

What Does Care Optimization for Heart Failure Mean?



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AMERICAN
COLLEGE *of*
CARDIOLOGY



University of Colorado Hospital
Advanced Heart Failure Center

ANSCHUTZ MEDICAL CAMPUS

Presenter Disclosure Information

- I will **not** discuss off label or investigational use in my presentation.
- I **have** financial relationships to disclose:
 - Employee of: **University of Colorado**
 - Consultant for: **J&J/Janssen, Novartis, St. Jude, ZS Pharma, Medscape**
 - Stockholder in: **None**
 - Research support from: **NIH / NHLBI, PCORI, AHA**
 - Honoraria from: **None**



What does optimization mean?



A systems problem, a systems solution

Donabedian's Quality Framework



Evidence!

CLASS (STRENGTH) OF RECOMMENDATION

CLASS I (STRONG) Benefit >>> Risk

Suggested phrases for writing recommendations:

- Is recommended
- Is indicated/useful/effective/beneficial
- Should be performed/administered/other
- Comparative-Effectiveness Phrases†:
 - Treatment/strategy A is recommended/indicated in preference to treatment B
 - Treatment A should be chosen over treatment B

CLASS IIa (MODERATE) Benefit >> Risk

Suggested phrases for writing recommendations:

- Is reasonable
- Can be useful/effective/beneficial
- Comparative-Effectiveness Phrases†:
 - Treatment/strategy A is probably recommended/indicated in preference to treatment B
 - It is reasonable to choose treatment A over treatment B

CLASS IIb (WEAK) Benefit ≥ Risk

Suggested phrases for writing recommendations:

- May/might be reasonable
- May/might be considered
- Usefulness/effectiveness is unknown/unclear/uncertain or not well established

CLASS III: No Benefit (MODERATE) Benefit = Risk (Generally, LOE A or B use only)

Suggested phrases for writing recommendations:

- Is not recommended
- Is not indicated/useful/effective/beneficial
- Should not be performed/administered/other

CLASS III: Harm (STRONG) Risk > Benefit

Suggested phrases for writing recommendations:

- Potentially harmful
- Causes harm
- Associated with excess morbidity/mortality
- Should not be performed/administered/other

LEVEL (QUALITY) OF EVIDENCE‡

LEVEL A

- High-quality evidence‡ from more than 1 RCTs
- Meta-analyses of high-quality RCTs
- One or more RCTs corroborated by high-quality registry studies

LEVEL B-R (Randomized)

- Moderate-quality evidence‡ from 1 or more RCTs
- Meta-analyses of moderate-quality RCTs

LEVEL B-NR (Nonrandomized)

- Moderate-quality evidence‡ from 1 or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies
- Meta-analyses of such studies

LEVEL C

- Randomized or nonrandomized observational or registry studies with limitations of design or execution
- Meta-analyses of such studies
- Physiological or mechanistic studies in human subjects

LEVEL E

Consensus of expert opinion based on clinical experience when evidence is insufficient, vague, or conflicting

COR and LOE are determined independently (any COR may be paired with any LOE).

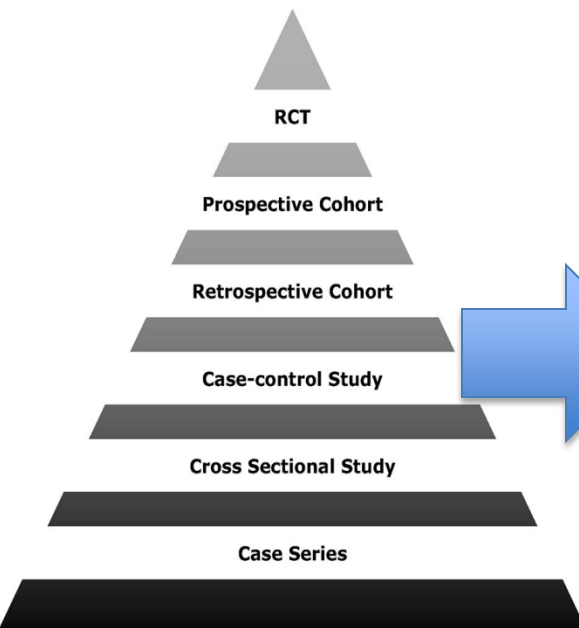
A recommendation with LOE C or E does not imply that the recommendation is weak. Many important clinical questions addressed in guidelines do not lend themselves to clinical trials. Although RCTs are unavailable, there may be a very clear clinical consensus that a particular test or therapy is useful or effective.

* The outcome or result of the intervention should be specified (an improved clinical outcome or increased diagnostic accuracy or incremental prognostic information).

† For comparative-effectiveness recommendations (COR I and IIa; LOE A and B only), studies that support the use of comparator verbs should involve direct comparisons of the treatments or strategies being evaluated.

‡ The method of assessing quality is evolving, including the application of standardized, widely used, and preferably validated evidence grading tools; and for systematic reviews, the incorporation of an Evidence Review Committee.

COR indicates Class of Recommendation; LOE, Level of Evidence; NR, nonrandomized; R, randomized; and RCT, randomized controlled trial.



2013 ACCF/AHA Guideline for the Management of Heart Failure

A Report of the American College of Cardiology Foundation/
American Heart Association Task Force on Practice Guidelines

*Developed in Collaboration With the American College of Chest Physicians, Heart Rhythm Society
and International Society for Heart and Lung Transplantation*

Endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation

WRITING COMMITTEE MEMBERS*

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European Heart Journal
doi:10.1093/eurheartj/ehw128

ESC GUIDELINES

2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)

At Risk for Heart Failure

Heart Failure

STAGE A

At high risk for HF but without structural heart disease or symptoms of HF

e.g., Patients with:

- HTN
- Atherosclerotic disease
- DM
- Obesity
- Metabolic syndrome

or

Patients

- Using cardiotoxins
- With family history of cardiomyopathy

Structural heart disease

THERAPY

Goals

- Heart healthy lifestyle
- Prevent vascular, coronary disease
- Prevent LV structural abnormalities

Drugs

- ACEI or ARB in appropriate patients for vascular disease or DM
- Statins as appropriate

STAGE B

Structural heart disease but without signs or symptoms of HF

e.g., Patients with:

- Previous MI
- LV remodeling including LVH and low EF
- Asymptomatic valvular disease

Development of symptoms of HF

THERAPY

Goals

- Prevent HF symptoms
- Prevent further cardiac remodeling

Drugs

- ACEI or ARB as appropriate
- Beta blockers as appropriate

In selected patients

- ICD
- Revascularization or valvular surgery as appropriate

STAGE C

Structural heart disease with prior or current symptoms of HF

e.g., Patients with:

- Known structural heart disease and HF signs and symptoms

HFpEF

THERAPY

Goals

- Control symptoms
- Improve HRQOL
- Prevent hospitalization
- Prevent mortality

Strategies

- Identification of comorbidities

Treatment

- Diuresis to relieve symptoms of congestion
- Follow guideline driven indications for comorbidities, e.g., HTN, AF, CAD, DM

THERAPY

Goals

- Control symptoms
- Patient education
- Prevent hospitalization
- Prevent mortality

Drugs for routine use

- Diuretics for fluid retention
- ACEI or ARB
- Beta blockers
- Aldosterone antagonists

Drugs for use in selected patients

- Hydralazine /isosorbide dinitrate
- ACEI and ARB
- Digitalis

In selected patients

- CRT
- ICD
- Revascularization or valvular surgery as appropriate

Refractory symptoms of HF at rest, despite GDMT

STAGE D

Refractory HF

e.g., Patients with:

- Marked HF symptoms at rest
- Recurrent hospitalizations despite GDMT

THERAPY





Goals

- Control symptoms
- Improve HRQOL
- Reduce hospital readmissions
- Establish patient's end-of-life goals

Options

- Advanced care measures
- Heart transplant
- Chronic inotropes
- Temporary or permanent MCS
- Experimental surgery or drugs
- Palliative care and hospice
- ICD deactivation

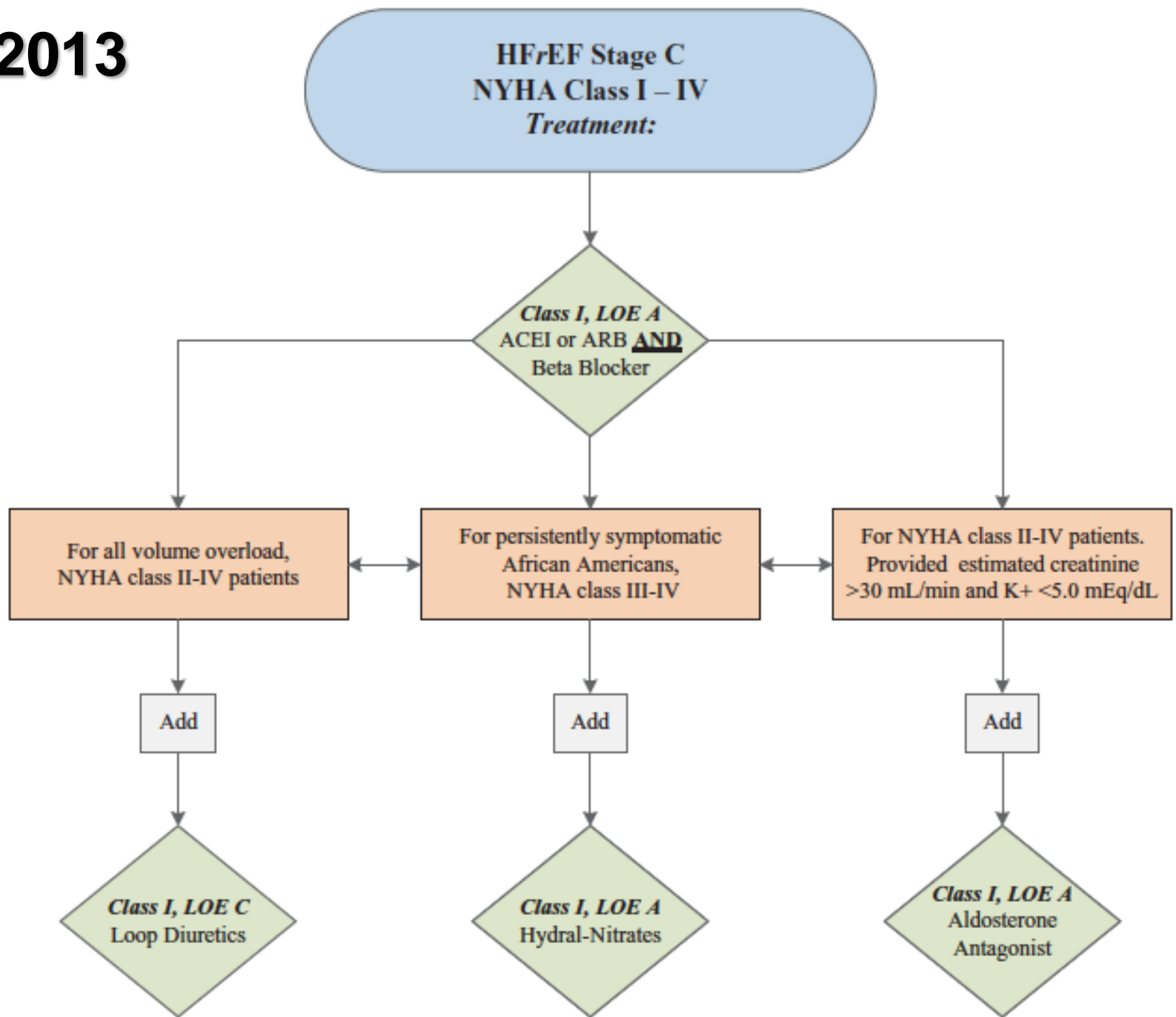
Categories of Stage C HF

	HFrEF (LVEF < 40%)	HFpEF (LVEF > 50%)	RV Failure
Chronic (Stable)			
Acute (Unstable)			

Volume Control



AHA 2013



After a decade of not much ...

- CardioMEMS
- Cardiac rehabilitation
- Ivabradine
- Sacubitril/valsartan
- CRT refinements
- SQ-ICD
- MCS options

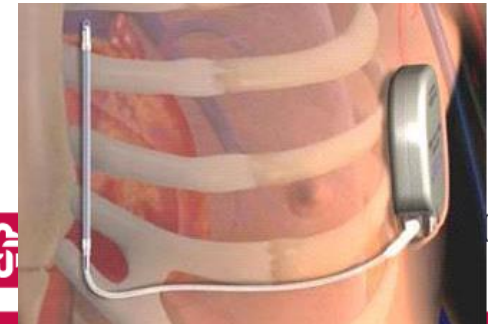


(ivabradine) ^{5 mg}/_{7.5 mg} tablets



(sacubitril/valsartan) tablets

24/26mg • 49/51mg • 97/103mg



2016 ACC/AHA/HFSA Focused Update on New Pharmacological Therapy for Heart Failure: An Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure

A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America



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Angiotensin–Neprilysin Inhibition versus Enalapril in Heart Failure

John J.V. McMurray, M.D., Milton Packer, M.D., Akshay S. Desai, M.D., M.P.H., Jianjian Gong, Ph.D., Martin P. Lefkowitz, M.D., Adel R. Rizkala, Pharm.D., Jean L. Rouleau, M.D., Victor C. Shi, M.D., Scott D. Solomon, M.D., Karl Swedberg, M.D., Ph.D., and Michael R. Zile, M.D.,
for the PARADIGM-HF Investigators and Committees*

Articles

Ivabradine and outcomes in chronic heart failure (SHIFT): a randomised placebo-controlled study



Karl Swedberg, Michel Komajda, Michael Böhm, Jeffrey S Borer, Ian Ford, Ariane Dubost-Brama, Guy Lerebours, Luigi Tavazzi, on behalf of the SHIFT Investigators*

Summary

Background Chronic heart failure is associated with high mortality and morbidity. Raised resting heart rate is a risk *Lancet* 2010; 376: 875–85

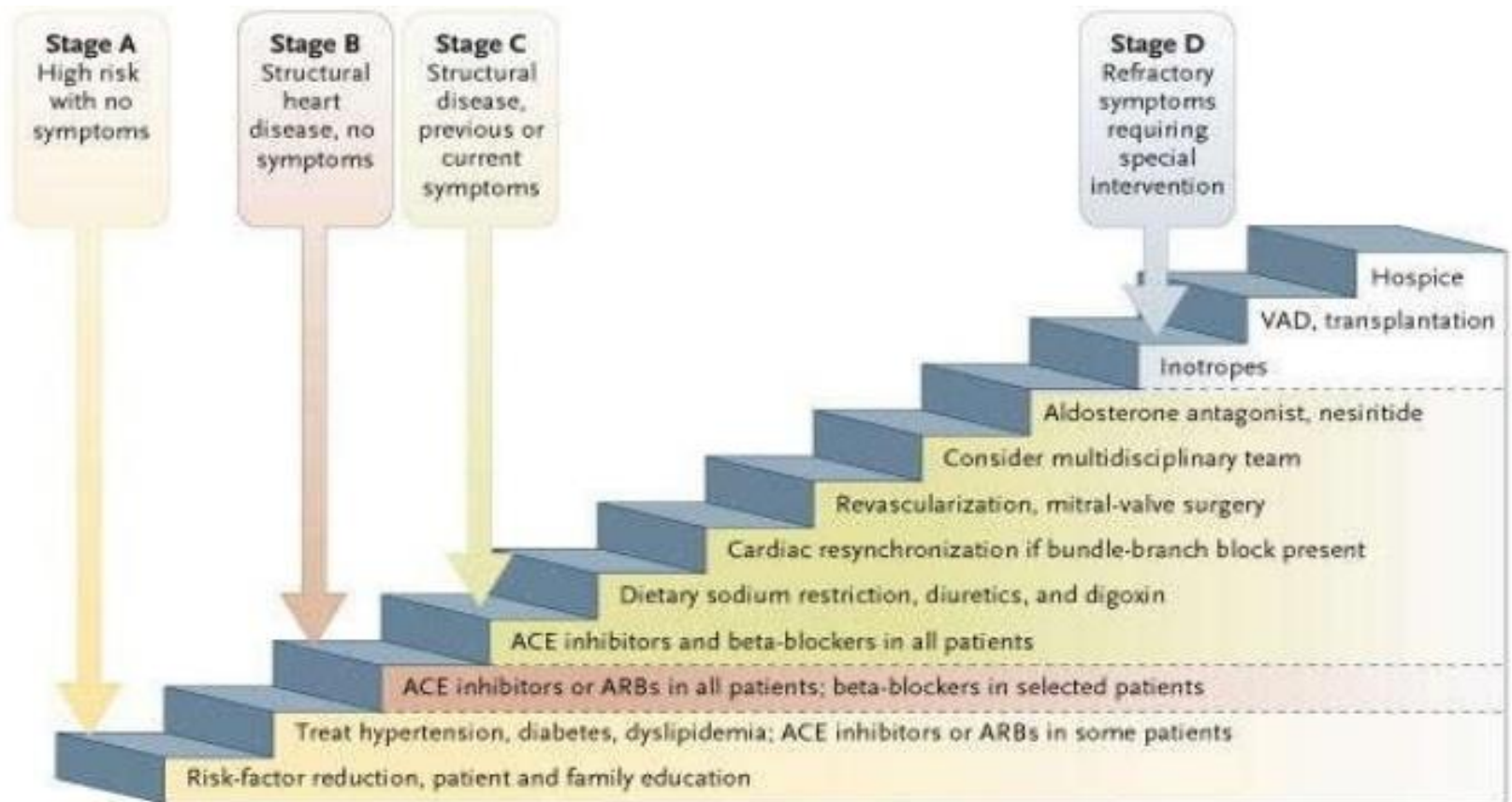
create growth interaction integrate resilient project social
design creativity economics new management priorities products systems talent
chaos competition entrepreneur digital leadership stakeholders unique
change authenticity business technology transformation
action agility companies experiences interconnected organizations teams sustainable trust
complexity ideas services strategy
consumers innovation flexibility open invention risk people resources



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The cumulative burden of success

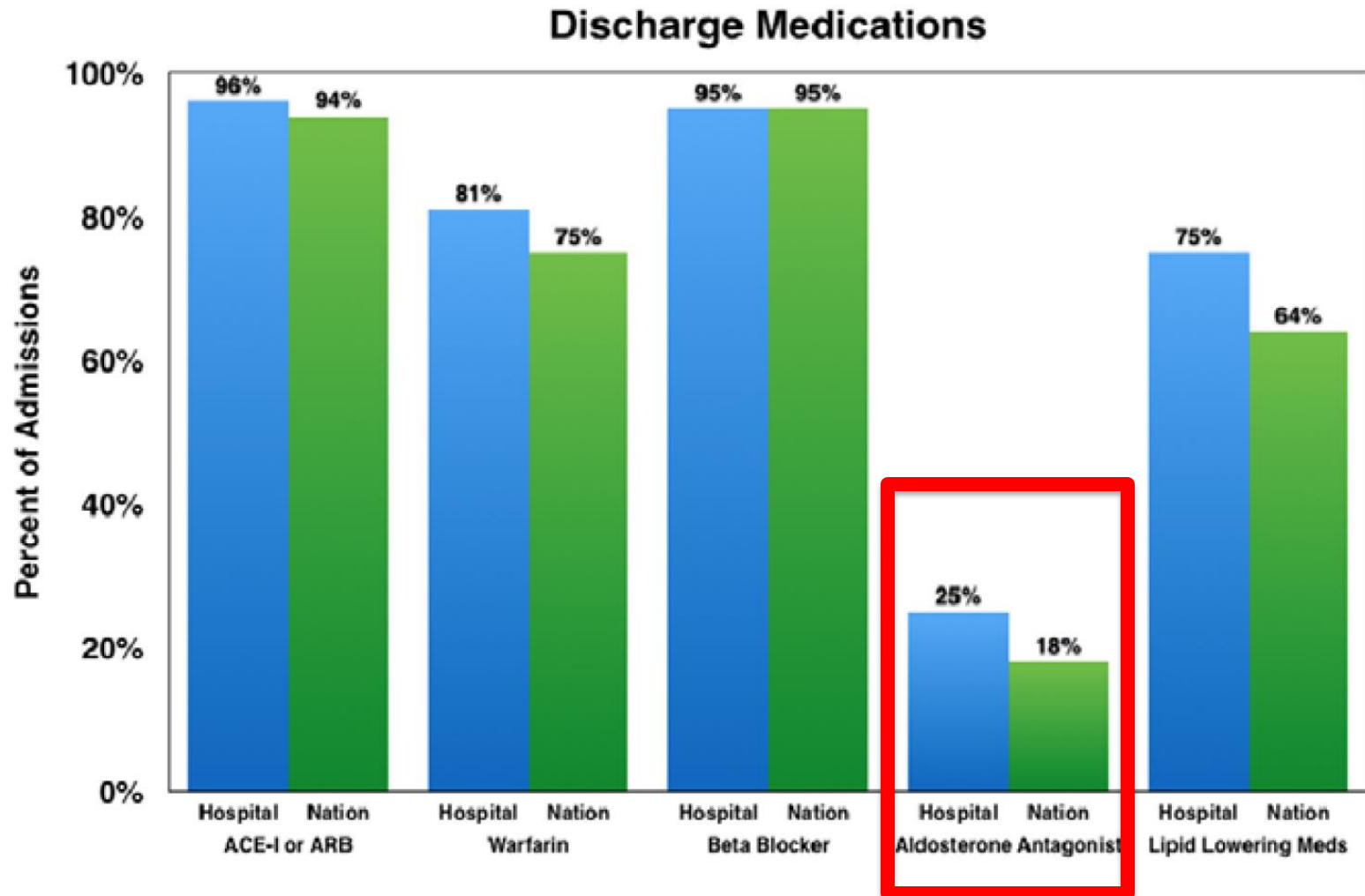


Jessup M, Brozena S. N Engl J Med 2003;348:2007-2018.

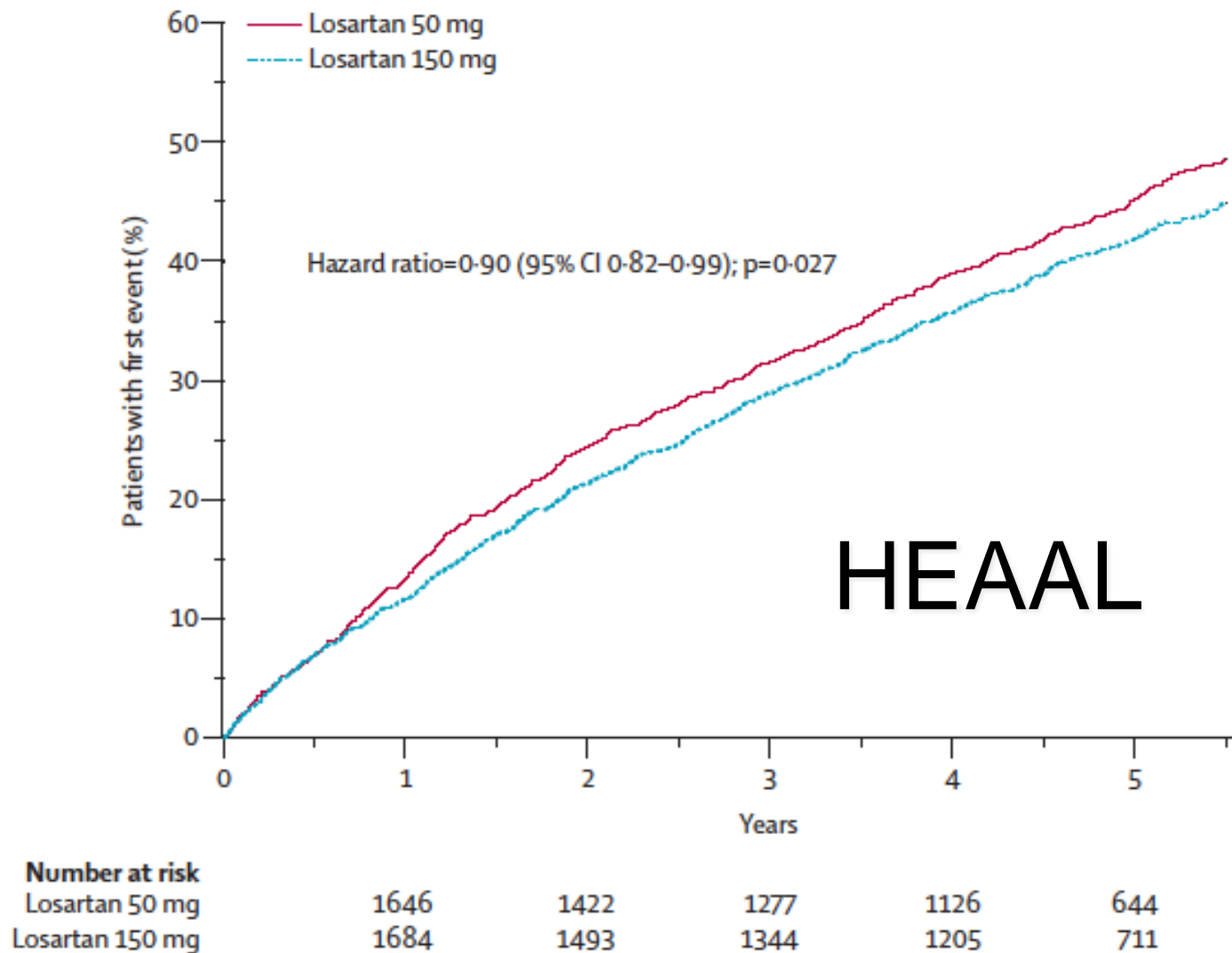
52%: 5+ co-occurring conditions



Failure to prescribe the basics



Failure to dose maximize

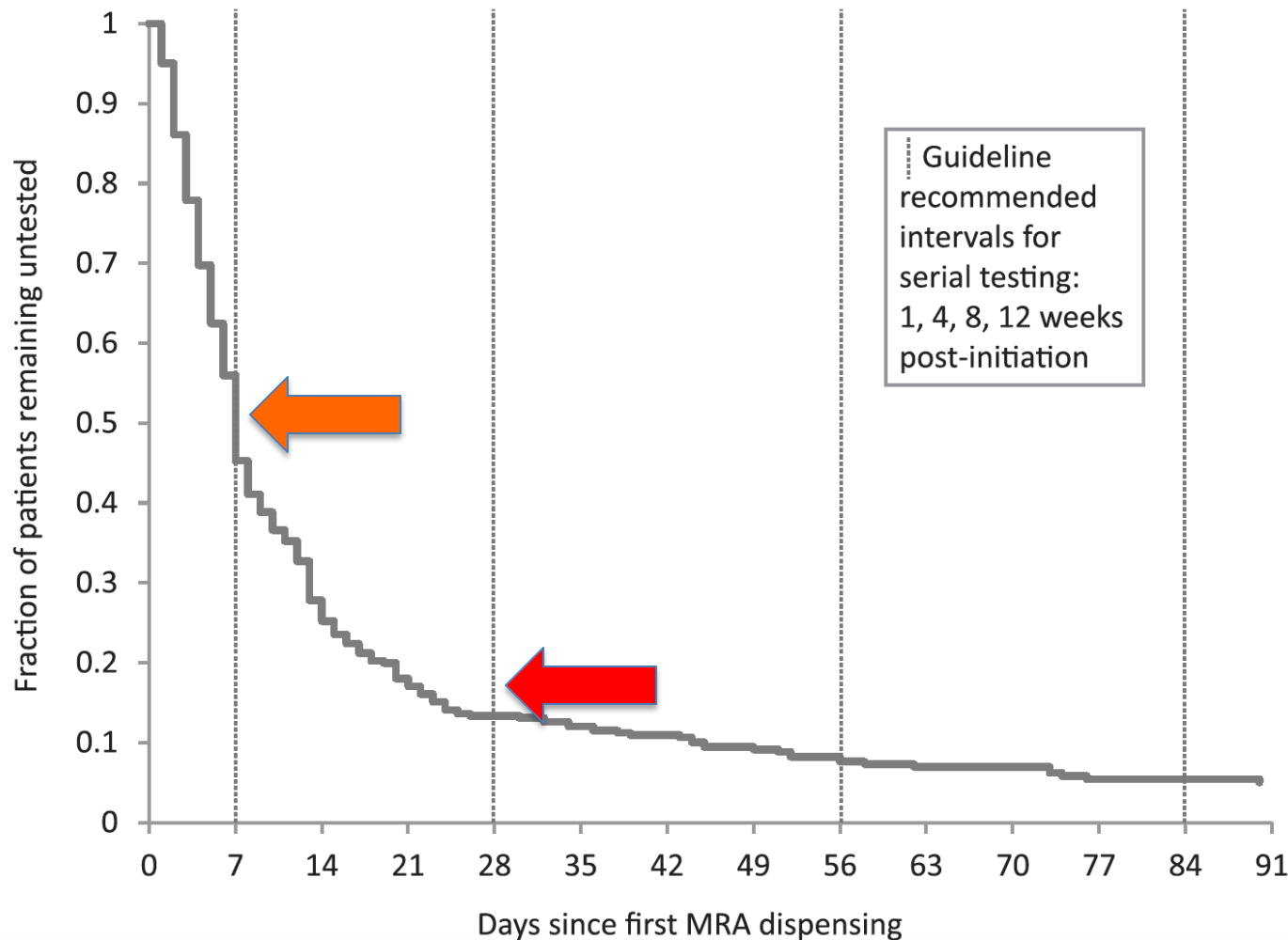


Lancet 2009; 374: 1840-48

Failure to monitor

39.0983
B3 bcc
63.83°
759°
0.86
0.82
[Ar]4s¹ (Kalium)
Potassium

19
1
K

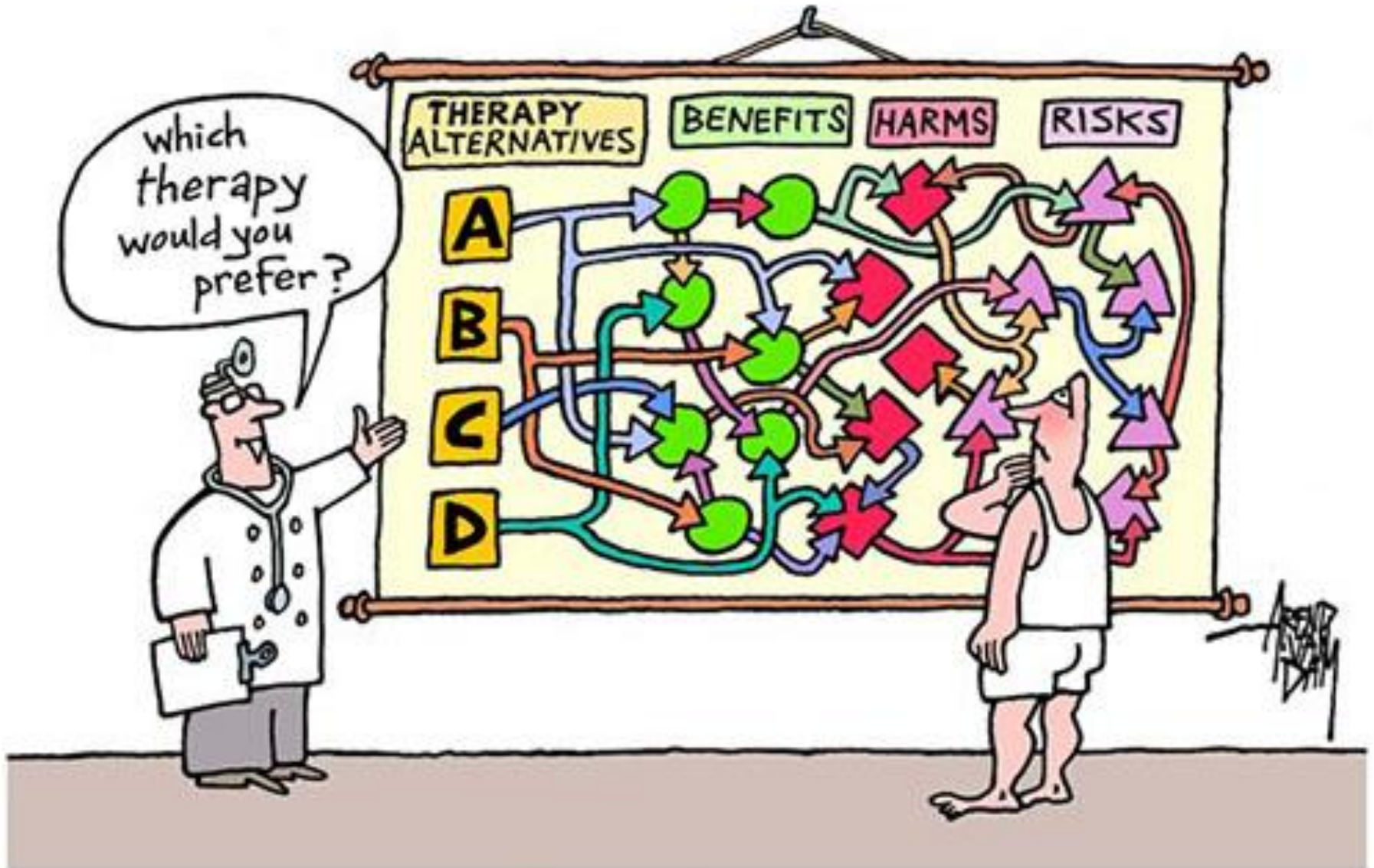


(*Circ Heart Fail.* 2014;7:43-50.)



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Failure to engage patients

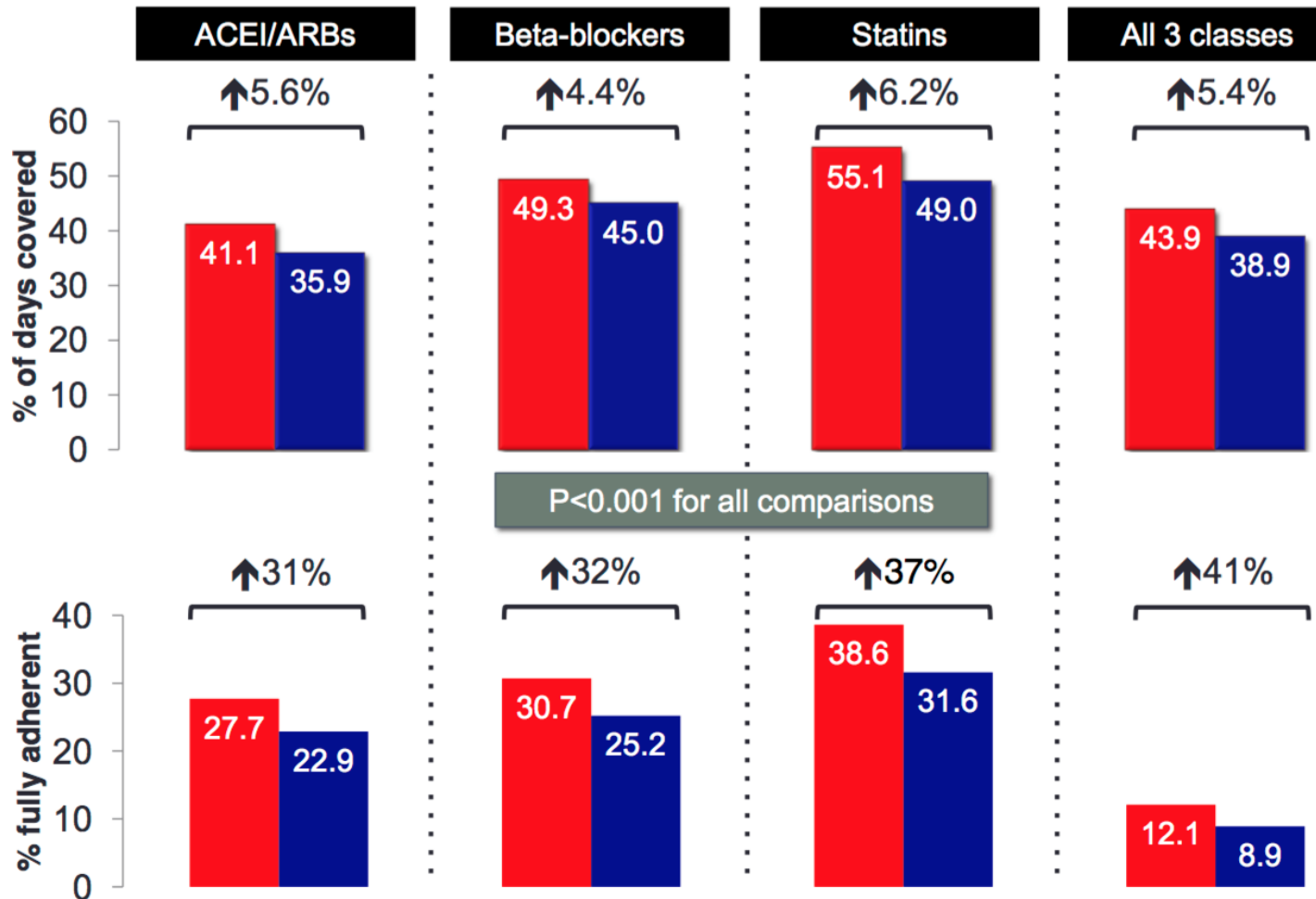


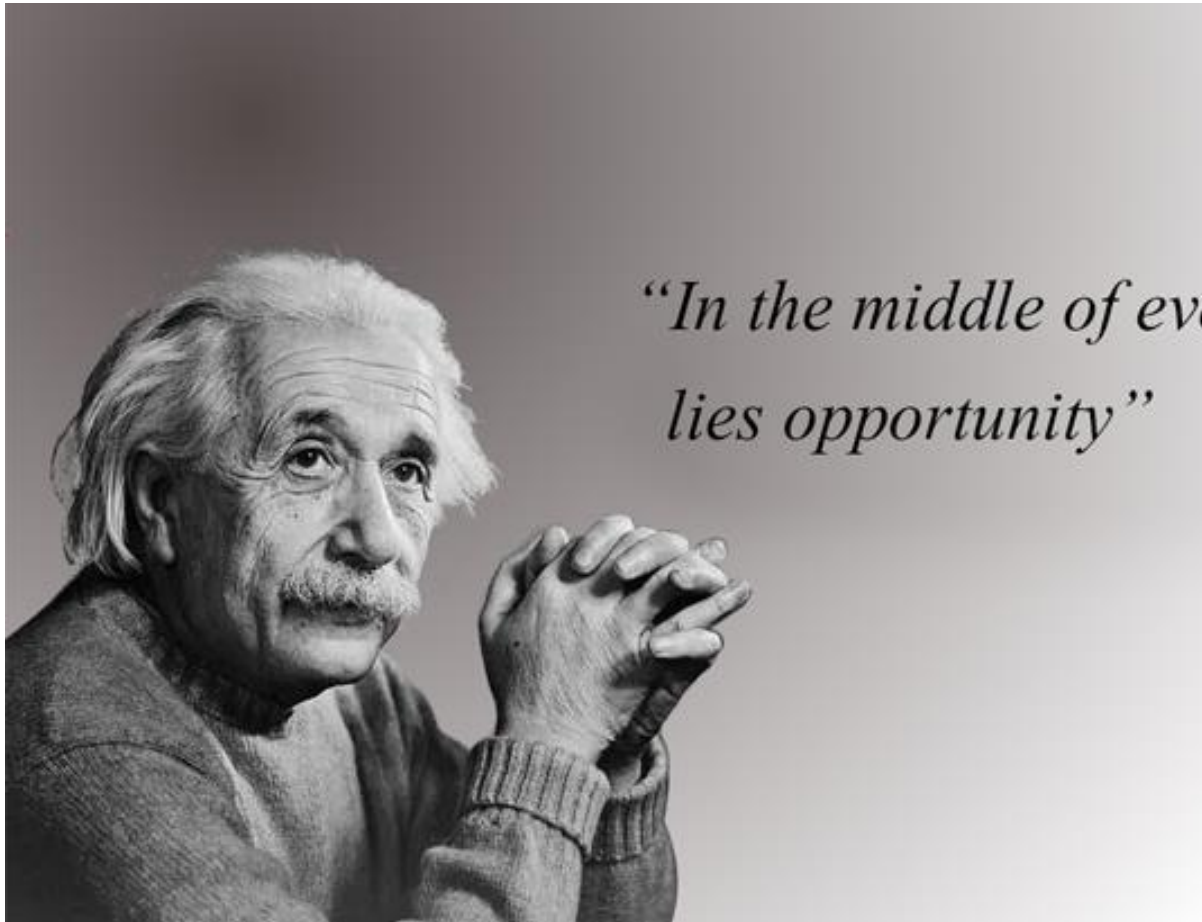
Failure to adhere

Medication adherence

MI FREEE

Full coverage Usual coverage



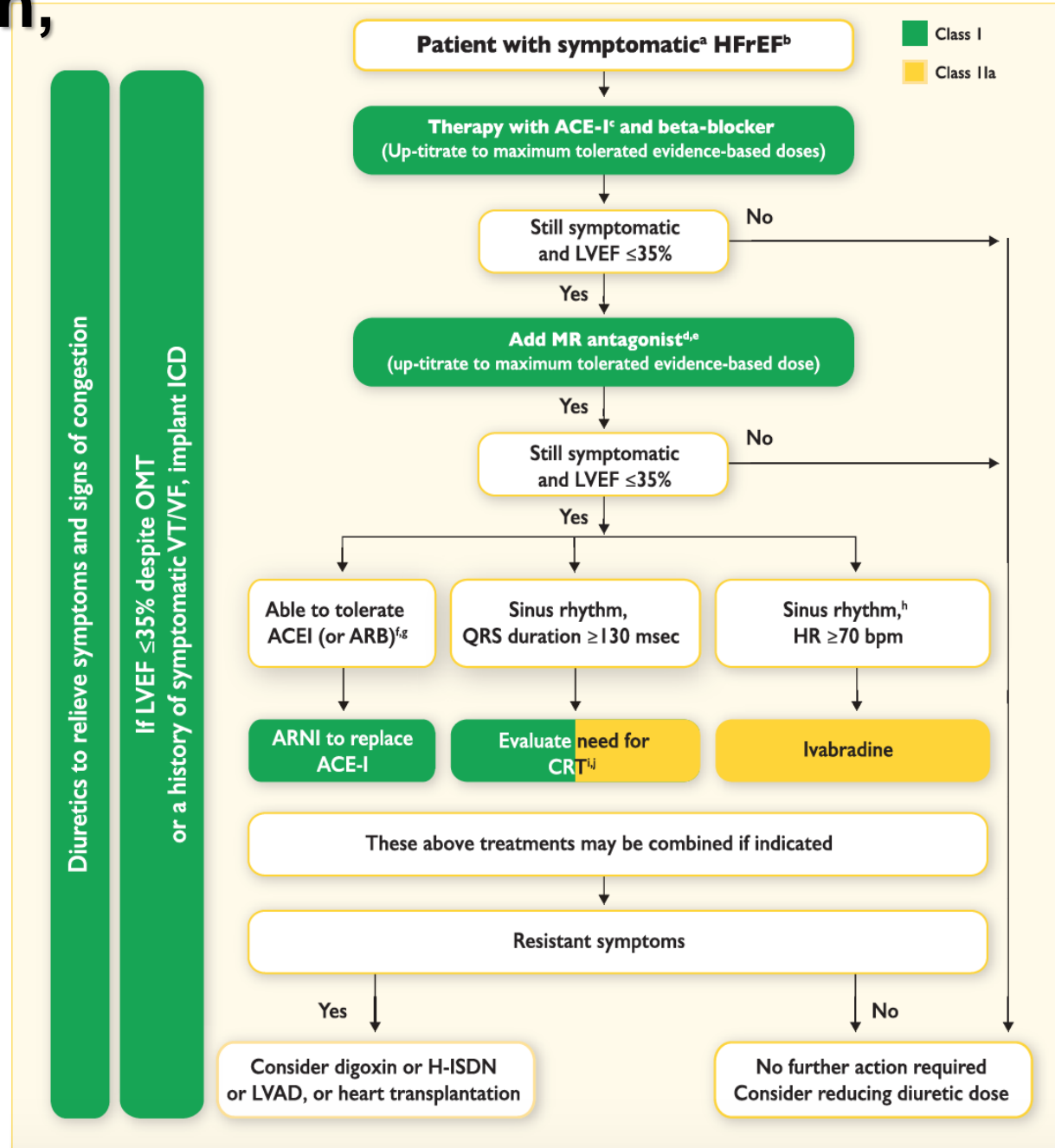


*“In the middle of every difficulty
lies opportunity”*

- Albert Einstein

#1: Simplification, Step-wise

ESC 2016



#2: Leverage information technology

BestPractice Advisories

▼ Critical (1 Advisory)

⚠ Please use the Heart Failure Admission Order Set in patients with suspected/actual heart failure. (BPA# 922)

Acknowledge reason:

Doesn't have HF - don't use HF order set

Defer decision re: HF admit order set

☒ Open Order Set: UCH Congestive Heart Failure Admission [preview](#)

Refresh

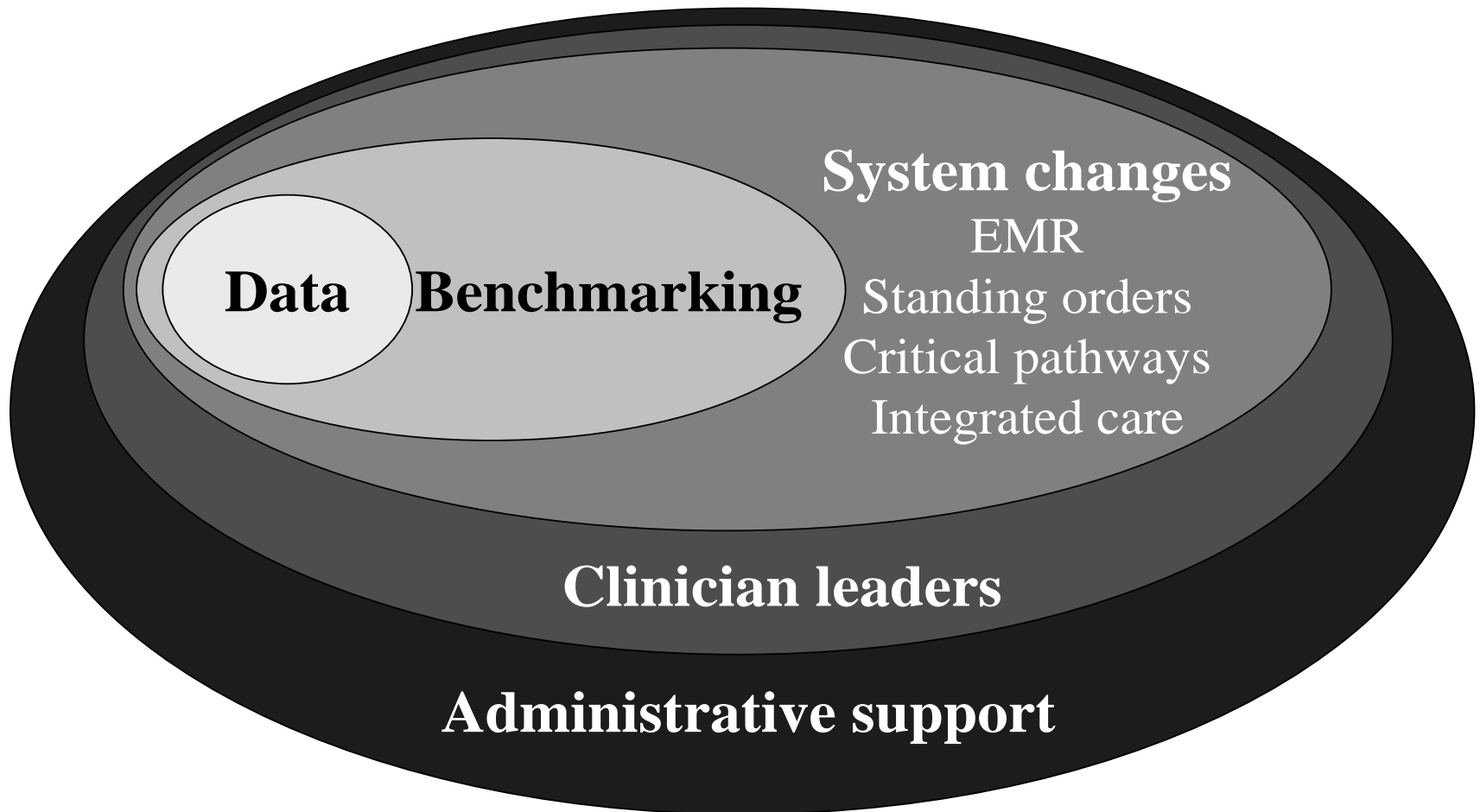
Last refreshed on 9/25/2013 at 8:26 AM



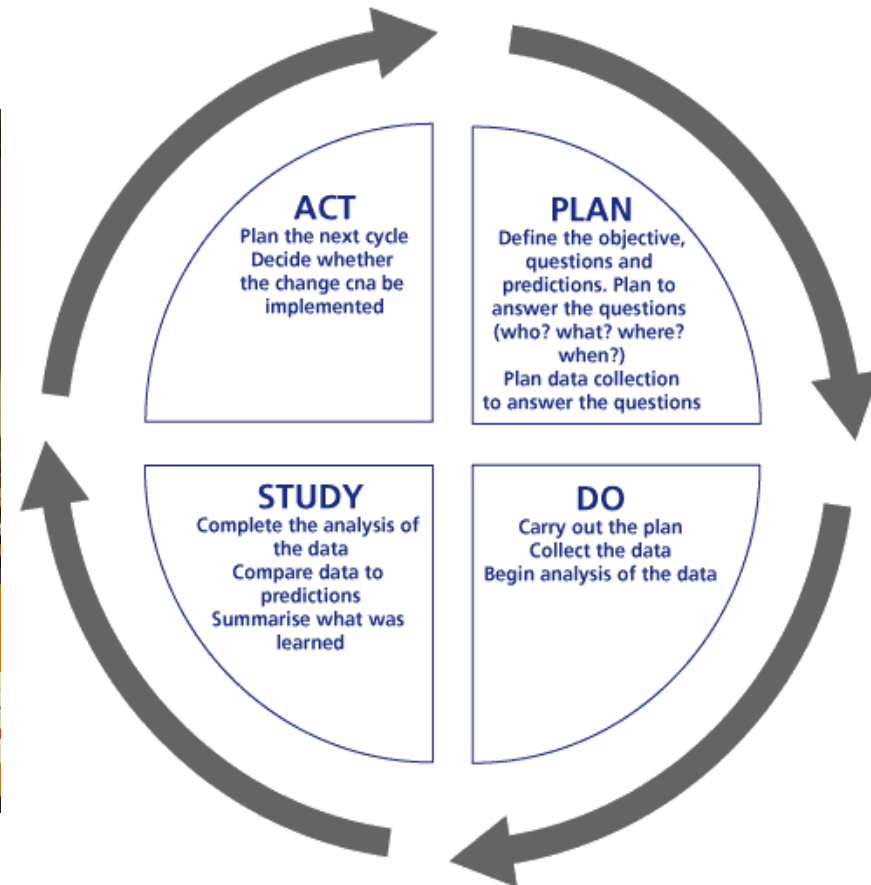
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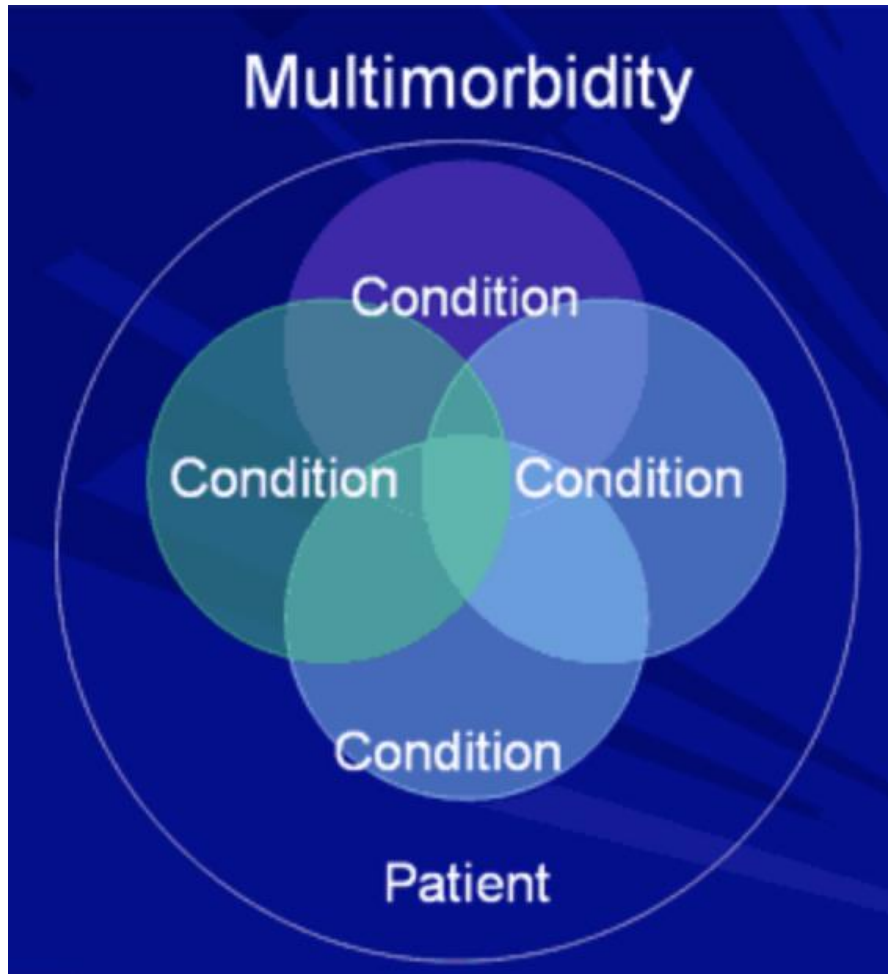
#3: Measurement and Feedback (e.g. NCDR, PINNACLE)



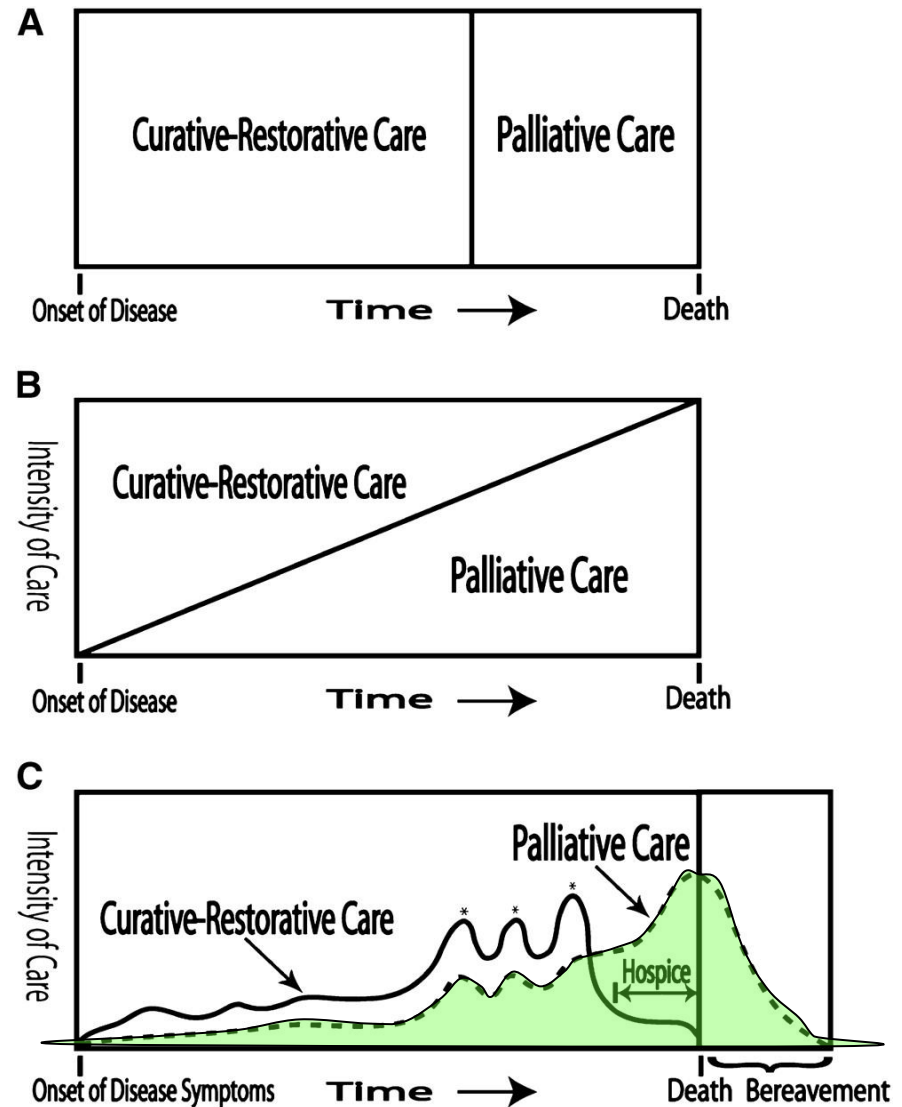
#4: Team-based, local solutions



#5: Big picture context



Lanken PN et al. Am J Respir Crit Care Med 2008.



SUMMARY: What does care optimization for HF mean?

Having the **TOOLS** and **INCENTIVES** to provide ...



The right treatment for the right patient
at the right time!

(The Devil is in the details)

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