

# How To Start A Cardio- Oncology Program

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# Audience Poll

- How many audience members are from the community?
- How many already have cardio-oncology practices?
- How many have teamed with an academic center?



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# History of Onco-cardiology

- First adult cardiology departments in cancer centers in US emerged approximately 15-20 years ago with the advent of HER and TKI cardiotoxicity
- Initial Needs were supportive

**Kara Kennedy's Heart May Have Taken  
'Direct Hit' by Cancer Cure – Sept 20, 2011**



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**From Cancer Patient to Cancer Survivor:  
LOST IN TRANSITION**

*Committee on Cancer Survivorship: Improving  
Care and Quality of Life*

*National Cancer Policy Board*

Maria Hewitt, Sheldon Greenfield, and Ellen Stovall,  
*Editors*

*INSTITUTE OF MEDICINE AND NATIONAL  
RESEARCH COUNCIL OF THE NATIONAL  
ACADEMIES, 2006*

THE NATIONAL ACADEMIES PRESS

Washington, D.C. [www.nap.edu](http://www.nap.edu)

Cancer is a  
disease  
spectrum, in  
many ways a  
chronic illness.

One of fastest and growing patient populations  
At risk for premature CV disease

More than 15.5 Million Cancer Survivors in US

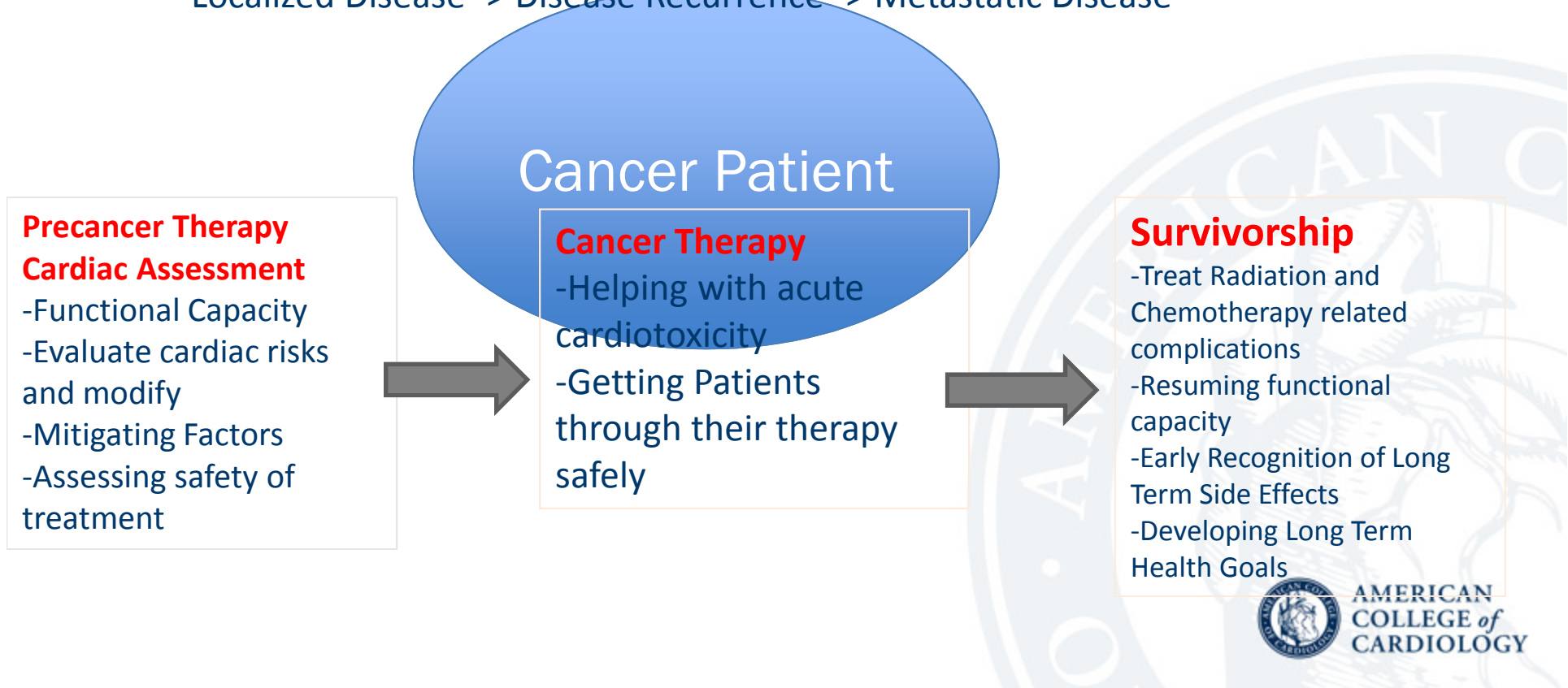


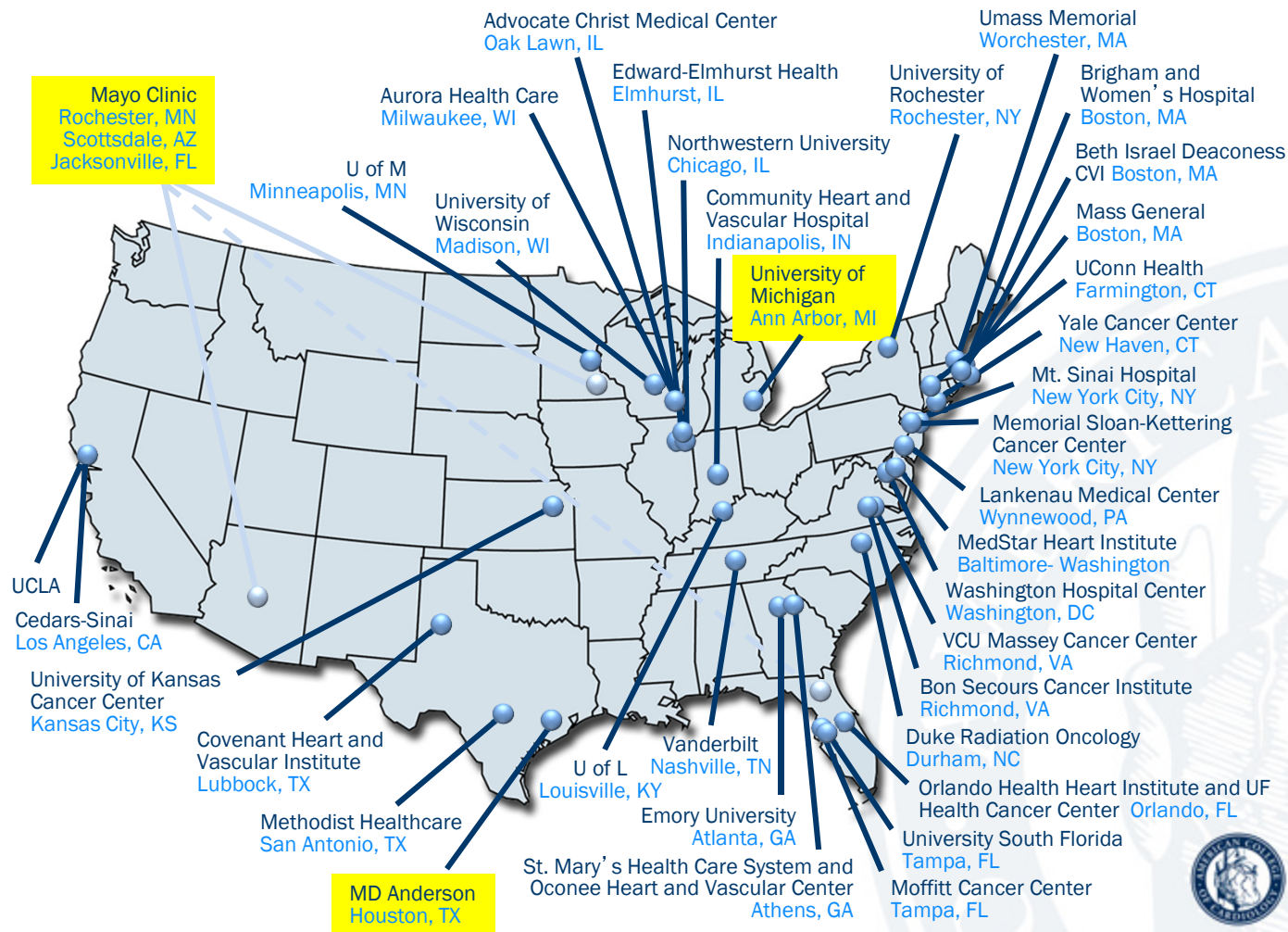
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# What is Cardio-Oncology?

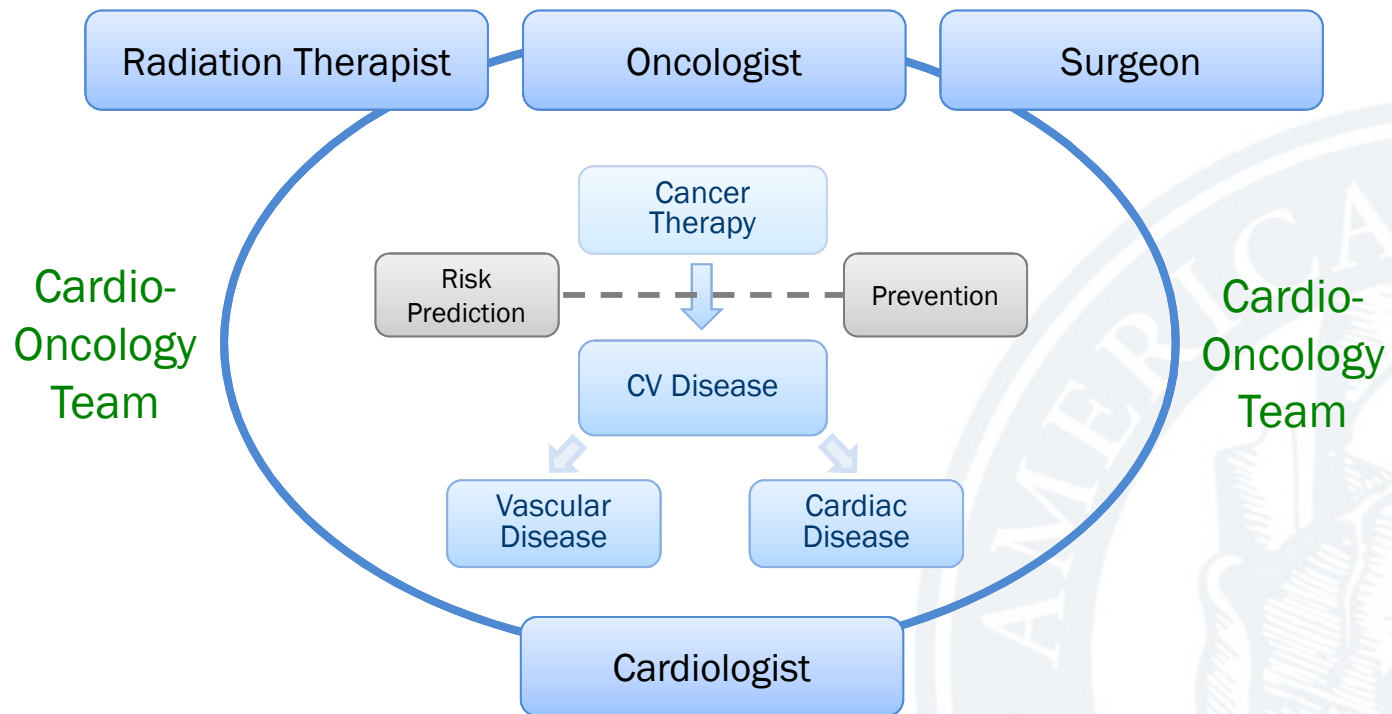
-Learn to Live with Cancer with best quality of life

“A Continuum Of Care For The Cancer Patient. “Achieving complementation with oncology”  
Localized Disease -> Disease Recurrence -> Metastatic Disease





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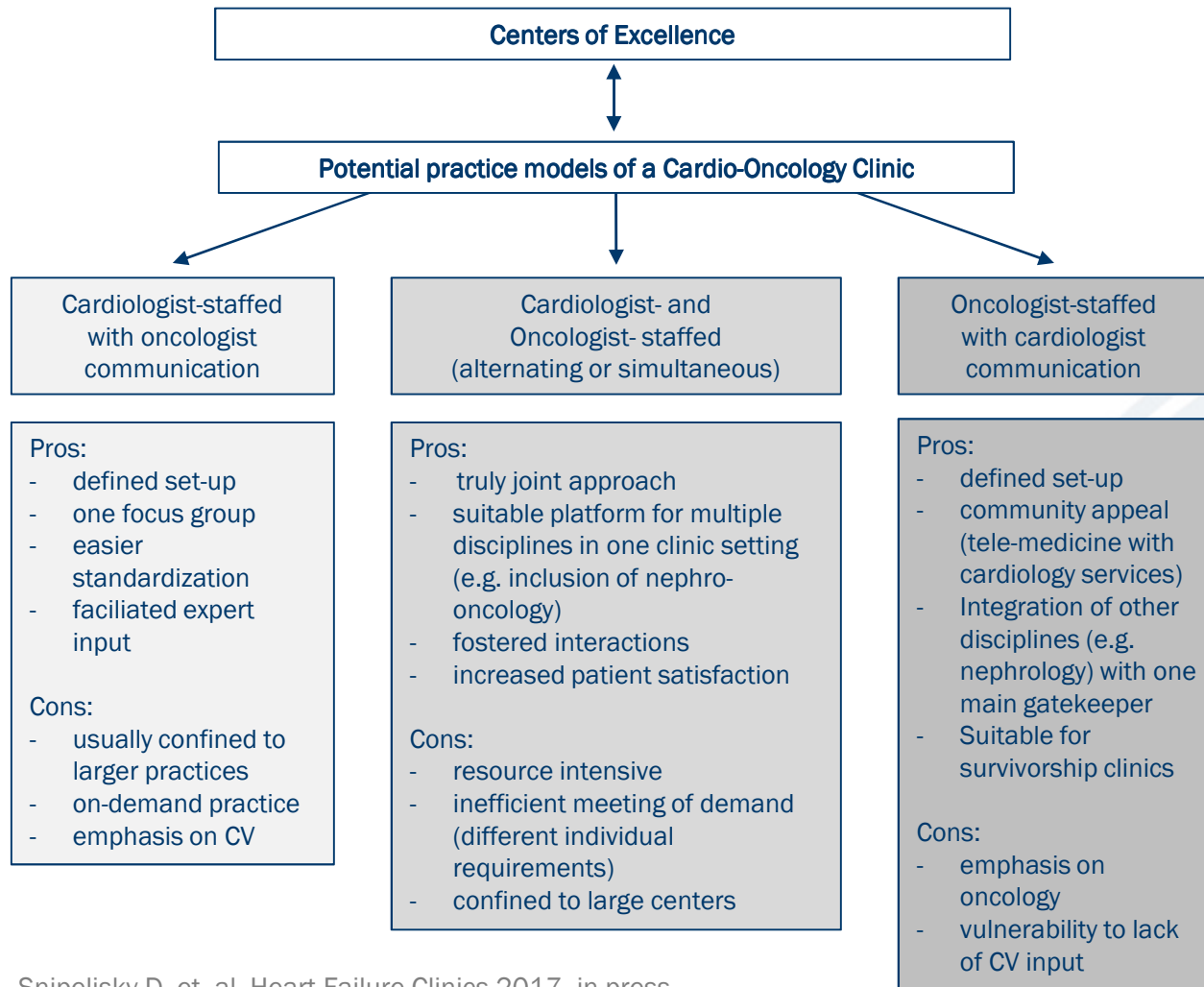


Cardio-Oncology Team

Cardio-Oncology Team



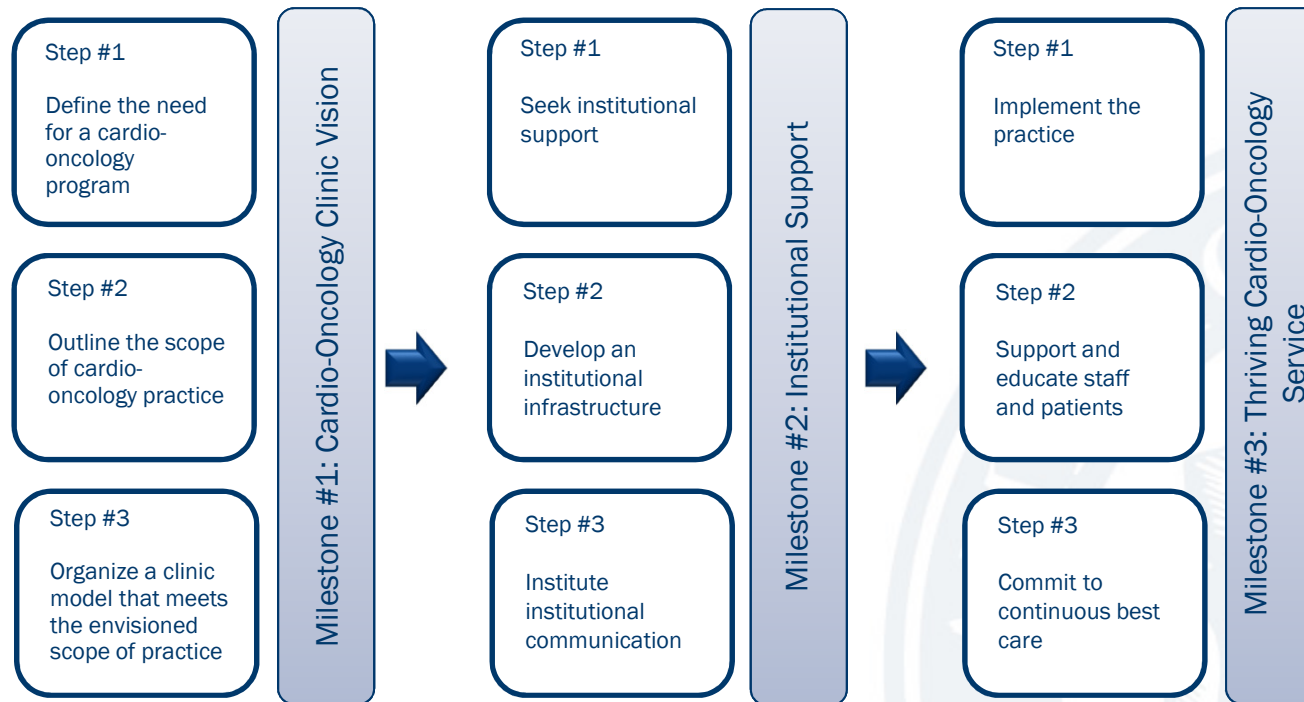
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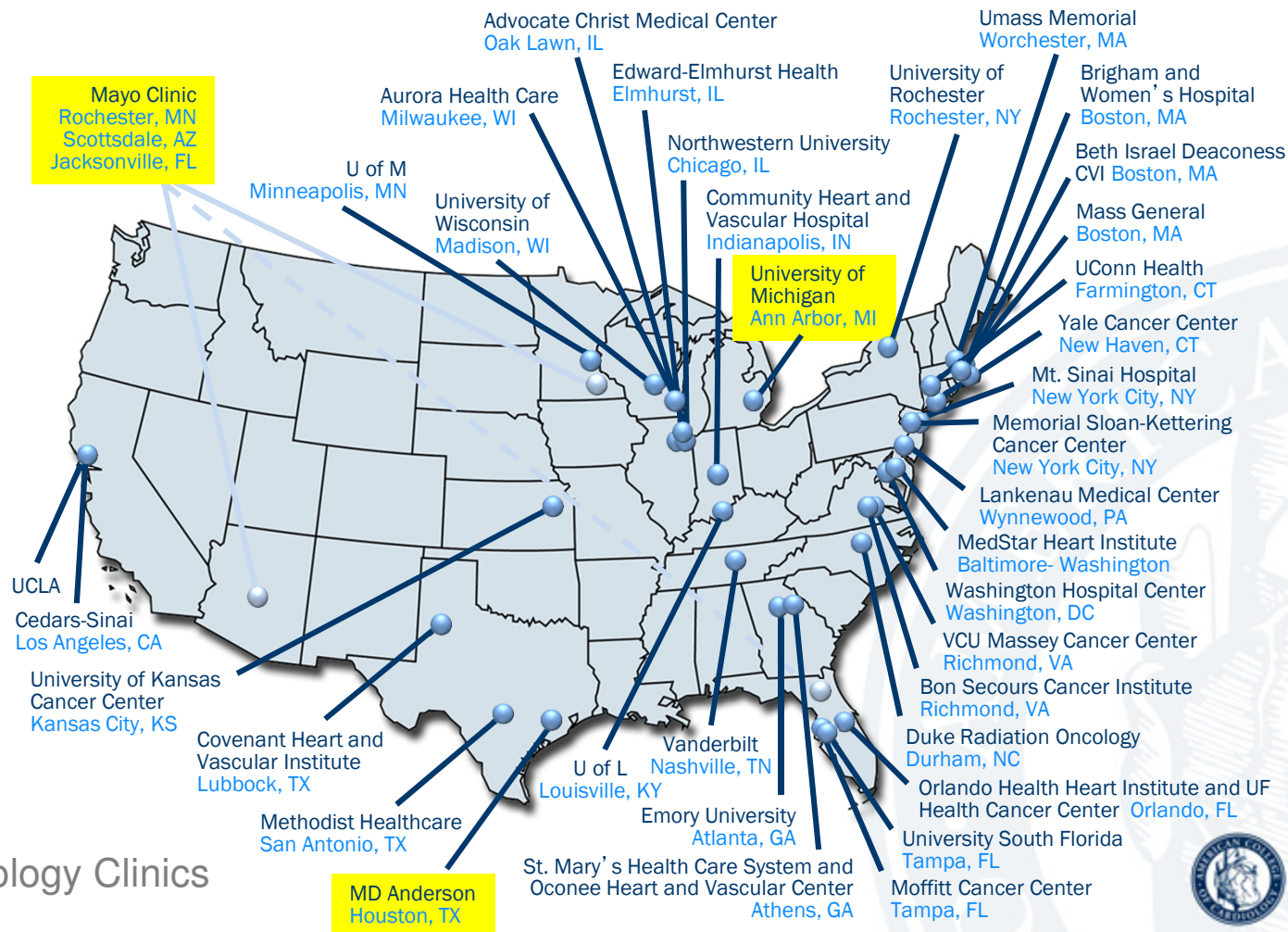
Snipelisky D. et. al. Heart Failure Clinics 2017, in press



# Cardio-Oncology Clinic Milestones



Snipelisky D. et. al. Heart Failure Clinics 2017, in press



Cardio-Oncology Clinics  
US 2016



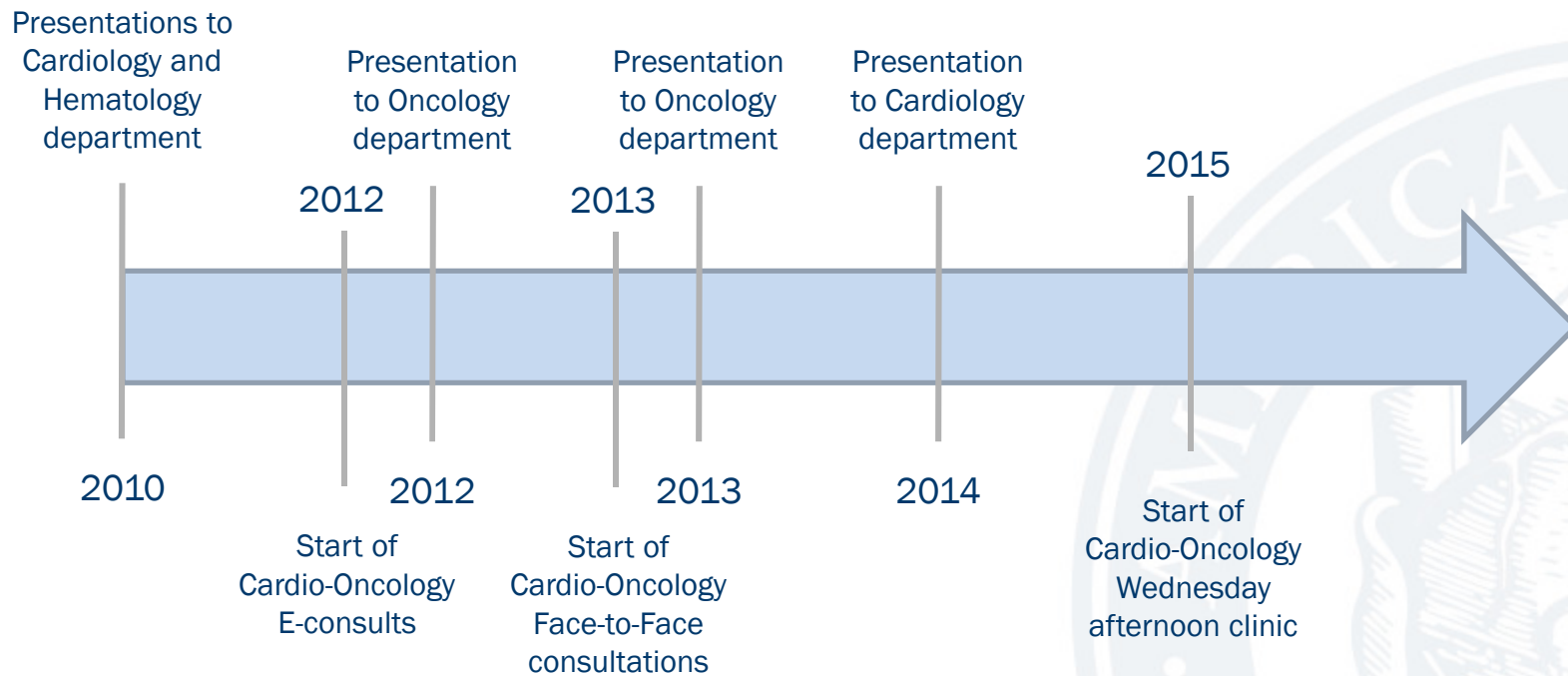


Mayo Clinic, Rochester, MN



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# Mayo Cardio-Oncology Timeline



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Next Patient Problem Enable Persistent Indications Pending Ordered Exams & Procedures

Menu  Problems  
 Help cad nos  
 Undo pain foot nos  
 hypercalcemia  
 Next

**Cardiology - Adult Subspecialty Clinics**

Next  
 Cancel  
 Guide  
 Comments

**Orderable Items**

	Last	Current
<input type="radio"/> General Cardiology Clinics 24-48 hour access guaranteed; for patients with mild forms of specific CV diagnosis or undifferentiated CV concerns	order set	
<input type="radio"/> Circulatory Failure Clinics Patients with known or suspected heart failure (normal or reduced EF), unexplained dyspnea, or known or suspected pulmonary hypertension	order set	
<input type="radio"/> Ischemic Heart Disease Clinics Known or suspected CAD, chest pain, preventive cardiology assessment		
<input type="radio"/> Heart Rhythm Services Clinics Patients with advanced or refractory rhythm disorders, those previously evaluated by heart rhythm services		
<input type="radio"/> Structural Heart Disease Clinics Patients with valvular heart disease, hypertrophic cardiomyopathy, congenital heart disease, Marfan/non atherosclerosis ascending aortic disease, familial aortopathy, or pericardial diseases		
<input type="radio"/> Cardiology eConsults For patients who do not require a face-to-face visit		

Next  
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 Feedback  
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 Personal  
 Search  
 Guidelines  
 Ask Mayo Expert  
 Non-Med & Hx Rx

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**Ordered Exams & Procedures** Delete

Next Patient Problem Enable Persistent Indications Pending Ordered Exams & Procedures

Menu  Problems  
 Help cad nos  
 Undo pain foot nos  
 hypercalcemia  
 Next

**Circulatory Failure Clinics**

Next  
 Cancel  
 Guide  
 Comments

**Orderable Items**

	Last	Current
Patients with known or suspected heart failure (normal or reduced EF), unexplained dyspnea, or known or suspected pulmonary hypertension		
<input type="radio"/> Heart Failure Clinic (Known or suspected heart failure, unexplained dyspnea, asymptomatic low EF)		
<input type="radio"/> Heart Transplant Consult Cardiac transplant or ventricular assist device candidate or recipient)		
<input type="radio"/> Pulmonary Hypertension Clinic Known or suspected pulmonary hypertension, unexplained dyspnea)		
<input type="radio"/> Cardiac Amyloid Clinic (Known or suspected cardiac amyloidosis)		
<input type="radio"/> Unexplained Dyspnea Clinic (Dyspnea of unknown cause or that is diagnostically challenging)		
<input type="radio"/> Cardio Oncology Clinic (Patients on or planning to receive cancer therapy with cardiovascular risk)		

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Ordered Exams & Procedures Select Case Delete

Next Patient Problem  
 Enable Persistent Indications  
 Menu  Problems  
 Help cad nos  
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Adult eConsults

Next  
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Orderable Items	Last	Current
<input type="radio"/> For patients who do not require a face to face consult		
<input type="radio"/> Allergy eConsult	order set	
<input type="radio"/> Cardiology eConsults	order set	
<input type="radio"/> Colon and Rectal Surgical eConsult	order set	
<input type="radio"/> Endocrinology eConsult	order set	
<input type="radio"/> Fibromyalgia eConsult		
<input type="radio"/> Gastroenterology and Hepatology eConsult	order set	
<input type="radio"/> General Thoracic Surgical eConsult	order set	
<input type="radio"/> Gynecology eConsult	order set	
<input type="radio"/> Hematology eConsult		
<input type="radio"/> Herb & Supplement eConsult	order set	
<input type="radio"/> Hypertension eConsult	order set	
<input type="radio"/> Infectious Disease eConsult	order set	
<input type="radio"/> Image Guided Procedures eConsults	order set	
<input type="radio"/> IntegratedMedicine eConsult Fibromyalgia		
<input type="radio"/> Interventional Vascular eConsult		
<input type="radio"/> Medical Genetics eConsult	order set	
<input type="radio"/> Medical Oncology eConsults	order set	
<input type="radio"/> Med Therapy Mgmt Pharmacist eConsult	order set	
<input type="radio"/> Nephrology eConsult	order set	
<input type="radio"/> Neurology eConsult	order set	
<input type="radio"/> Neurosurg eConsults	order set	
<input type="radio"/> Nicotine Dependence eConsult		
<input type="radio"/> PM&R eConsults	order set	
<input type="radio"/> Post Surgical Work Restrictions eConsult (Mayo Employees only)		
<input type="radio"/> Psych eConsult	order set	
<input type="radio"/> Pulmonary eConsult	order set	
<input type="radio"/> Radiology Pain Management eConsult	order set	
<input type="radio"/> Rheumatology eConsult		
<input type="radio"/> Sleep Center eConsult	order set	
<input type="radio"/> Spine Center eConsults	order set	
<input type="radio"/> Urology eConsult	order set	

Patient Problem  
 Cardiology - Adult Subspecialty

Next  
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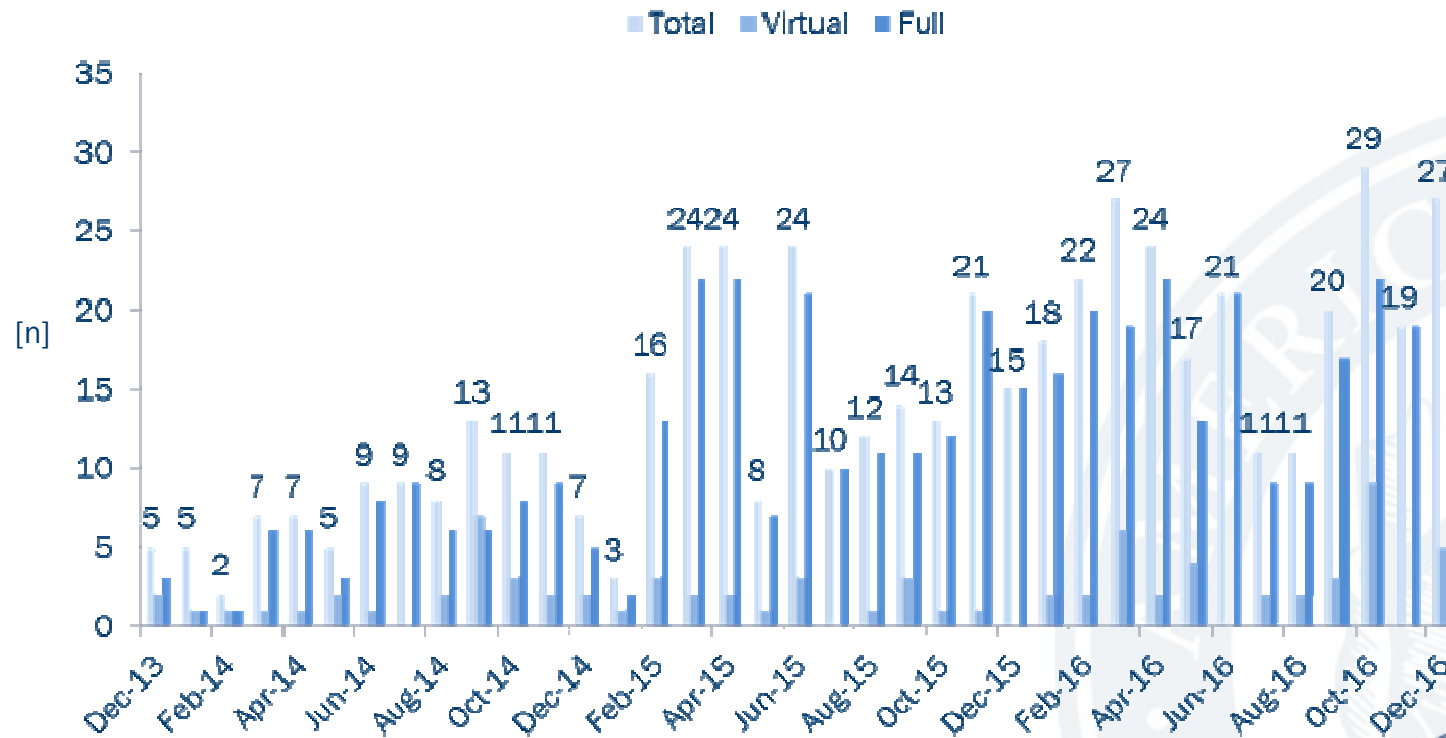
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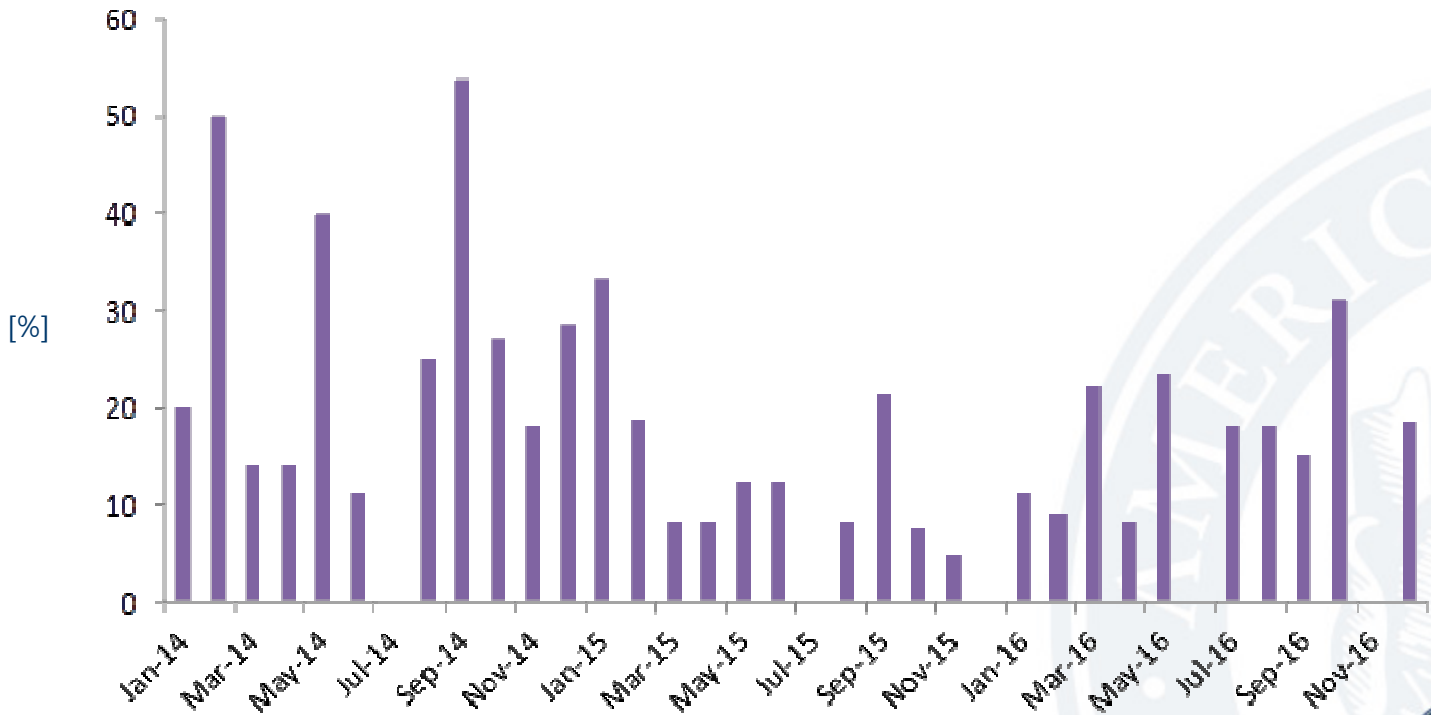
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# Cardio-Oncology Clinic Visits

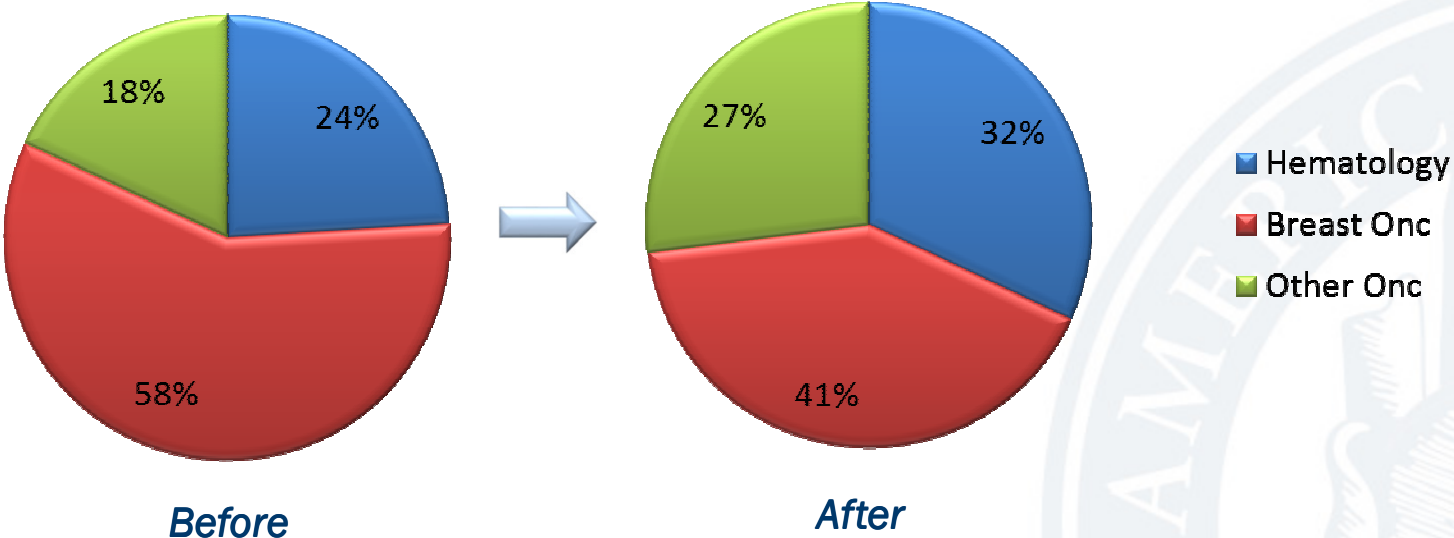


# Cardio-Oncology E-Consultations

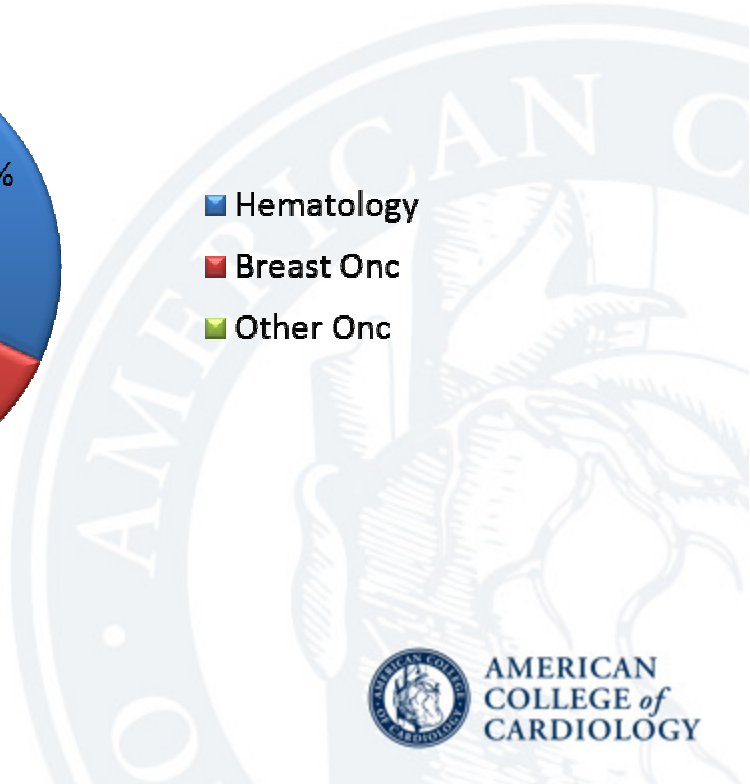




# Cardio-Oncology Referral Groups

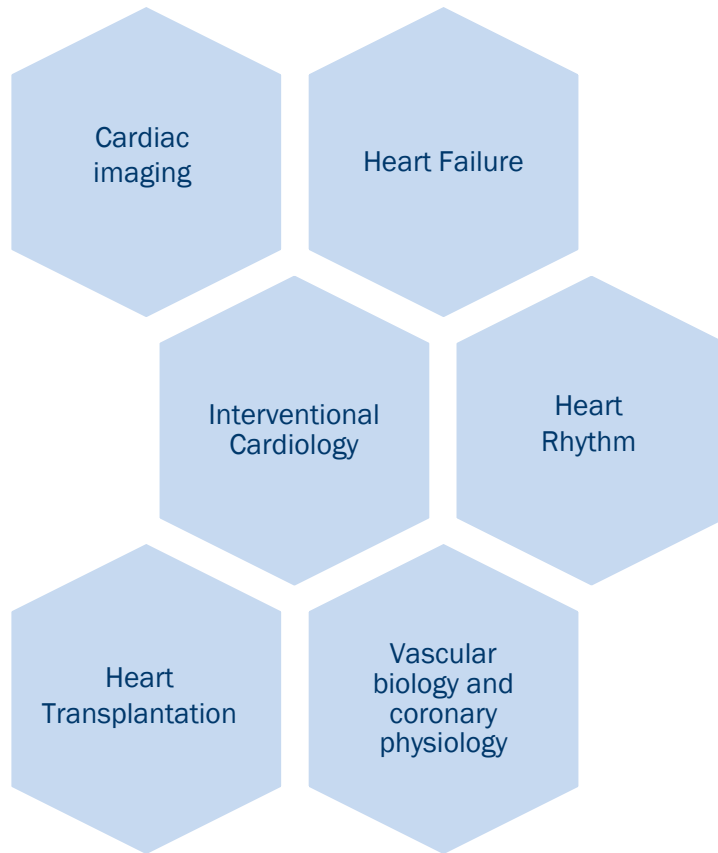


“Physical” Cardio Oncology Clinic





# Mayo Cardio-Oncology Team Model



# University of Michigan Cardio- Oncology Program

- Start Date 2011
- Housed in the Cardiovascular Center



## Establishing Relationships – All Cancers Are Not Created Equally and Have More Cardiac Problems than Others and Understand the Needs of the Institution

### Top 5 cancers diagnosed and treated at the University of Michigan:

- **Melanoma**
- **Breast cancer**
- **Prostate Cancer**
- **Blood Cancers**
- **Lung Cancers**

### U-M recognized as Blue Distinction Center for Complex and Rare Cancers:

- **Acute Leukemia**
- Bladder
- Bone - Primary
- Brain - Primary
- Esophageal
- Gastric
- **Head and Neck**
- Liver - Primary
- Pancreatic
- Ocular Melanoma
- Rectal
- **Soft Tissue Sarcomas**
- Thyroid - Medullary and/or Anaplastic



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# Outline New Services You Can Offer

- Dedicated Cardio-oncology clinics – Fast Track These Patients
- Imaging Focusing on Cardio-oncology problems
  - Echocardiography with strain imaging
  - Cardiac MRI – EF and fibrosis, Cardiac Masses, Amyloid
  - Becoming active members of tumor boards
  - Educate your community physicians – **Primary Care**



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## Understand the Cardiac Problems of Each Cancer and Its Therapy and Develop Relationships

- Each cancer is unique
- Team Up With Other Cardiology Specialties
- Understand the oncologists fears and myths:
  - Patients will die from their cancer first
  - If they have heart disease, they can't get their cancer treatment
  - You're going to stop my chemotherapy



# UM Cardio-oncology Program

- 2 ½ full day dedicated cardio-oncology clinics

- Dedicated cardio-oncology nurse

- Subspecialty Programs:

Sarcoma Survivorship, Cardiac Tumors

- Diverse Group of Patients: Cardiotoxicity, Cardiac Tumors, Carcinoid, Cardiac Amyloid, XRT, Pericardial Disease, Arrhythmia



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# The Community

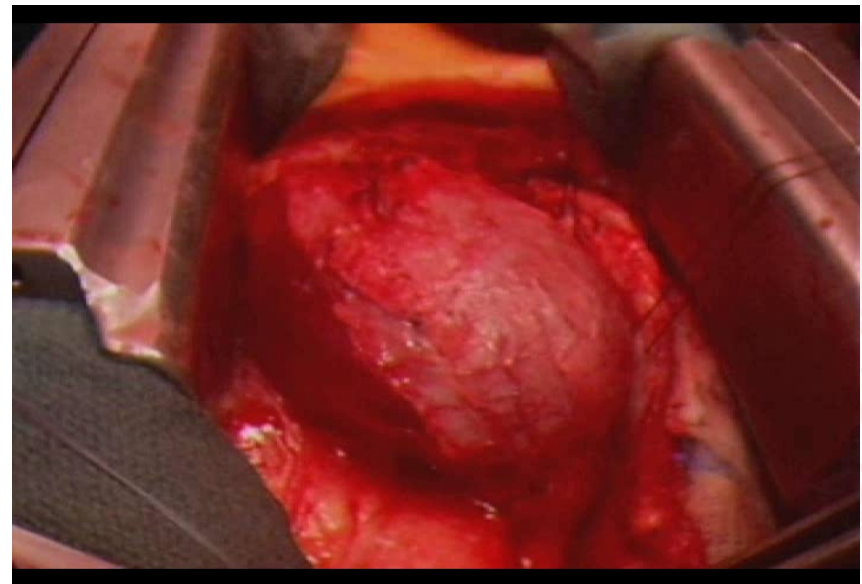
- Establish dedicated time slots
- Understand what to screen for?
- Establish good relationships with your local oncologists!
- Team up for the weird!



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# Cardiac Tumor Program

- Collaborative program of oncologists, cardiologists, radiologists, surgeons, targeted therapy
- Monthly tumor board
- Multi-institutional
- Referrals from all states
- Both primary and metastatic tumors to the heart



**Right Atrial Sarcoma Resection**



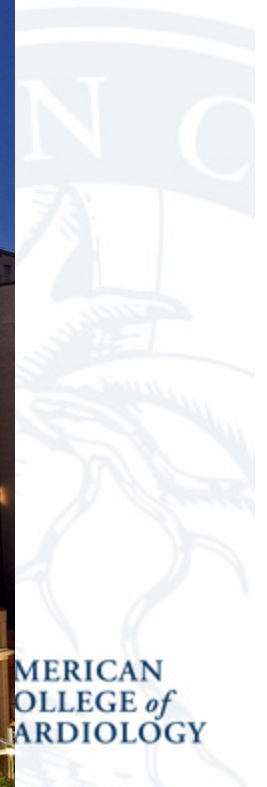
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THE UNIVERSITY OF TEXAS  
**MD Anderson  
Cancer Center**

Making Cancer History®



**The Heart Success Program**



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## Heart Success Program

- Interdisciplinary patient-centered program for the management of heart failure in patients with cancer
- Early identification of risk factors for cardiotoxicity, prevention of exacerbation and readmissions
- Ensure provision of appropriate care and education



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# Barriers

- Lack of guidelines
- Lack of funding – NCI is providing new dedicated grants
  - FOA - PA-16-035
  - Funding Opportunity title - Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R01)
- Limited Educational Opportunities
- Limited Infrastructure
- Perception of necessity



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# Why Manage Heart Failure in Cancer Patients?

- Several chemotherapeutic agents are known to cause cardiotoxicity
- Heart failure as a comorbid condition can affect choice of cancer therapy
- Severity of heart failure has direct impact on the care, prognosis, clinical outcomes and patient's quality of life
- Cancer patients typically have cardiovascular disease and vice versa, demanding a team approach



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# Patients with Cancer and HF at MDACC

FY	Total Hospital Discharges	HF Discharge Dx	30-Day Readmission	90-Day Readmission
2010	23,985	1199 (4.9%)	456 (38%)	1001 (83%)
2011	25,168	1258 (4.9%)	427 (34%)	887 (71%)

**2009** - The US Center for Medicare and Medicaid Services (CMS) began public reporting of all-cause readmissions rates after HF hospitalization

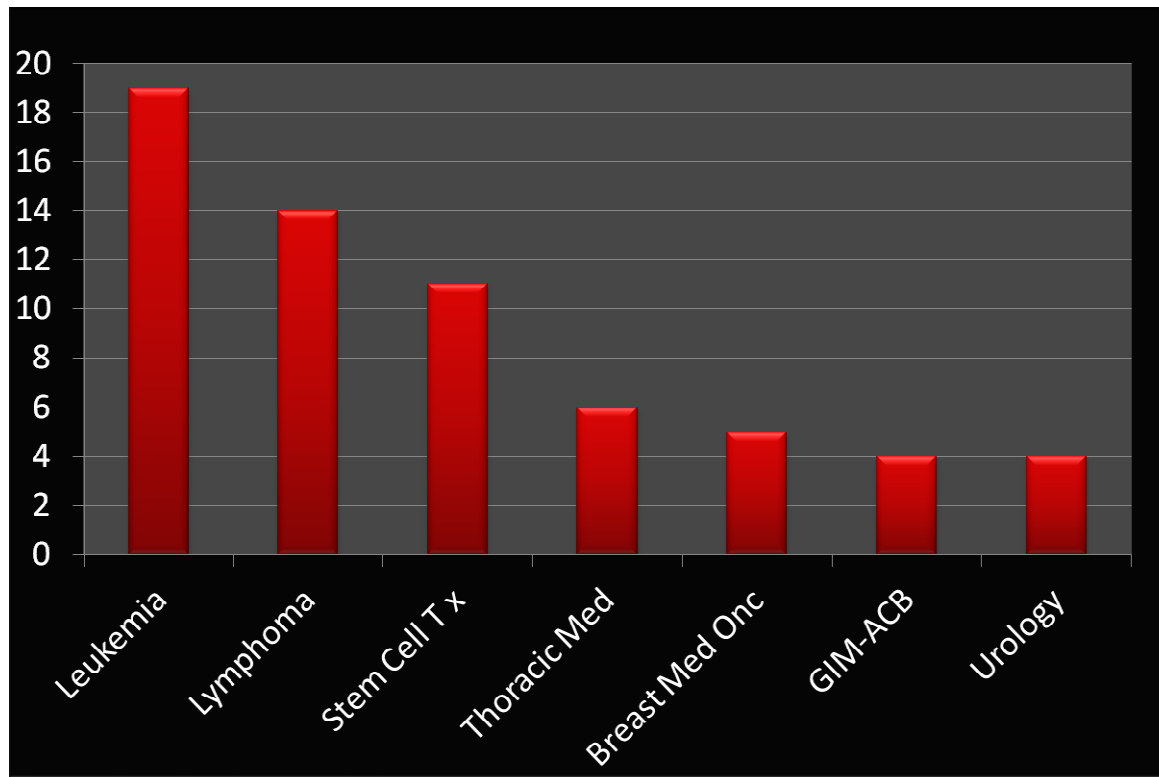
**2010** - Patient Protection and Affordable Care Act establish financial penalties for hospitals with the highest readmission rates during the first 30 days after discharge

- National database for Medicare patients showed HF readmission within 30 days is approximately 19.1%
- Comprehensive discharge planning and planned follow -up may reduce early readmission rates by as much as 25%



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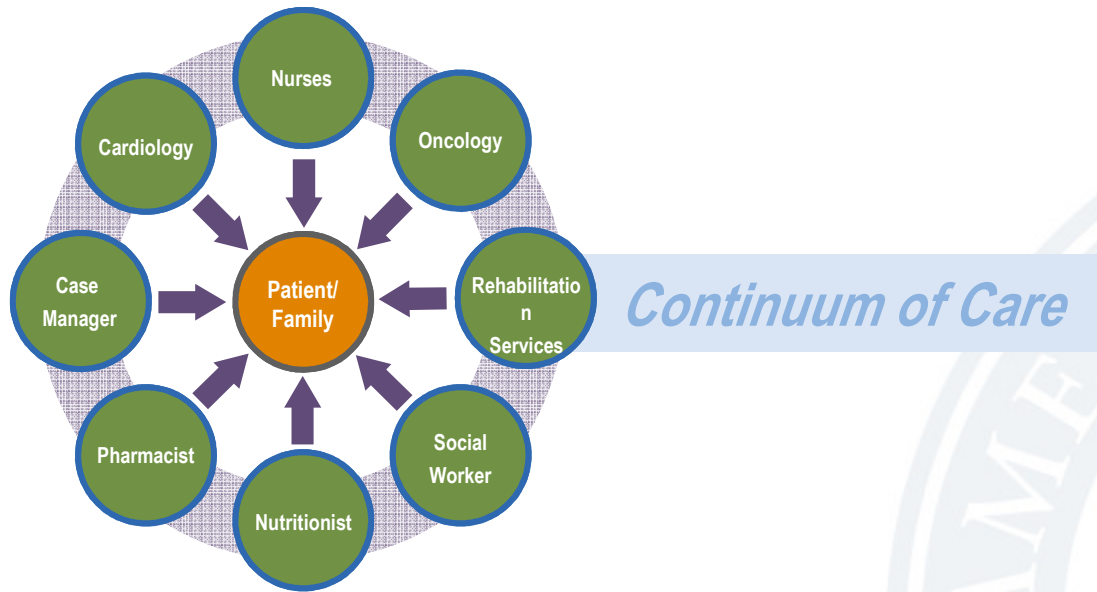
# Cancer Diagnosis of Patients with Heart Failure\*



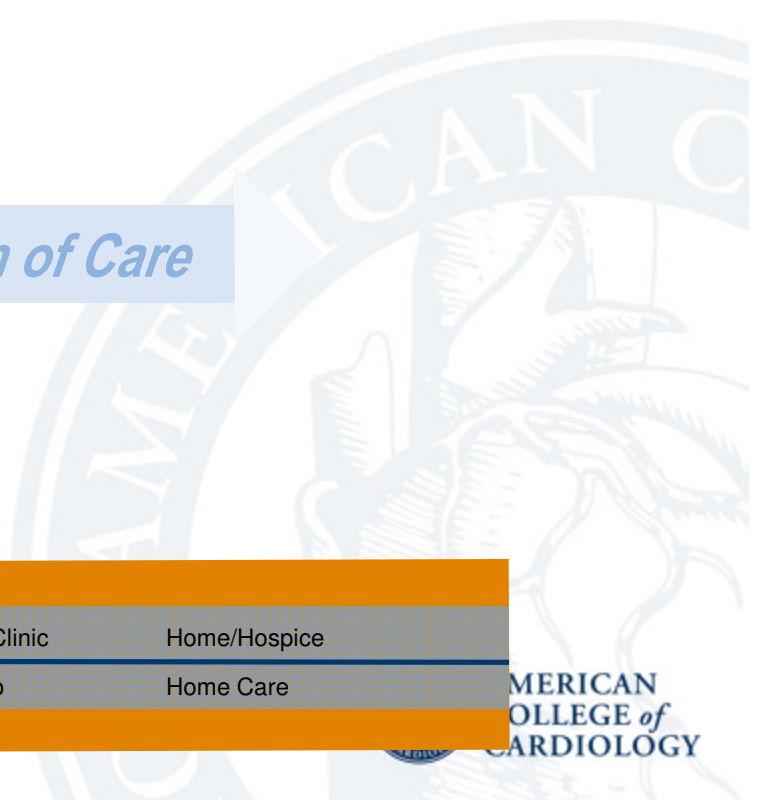
\* HF incidence  $\geq$  4%



# Heart Success Program



<b>Location</b>	Emergency Center/Inpatient	Outpatient/Cardiomyopathy Clinic	Home/Hospice
<b>Tools</b>	Heart Failure Order Set	Heart 2 Heart Support Group	Home Care



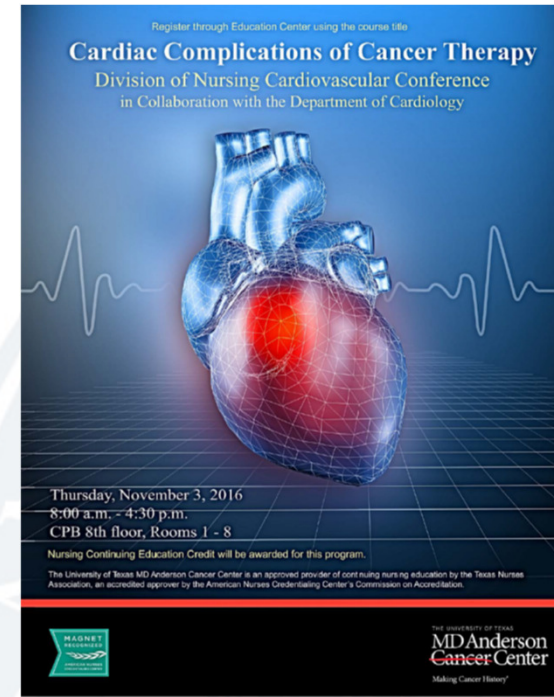
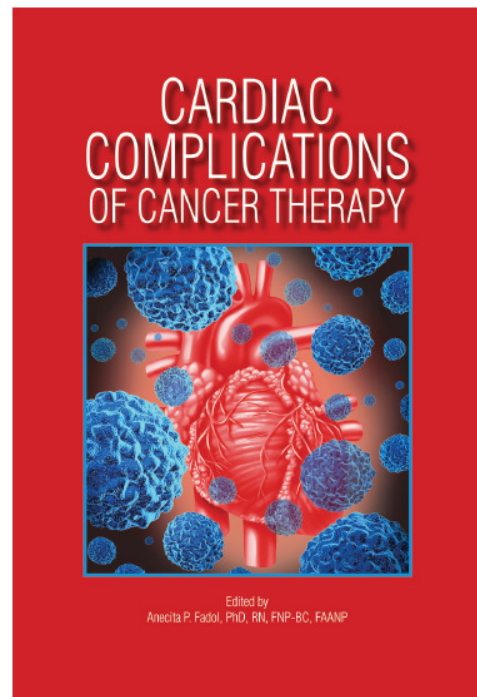
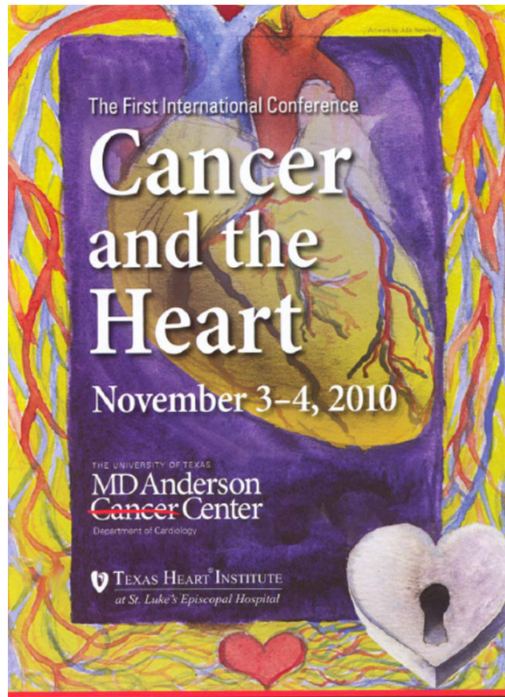
# Heart Success Program Tools

- Education component
  - Nursing and interdisciplinary staff
    - Cardiac Complications of Cancer Therapy symposium
  - Patient/Family Education
- Clinical component
  - Identification of patients with LVD
  - Interdisciplinary clinical rounds
  - Clinical In-services (case conferences)
  - Clinical Nurse Leaders (CNL) as clinical champions
- Outcomes measurement
  - Hospital readmission
  - Patient experience

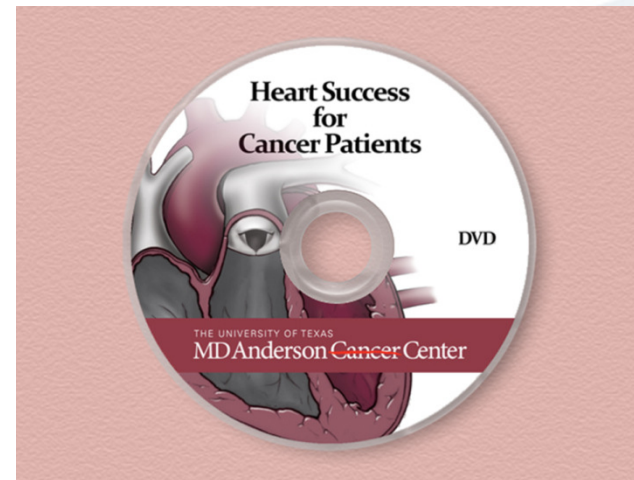


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# Heart Success Program Team Education

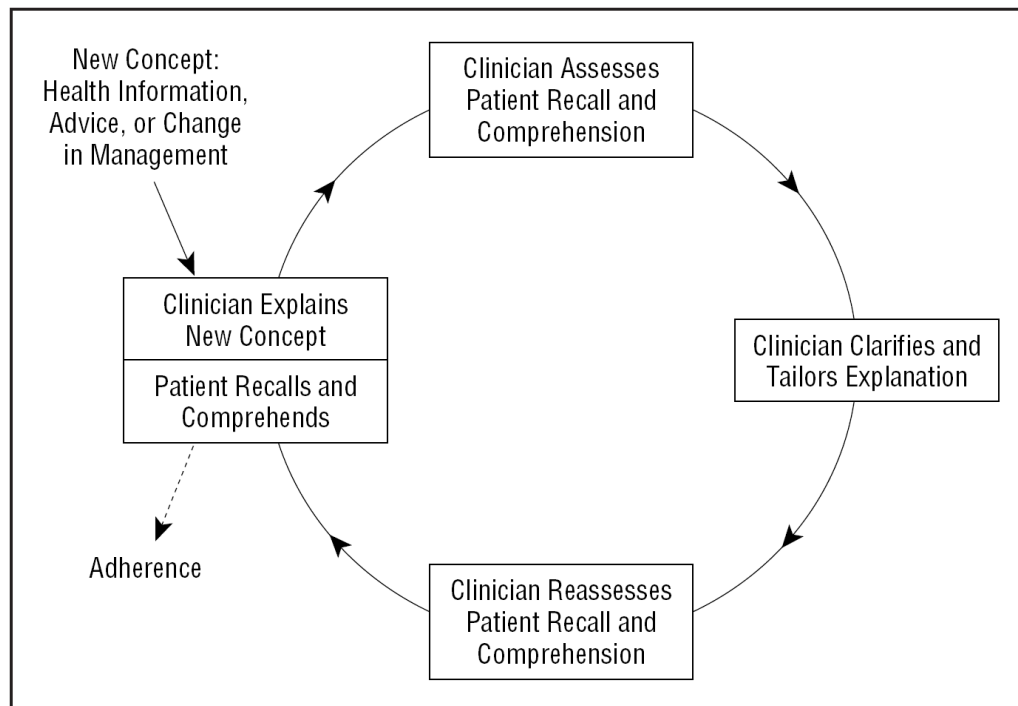


# Patient Education



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# Teach Back: Closing the Loop



Schillinger D, Piette J, Grumbach K, Wang F, Wilson C, Daher C, Leong-Grotz K, Castro C, Bindman A.  
Closing the Loop Physician Communication With Diabetic Patients Who Have Low Health Literacy.  
Arch Intern Med/Vol 163, Jan 13, 2003



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# Transition from Hospital to Home

- Review discharge instructions (**SMART**)
  - **S**ymptoms
  - **M**edications
  - **A**ctivity
  - **R**egular weight monitoring
  - **T**oss the salt shaker
- Schedule outpatient follow-up with HCP
- Review instructions with clinic visit



## Managing Heart Failure: Be Heart **SMART**

You have been diagnosed with a condition called Heart Failure. Being told that your heart is not working properly while you are battling cancer can be overwhelming. Having heart failure means that you can still live a full and rewarding life. You do however have to take certain steps to maintain your heart function. Be heart **SMART!**

### **S**ymptoms

Call your doctor if you have any of the following symptoms:

- Trouble breathing or shortness of breath
- Swelling if your abdomen, legs, or feet
- Racing heartbeat
- Increased weakness or tiredness
- Dizziness, lightheadedness or restlessness
- Chest pain

### **M**edications

- Take your medications at the same time every day as prescribed.
- Do not skip doses, even if you aren't feeling well.
- Do not stop taking your medications without talking to your doctor or nurse.
- Bring your medication when you come for your clinic visits.

### **A**ctivity

- Follow your doctor's instructions about physical activity
- Set up an exercise plan that includes activities that you enjoy
- Stop and rest if you feel tired or short of breath.
- Be active every day. Try taking the stairs or walking for short periods of time.

### **R**egular Weight Monitoring

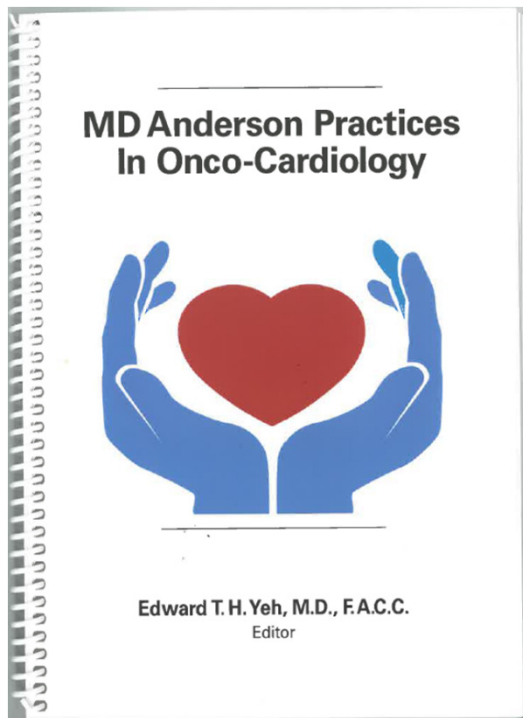
- Weigh yourself every morning at the same time, on the same scale, and with the same amount of clothing.
- Call your doctor or nurse if you gain more than two pounds in one day for two consecutive days or more than five pounds in one week.

### **T**oss the salt shaker

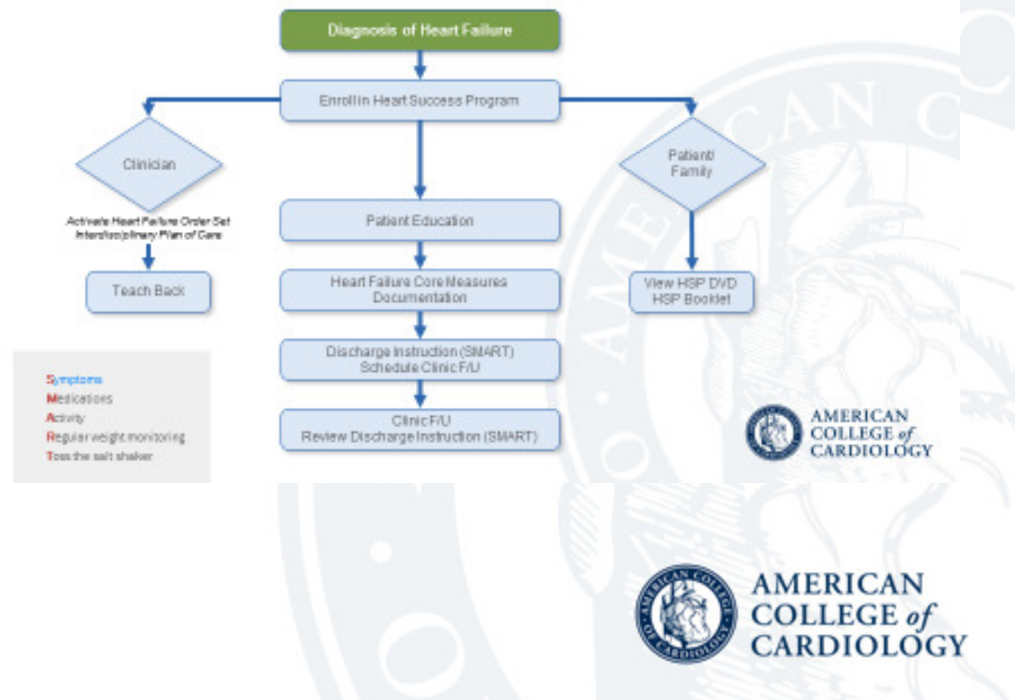
- Use salt sparingly, no more than 2 grams per day.
- Read food labels so you will know how much salt is in the food you eat.
- Eat plenty of fresh fruits and vegetables (unless you have restrictions)

\*\*\*Schedule an appointment with your doctor within one week of discharge.\*\*\*





## MD Anderson Practice





# Provision of discharge instructions

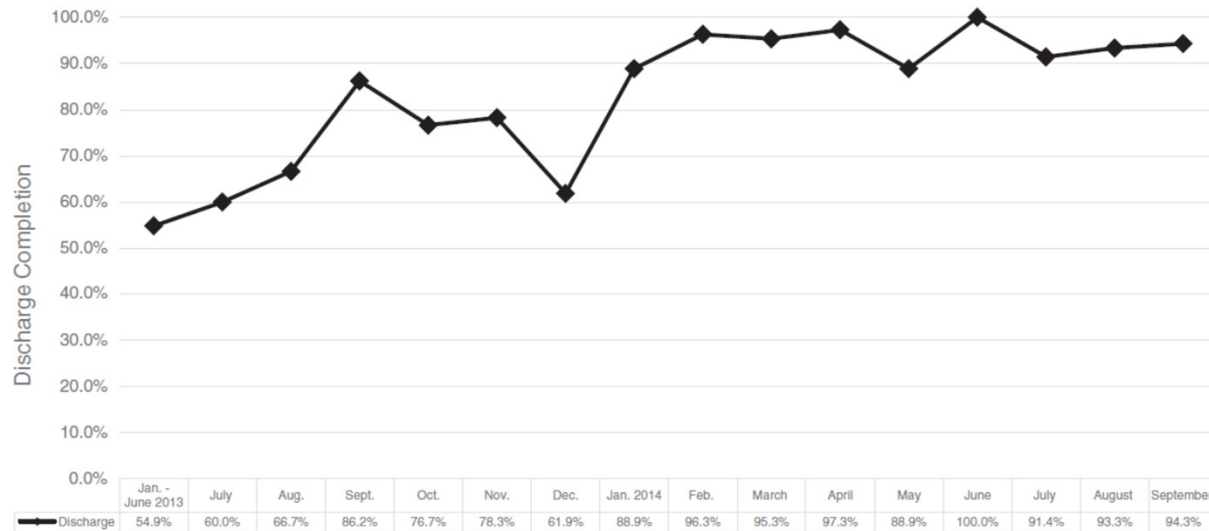


Fig. 6. Heart failure core measure (discharge instruction).

Fadol, A. et al. Heart success program. Progress in Pediatric Cardiology. 2015. 39. 99-105.



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# Patient Satisfaction (HCAHPS)

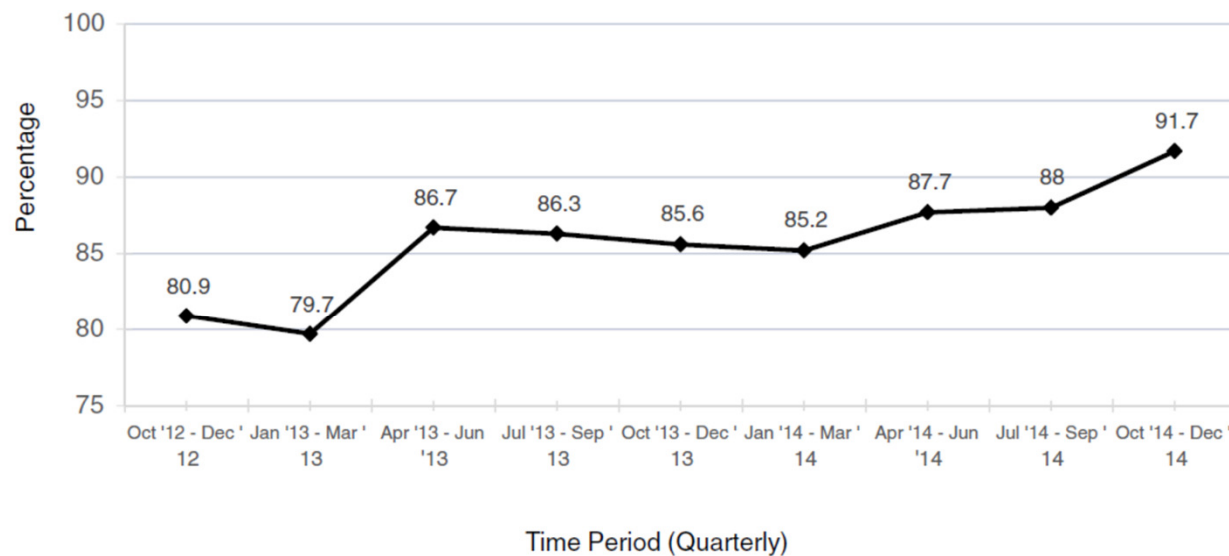
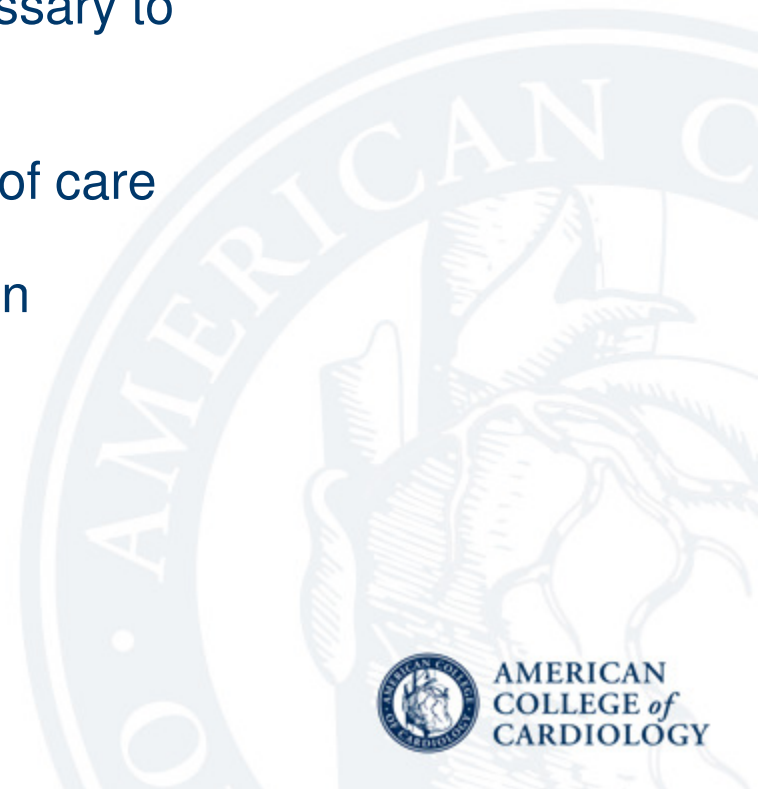


Fig. 7. Consumer assessment of healthcare providers patient satisfaction survey – discharge information.

Fadol, A. et al. Heart success program. Progress in Pediatric Cardiology. 2015. 39. 99-105.

# Management of HF In Cancer Patients

- Integrated interdisciplinary approach necessary to improve outcomes
- Organized program across the continuum of care
- Improve patient experience and satisfaction



# Summary of how to start a Cardio-oncology Practice

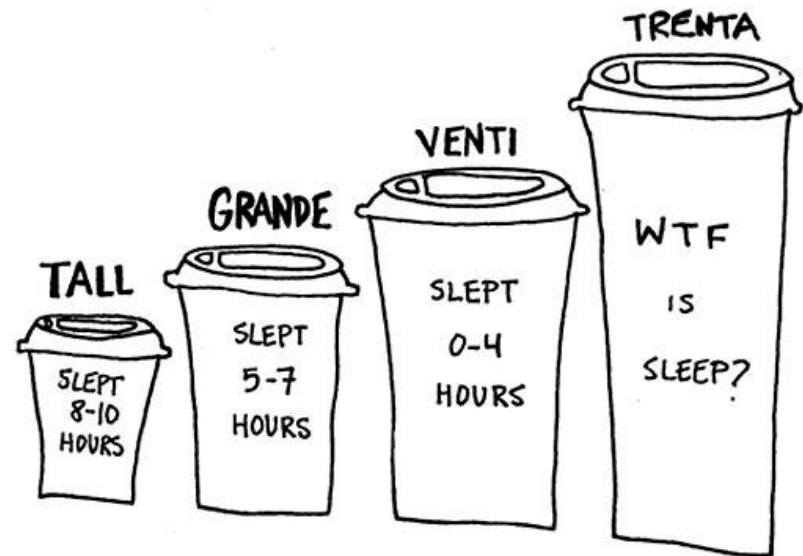
- Develop Individual Relationships and Understand the Needs
- Work as a Team
- Understand What you Can Offer and Deliver



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# How to Build a Clinical Cardio-Oncology Practice

- Communication
- Collaboration
- Coffee



<http://www.inke.com>



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# Resources

- Herrmann, Joerg et al. How To Develop A Cardio-oncology Clinic. Heart Failure Clinic Dec 26, 2016
- Fadol, A. et al. Heart success program: An interdisciplinary patient-centered approach to cancer patients with concurrent heart failure. Progress in Pediatric Cardiology. 2015. 39. 99-105.
- ACC.org cardio-oncology section and webpage
- Canadian Cardiac Oncology Network
- International Cardio-Oncology Society