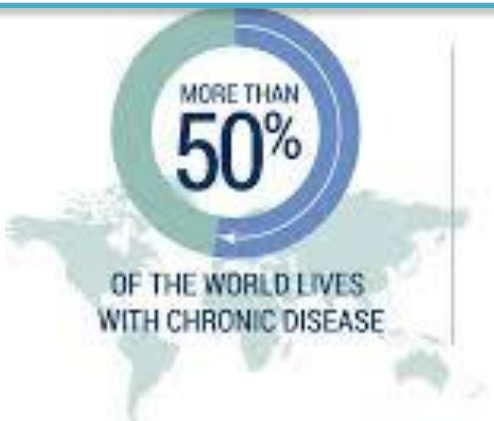
Upon completion of this educational presentation the learner will be able to:

- Describe at least three features of the 'Manage ME' chronic condition self-management education model that serve to ensure the delivery of self-management focused patient education across the healthcare continuum in that is: standardized, patient –centric, consistent, collaborative, progressive, and successful
- Identify at least three opportunities for improvement within current self-management education delivery models
- Describe at least three potential benefits of infusing technology into the daily self-management practices of patients living with chronic conditions

Background


Reality: 80% of chronic disease deaths occur in low & middle income countries
10
MISUNDERSTANDING CHRONIC DISEASES MAINLY AFFECT HIGH INCOME COUNTRIES
Projected global distribution of chronic disease deaths
by World Bank income group, all ages, 2005
World Health Organization
Preventing CHRONIC DISEASES a vital investment


The Impact of Chronic Disease Cost
Injury
Other diseases
1990
Chronic diseases
2020
Growth in chronic diseases will continue to put increased pressure on ALL healthcare systems, worldwide.
Harvard School of Public Health


MORE THAN 50%
OF THE WORLD LIVES WITH CHRONIC DISEASE

BY 2020, A PROJECTED 81 MILLION AMERICANS
WILL HAVE MULTIPLE CHRONIC CONDITIONS

99%
OF DISEASE MANAGEMENT IS IN THE HANDS OF INDIVIDUALS AND THEIR FAMILIES

World Health Organization

“Adherence has been identified as one of the most important modifiers of over-all healthcare-system effectiveness”

We Have An App For That!

Addresses the Following Common Causes of Decreased Adherence (WHO)

- Impaired knowledge to **Improved knowledge**
- Decreased activation to **Increased activation**
- Impaired support system to **enhanced support system** via technology/connectivity to healthcare team
- Impaired physical ability – ease of use of Wow Me app in **home environment**
- Financial constraints – **eased by free** Wow Me app & increasingly competitively priced mobile phones & plans

Across the Generations & Cultures

Ever-present use of technology

Wow Me App is a Technological Disrupter

Leverages addictive nature of technology to change behaviors

Limited empirical research

Positive Behavioral Change

Connected health technologies (e.g. diet & fitness apps) promote positive behavioral changes through simple psychological mechanisms
(Fitzgerald et al., 2016)

Technology-based interventions increase adherence to self-management behaviors
(Su, et al., 2014)

Negative Behavioral Change

- Relationship problems (bullying etc.)
- Work intrusion
- Dangerous use (e.g. using whilst driving resulting in fatal traffic accidents)

- Scholars believe it is an addiction however there is scare evidence to support that it is an legitimate addictive behavior
(Billieux, et al., 2015)

How long does it take to form a new habit?

Timeline

- Common myth promoted by self-help gurus is **21** days
- Academic study triples & places it at **66** days
- Anywhere from 18 days to 254 days (2 to 8 months)

Habits are a Process not an Event

"Missing one opportunity to perform the behavior did not materially affect the habit formation process"
(Lally et al., 2009)

Slips and missteps are acceptable and part of a process of change

Measurement Instruments working in Synergy

Patient Activation Measure (PAM)

- 10 statements to assesses knowledge, skills and confidence for self-management.
- PAM segments responses into one of four progressively higher levels of activation (1-4)
- Identifies optimal learning opportunities

(Insignia Health, 2014)

- Self-scored from
  - 1 "disagree strongly"
  - 4 "agree strongly"

Self-Care of Heart Failure Index (SCHFI)

- Questions 3 sections

A. Routine - 10 items e.g. wt., meds etc.

B. Trouble breathing or ankle swelling?

- Used a remedy (e.g.. take an extra water pill)?
- Did it help?

C. Confidence in symptom recognition?

- Self –scored from
  - 1 "Never or Rarely" to
  - 4 "Always of Daily"

Example of activation and Formation of a new routine using Wow Me app

Project timeframe of 30 Days

- Every participant sent at least one completed "patient log" every seven days obtained via the Wow Me app messaging functions

(included daily weight, symptom assessment , HR, BP as appropriate)

- 4 Logs in 30 days

PAM Gains in Activation = **highly likely** to persist long term

Goal achieved to increase adherence

- **Engaged** - acceptance of personal responsibility & ownership of their health
- Taking an **active role** in their own healthcare – problem solving with self-remedy
- **Assertiveness** - increased confidence: acted on coaching to contact a provider for guidance
- **Partnership** – equality within team
- Being able to **maintain lifestyle changes** (daily weights, symptom assessment)

Changing behavior & reducing hospital admissions

Outcome	n=25
Participants that were admitted to the emergency department or hospital during 30-day intervention timeframe (Self-reported/confirmed by medical residents)	0
App. prompted a call to provider	18
App. prompted an office visit with provider	6
Caregivers that plan to continue app. use	10
Participants plan to continue app. use	18

Opportunities for improvement

- Multiple educators (nurses, providers, health-coaches, etc.) - ***All with varied levels of expertise and confidence***
- Varied educational resources across continuum
- Lack of standardization across the continuum- led to inconsistent and conflicting information
- Adult Literacy & Health Literacy
- Cultural sensitivity

‘Manage ME’ self-management focused Education Delivery Toolkits

Heart Failure Toolkit Implemented- Circa 2009

Diabetes Toolkit Implemented- Circa 2012

Addresses Educational Opportunities

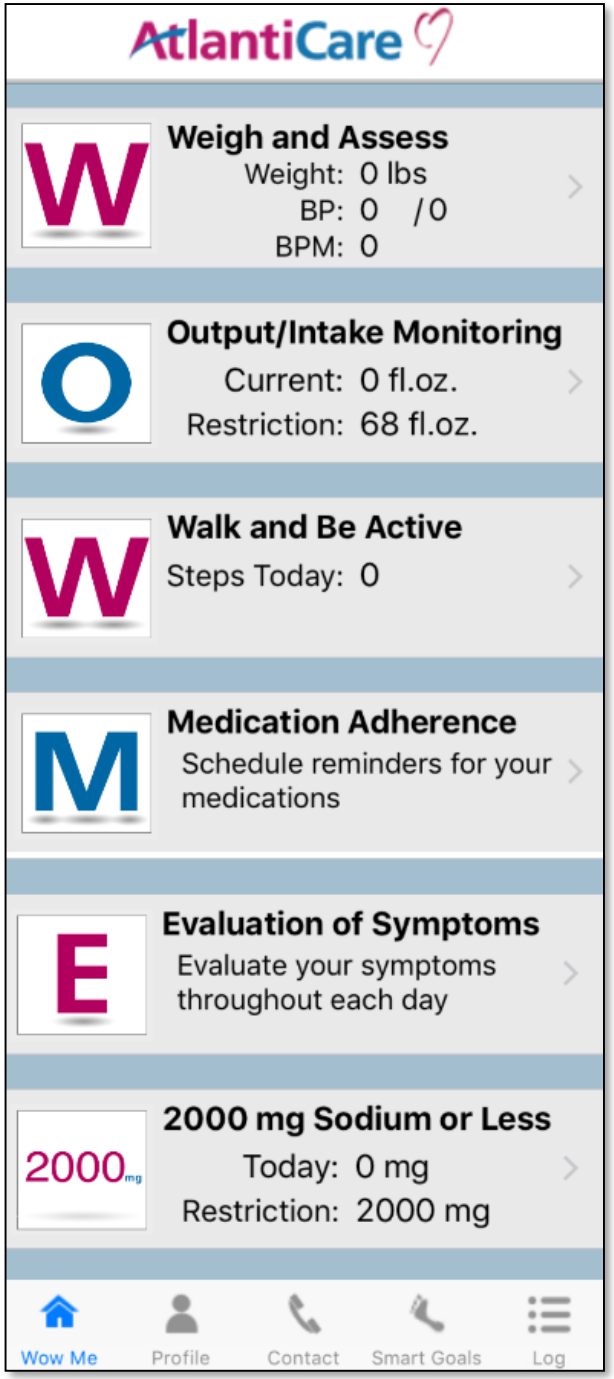
- Consistent delivery by all healthcare team members (regardless of education, experience and comfort levels)
- Standardized educational message (easily updated)
- Patient centric with imbedded knowledge assessments
- Optimized popular technological advances

- Reduces time and paper
- Simplifies overwhelming conditions
- Graphics and use of plain language (11yrs) with intuitive navigation
- App available in Spanish & Portuguese (Working on Mandarin & Hindi)
- Successfully bridges the healthcare continuum

If you have downloaded the app – let's start the interactive experience!

WOW ME 2000 HEART FAILURE SELF-MANAGEMENT SMART DEVICE APP.

- Navigation Bar
  - Wow Me
  - Profile
  - Contact
  - Smart Goals
  - Log

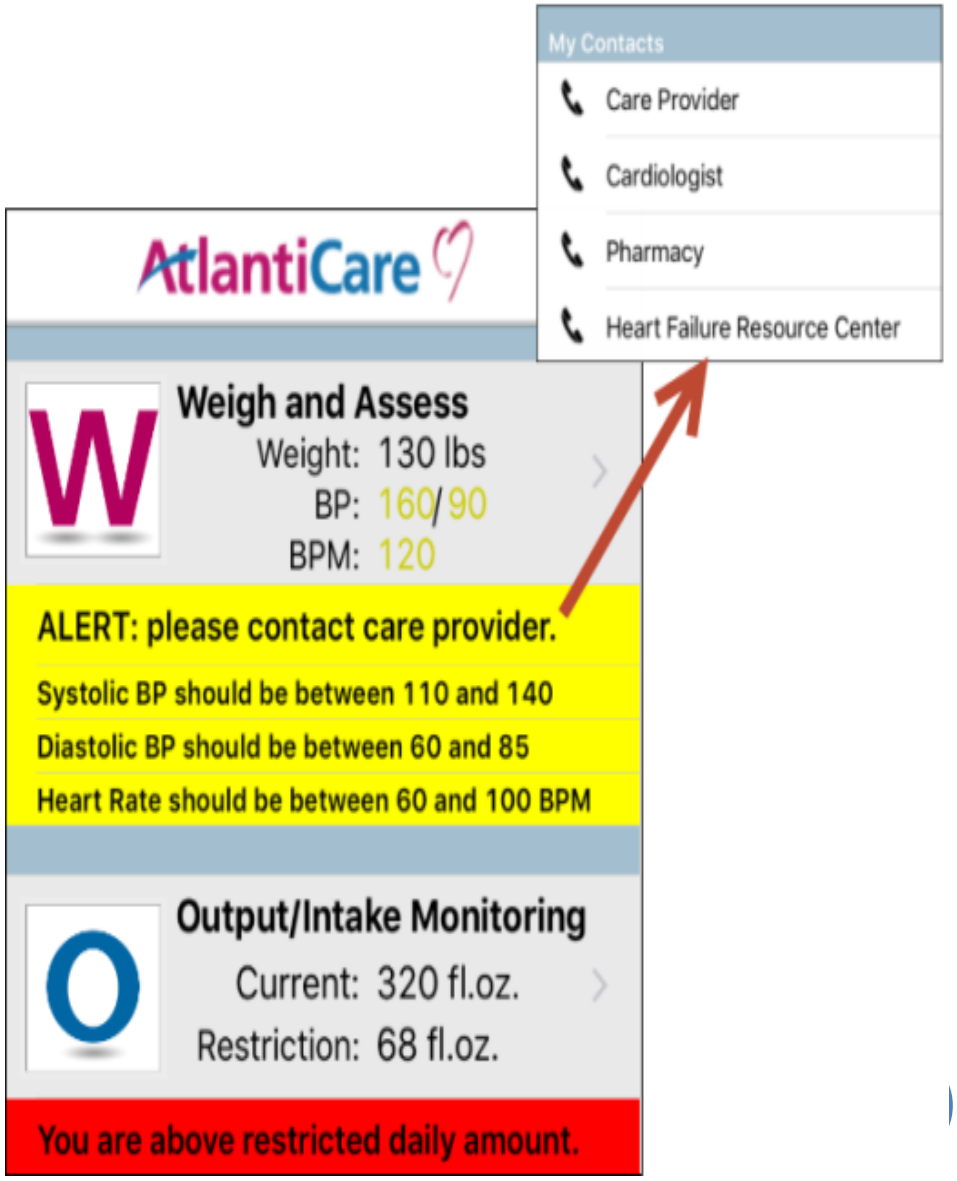


My Profile

- To ensure that app. functions to its maximal level of performance, the patient profile must be completed
- During a recent pilot project, the patient profile was completed by: a nurse care manager, medical resident, or project lead
- Ranges created with guidance provided by a Nurse Practitioner, physician, or medical resident
- E-mail address of project lead was utilized during the project

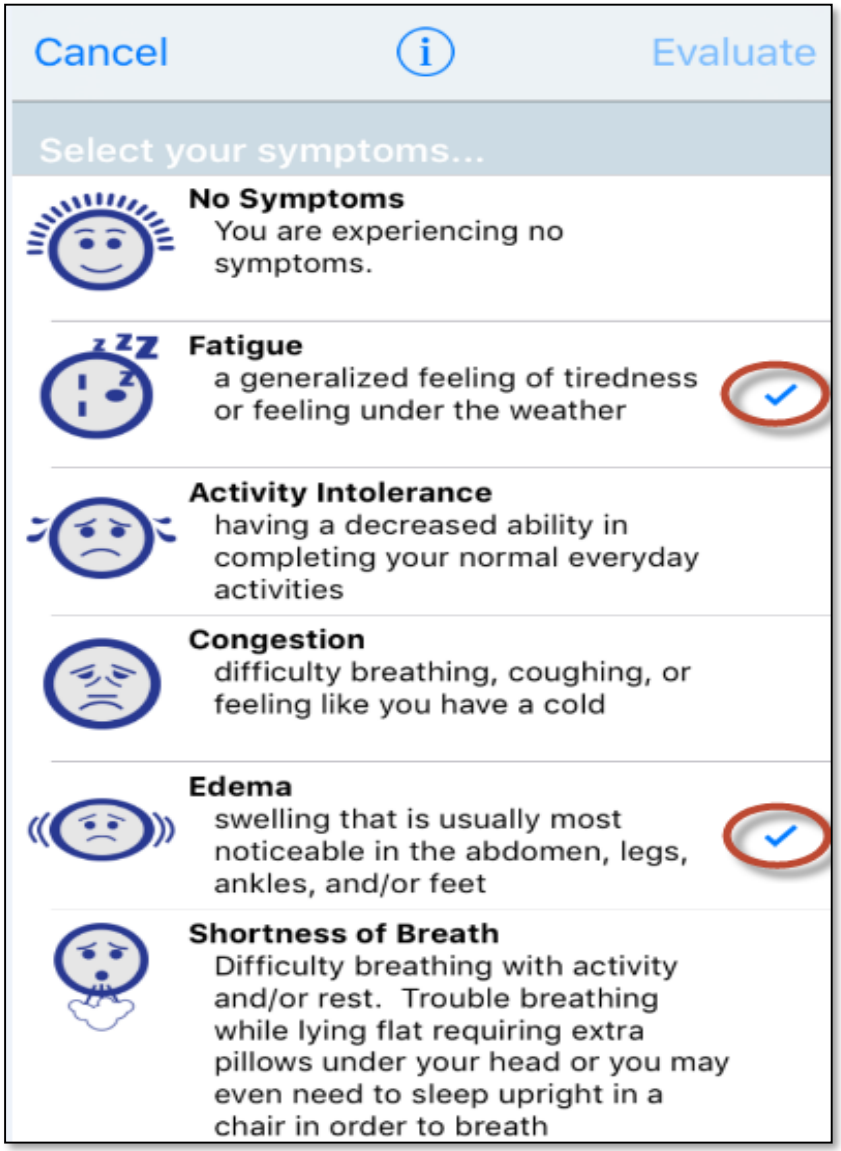
Alerts Encourage Proactive Actions

- Through the use of Clinical Decision Support software, the app evaluates manually entered data against patient profile ranges
- Warning alerts are triggered if data is outside of desired ranges
- Instructs patient to contact care provider
- Call to a provider is initiated with just a tap of the screen



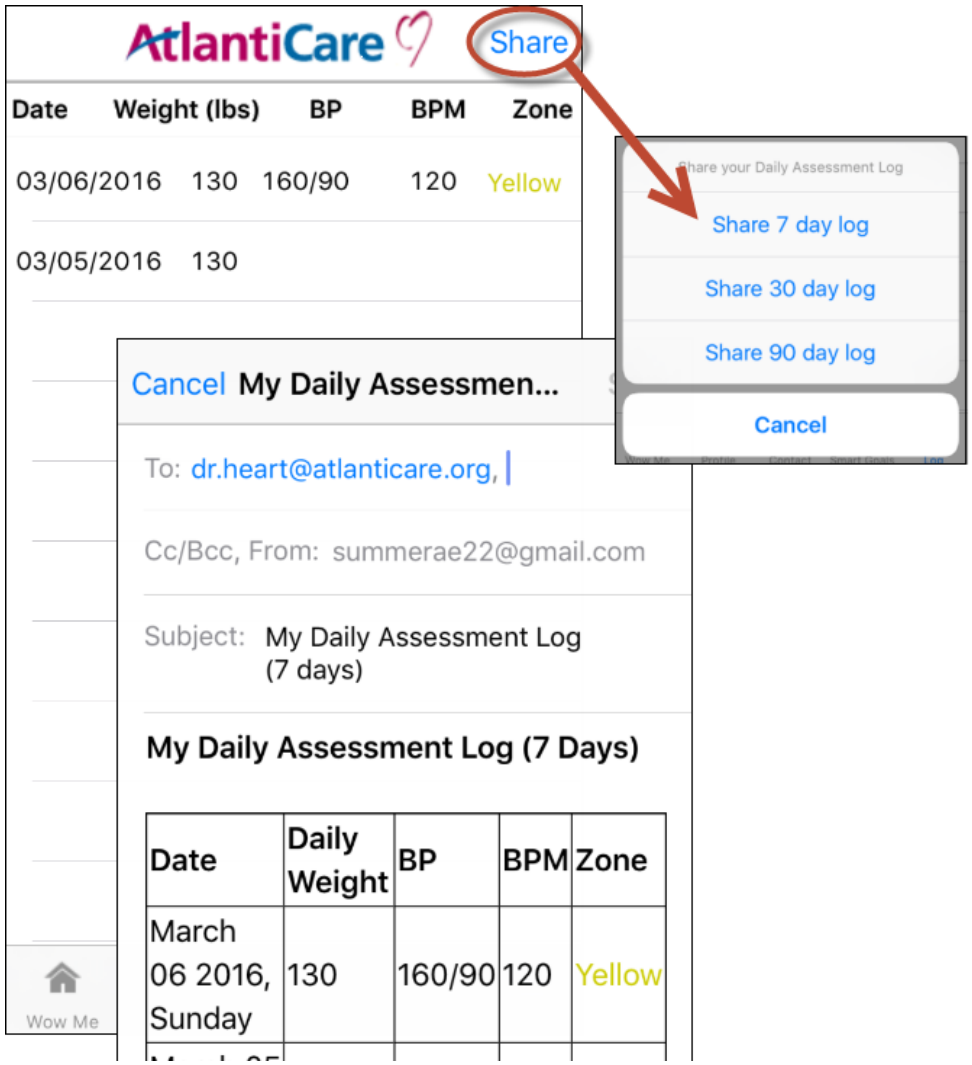
Evaluation of Symptoms

- This Symptoms checker helps patients to log how they are feeling each day
- It helps patients to identify and take early action when they start to have signs and symptoms of heart failure decompensation
- The tool provides specific guidance in response to patients selections
- Tap one or more symptoms and select “Evaluate”

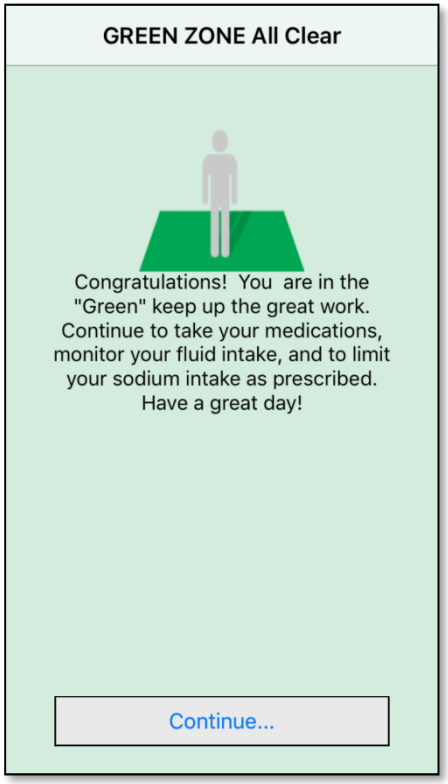


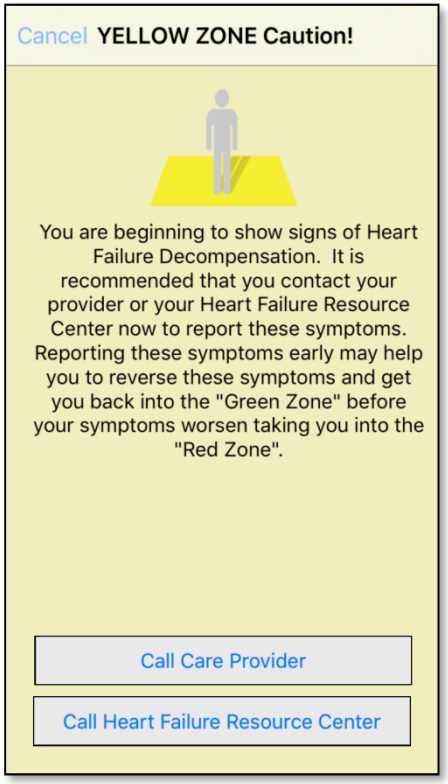
Log

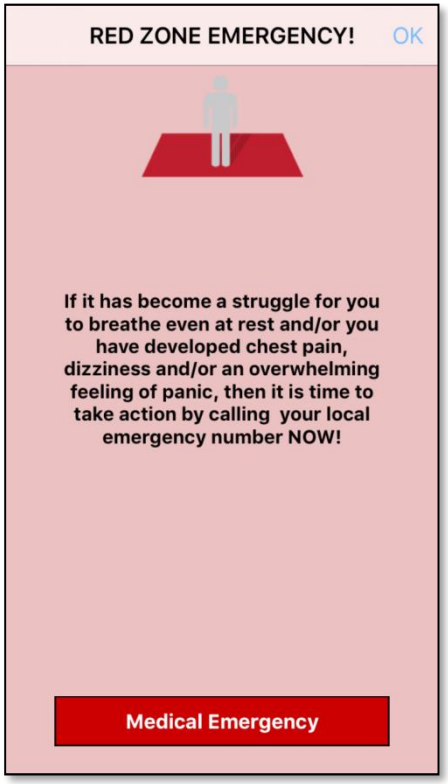
- Displays running log with date, measurements and zone
- Includes ability to Share a 7 day, 30 day, or 90 log via email
- Stores emails of medical team for timely and convenient sharing of data
- Utilized during recent pilot project to confirm daily app. usage



Interactive Symptom Assessments







Recognition

Innovation

American Nurses Credentialing Center(ANCC) Magnet Commendation for innovative nursing practice (2014)

*Invited to podium for the National Convention:
Diversity in Practice: Strength Through Collaboration
October 2017-Houston Tx

Best Practice

- The Joint Commission of Hospital Accreditation have recognized the Manage Me Model© inspired Heart Failure Toolkit as best practice for nurse innovation (2010)
- Hospital Quality and Safety Inc. recognizes this work as an innovative 'Best Practice'

Patient centric self-management specific smart-device applications appear to support successful self-management behaviors of both heart failure patients and their care-givers and reduce hospital admissions

Concluding Thought

Adherence has been identified by WHO as one of the most important modifiers of over-all healthcare-system effectiveness

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