

Developing a Cancer Survivorship Research Agenda: Where to start?

Patricia A. Ganz, M.D.

UCLA-LIVESTRONG Survivorship Center of Excellence

Jonsson Comprehensive Cancer Center

UCLA Schools of Medicine & Public Health

Overview

- The changing face of cancer: the challenge of an aging population
- Limited resources for delivery of health care; increased fragmentation of care
- What are the research opportunities?
- Where to start?

Aging & the Cancer Epidemic

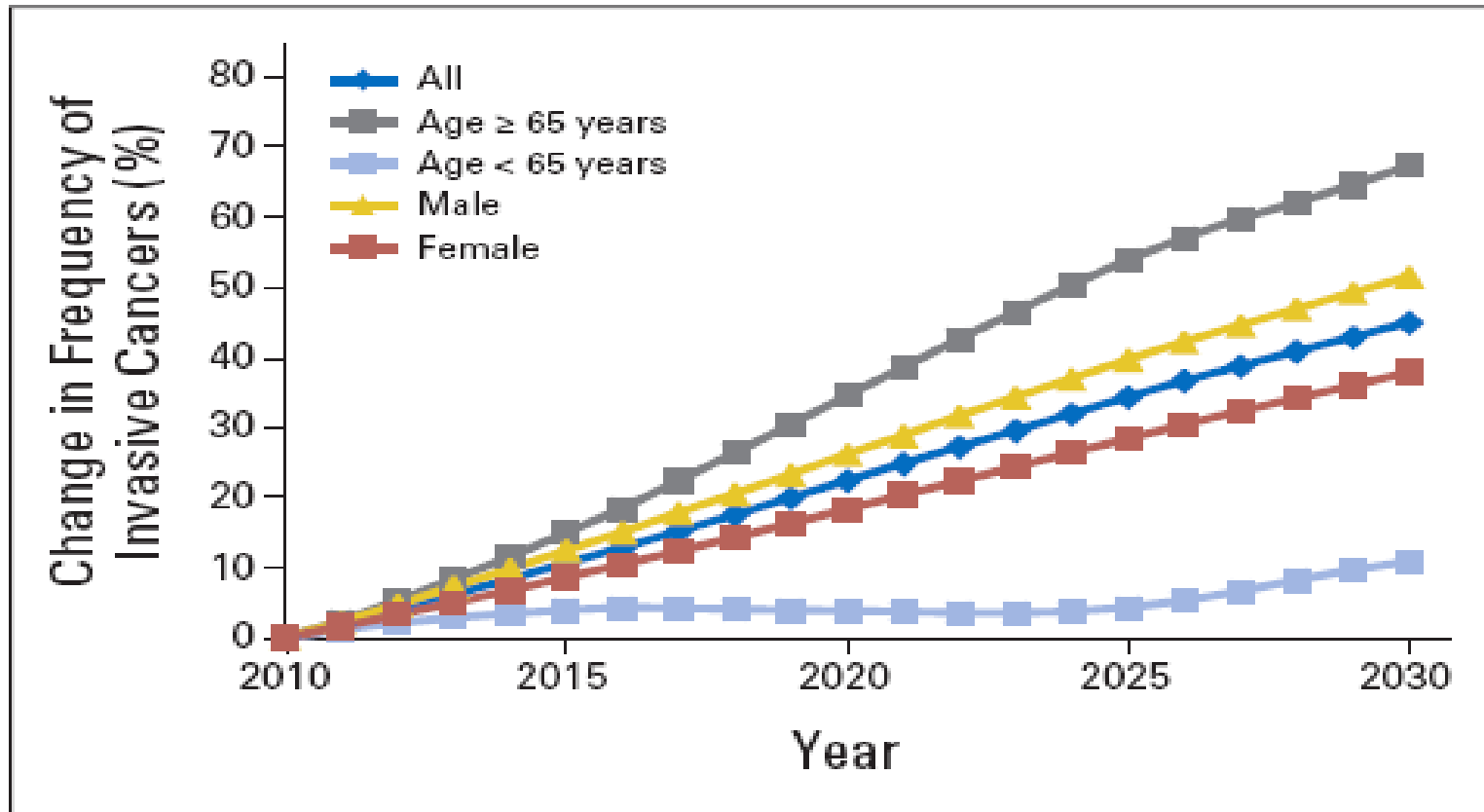


Fig 1. Projected change in frequency of invasive cancers in the United States by age and sex. Nonmelanoma skin cancers were excluded from projections. Data adapted.⁷

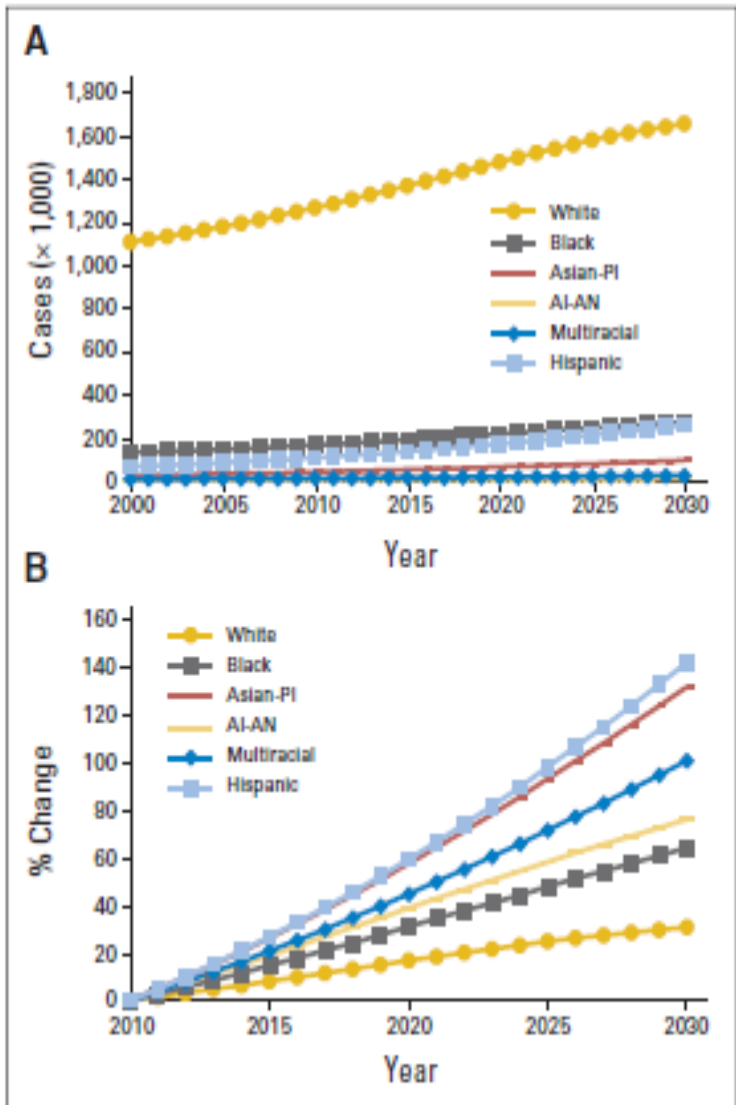


Fig 5. Projected cases of all invasive cancers in the United States by race and origin. (*) Nonmelanoma skin cancers were excluded from projections. The Hispanic origin group contains individuals of any race. The race groups white, black, Asian/Pacific Islander (PI), American Indian (AI)/Alaska Native (AN), and multiracial contain only non-Hispanic individuals.

- From 2010-30, total cancer incidence will increase from 1.6 to 2.3 million
- Increase is driven by the aging of the population (67% increase from older adults vs. 11% in younger adults)
- A 99% increase is anticipated for minorities, compared with 33% for whites
- Percentage of all cancers diagnosed in minorities will increase from 21% to 28%

Who are the Cancer Survivors?

- More than 1 in 3 Americans will be diagnosed with cancer in their lifetime
- Almost 14 million Americans have a personal history of cancer; 4% of US population
- More than 25 million people are survivors world wide
- The number of cancer survivors will increase sharply during the next 25 yrs with aging of the population

US Cancer Survivor Facts

- ✓ 60% of survivors are currently over the age 65 years.
- ✓ Breast, Prostate, and Colorectal, are the 3 most prevalent cancer sites.
- ✓ Approximately 14% of the 13.7 million estimated cancer survivors were diagnosed over 20 years ago.
- ✓ The current average age of male and female cancer survivors is 69 and 64 respectively.

Trends in Five-year Relative Survival (%)* Rates, US, 1975-2003

Site	1975-1977	1984-1986	1996-2003
All sites	50	54	66
Breast (female)	75	79	89
Colon	51	59	65
Leukemia	35	42	50
Lung and bronchus	13	13	16
Melanoma	82	87	92
Non-Hodgkin lymphoma	48	53	64
Ovary	37	40	45
Pancreas	2	3	5
Prostate	69	76	99
Rectum	49	57	66
Urinary bladder	74	78	81

*5-year relative survival rates based on follow up of patients through 2004.

Source: Surveillance, Epidemiology, and End Results Program, 1975-2004, Division of Cancer Control and Population Sciences, National Cancer Institute, 2007.

Burden of Illness in Cancer Survivors: Findings From a Population-Based National Sample

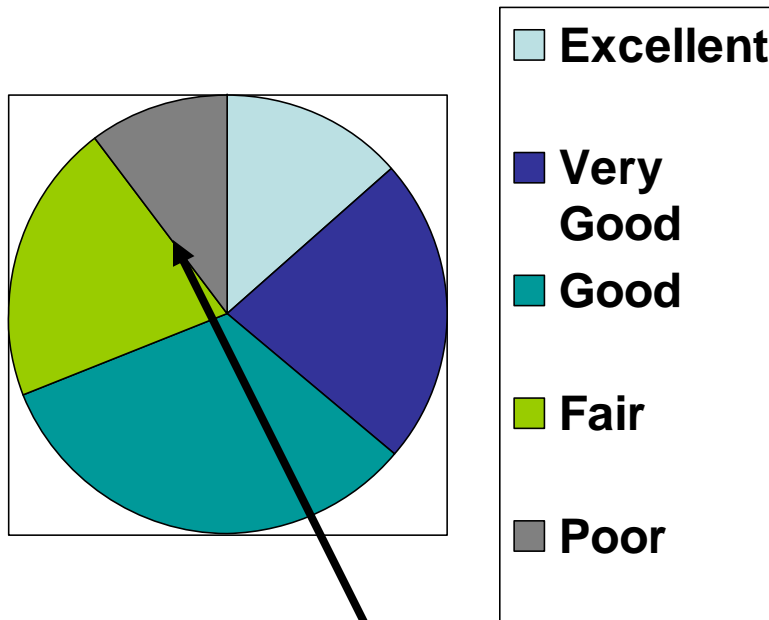
K. Robin Yabroff, William F. Lawrence, Steven Clauser, William W. Davis, Martin L. Brown

- Comparison of cancer survivors and age-matched individuals from the National Health Interview Survey (NHIS) in 2000
- Multiple measures of burden embedded within the survey

JNCI 96:1322, 2004

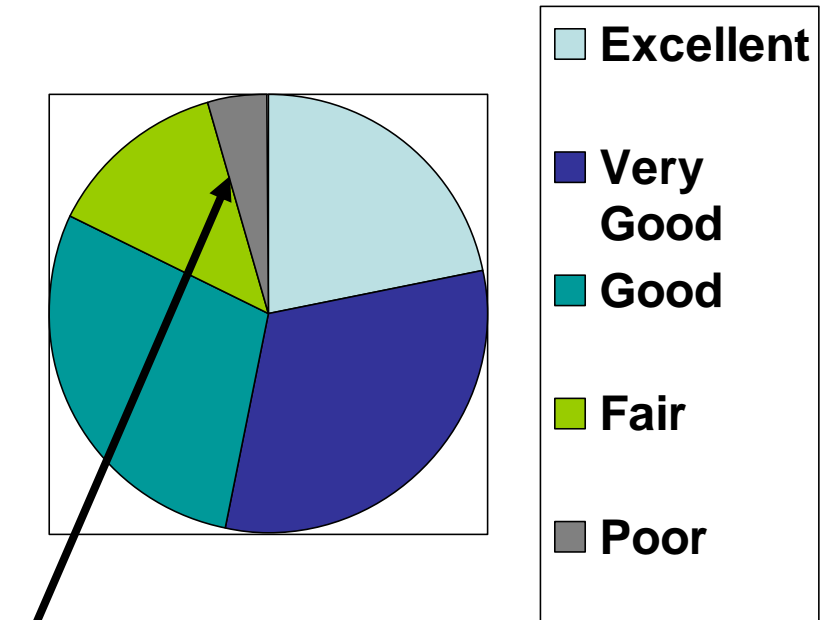
Health Status is Significantly Poorer in Cancer Survivors

Cancer Survivors (N=1817)



31% Fair & Poor

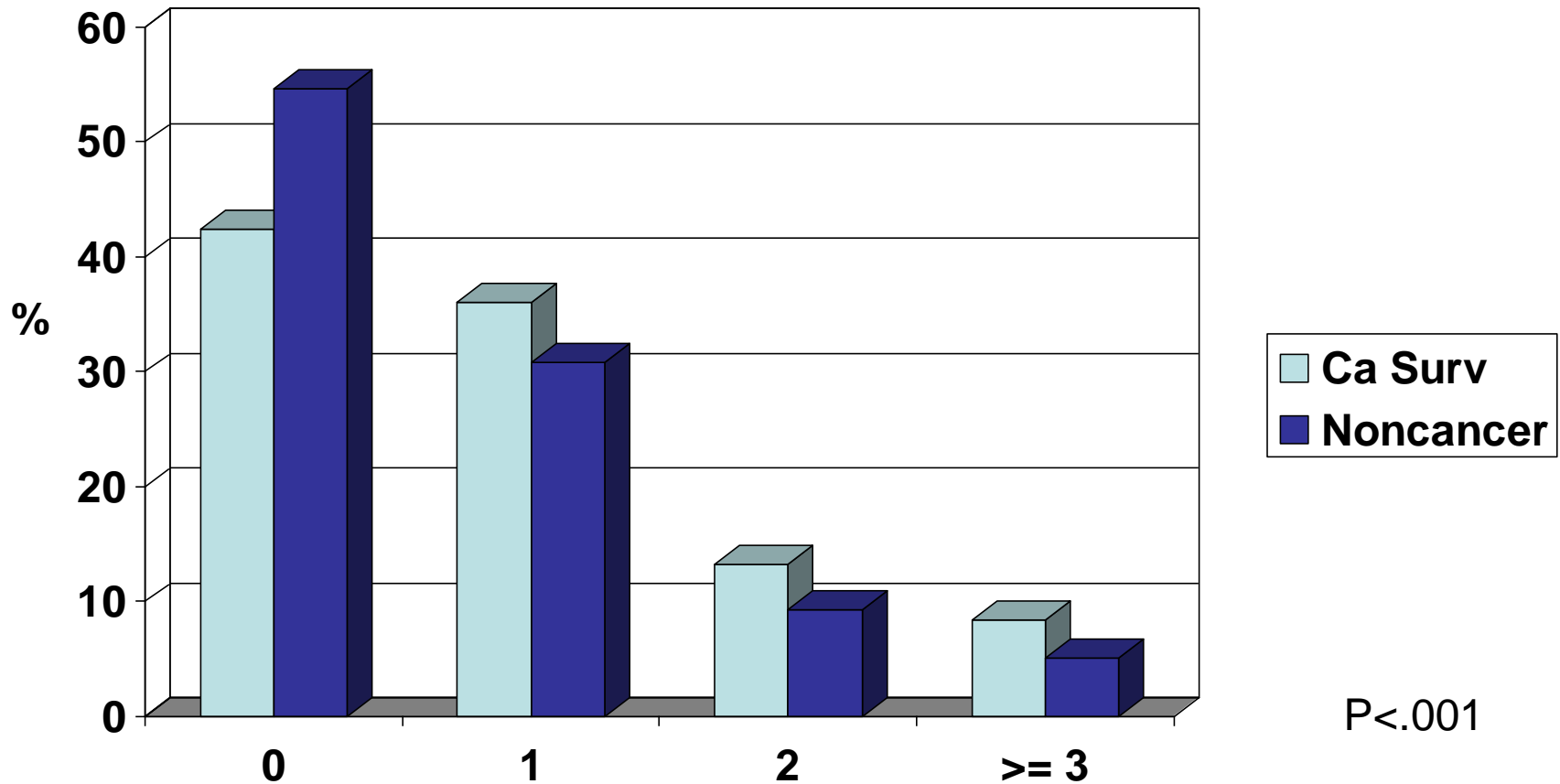
Noncancer Controls (N=5465)



18% Fair & Poor

Number of Comorbid Conditions

Burden of Illness is Greater



Cancer Survivors Need More Help with Activities of Daily Living (ADLs)

	Cancer survivors N=1817	Noncancer controls N=5465	
Needs help with instrumental ADLs	11.4%	6.5%	P <.001
Any limitation in any way	36.2%	23.8%	P <.001
Needs help with ADLs	4.9%	3.0%	P=.003

Survivorship research....

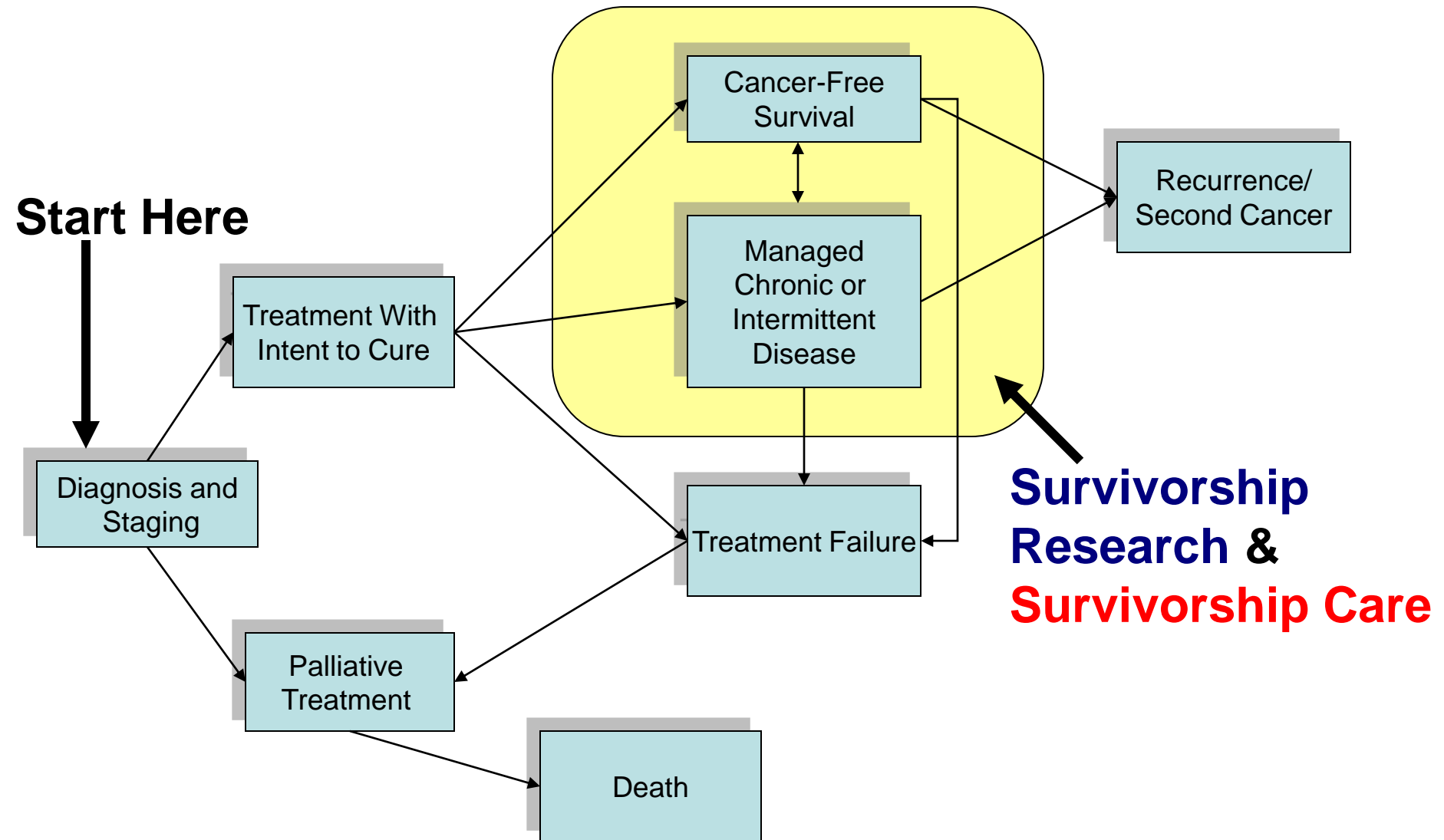
- A requirement for development of treatments to improve quality of life for cancer survivors
- Necessary for prevention of late effects, through understanding of biological mechanisms and modification of cancer treatments

Cancer Centers must lead the way!

Opportunities

- Need for translational teams of researchers—move the observations from the clinic and population back to the lab—to understand biological mechanisms
- Focus on primary, secondary and tertiary prevention of long-term and late effects
- *Assume each patient you treat will be a survivor—treat for cure AND treat for long-term survivorship!*

Cancer Care Trajectory



**Survivorship
Research &
Survivorship Care**

Why is cancer different from other chronic diseases?

- Cancer treatment is....
 - Complex
 - Multi-modal
 - Multi-disciplinary
 - Toxic
 - Expensive
 - And often poorly coordinated
- Cancer treatment usually occurs in isolation from primary health care delivery

Other Challenges

- Limited systematic study of the late effects of cancer therapy
- Follow-up care plans have been *ad hoc*, with focus on surveillance for recurrence
- When should health promotion and chronic disease prevention become the focus?
- Infertility? “Dear, you should just be happy to be alive.”

Survivorship Health Care Delivery: A need for systematic research

- The Three P's of Survivor Care
(according to Ganz)
 - Palliation
 - Prevention
 - Health Promotion

Symptom Management/Palliative Care: An Integral Part of Survivorship Care

■ Definition of Palliative Care:

- Medical care or treatment that concentrates on reducing the severity of disease symptoms (particularly if there is not a curative medical treatment)
 - Goal is to prevent and relieve suffering and to improve QOL for people facing complex illness
- ## ■ Focus on the most severe and prolonged symptoms

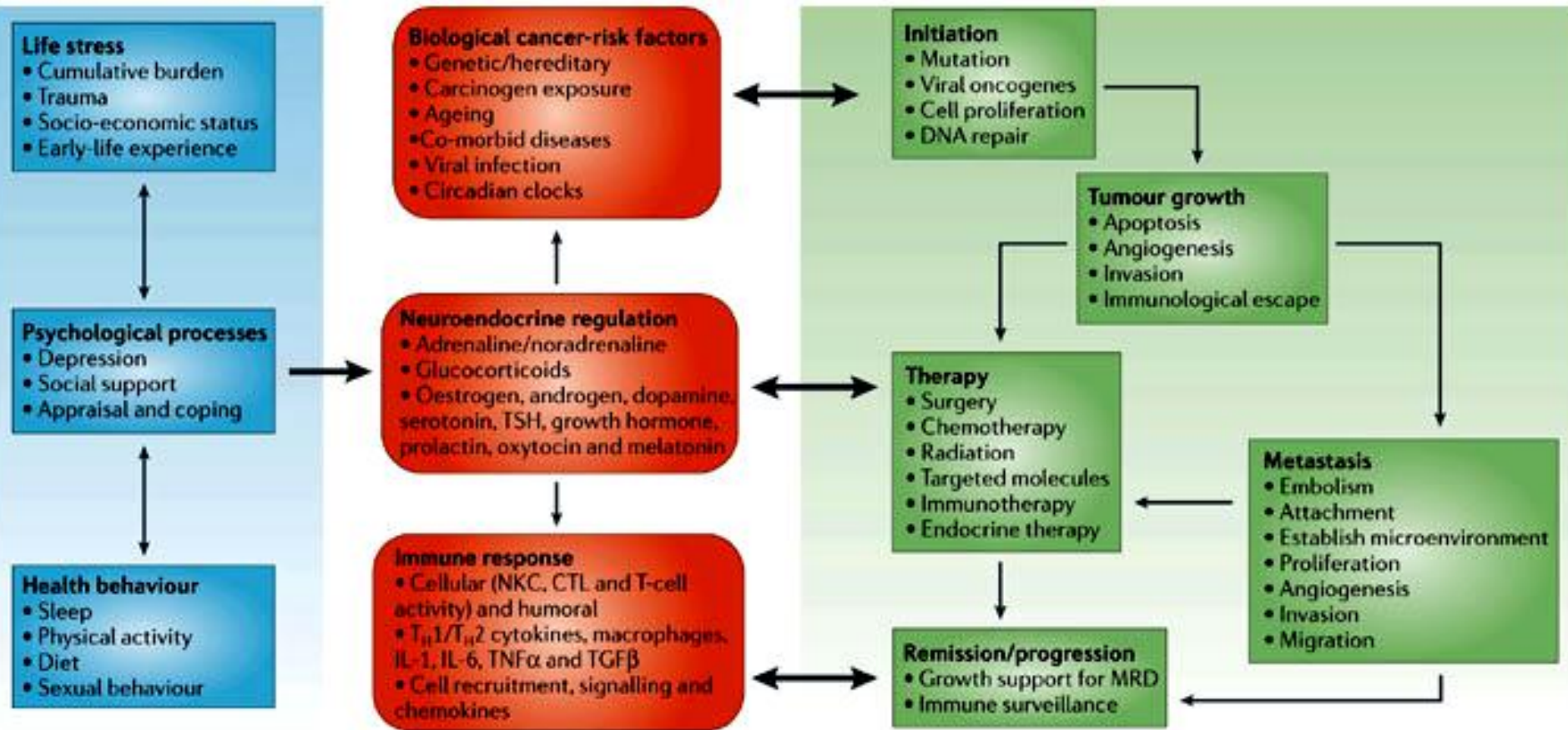
Common Palliative Care Concerns

- Pain
- Fatigue
- Depression
- Physical limitations
- Cognitive changes
- Lymphedema
- Sexual dysfunction
- Menopause related symptoms
- Body Image

Why is it important to understand biological mechanisms?

- Identification of underlying biology provides support/validity for complaints
- Leads to possible interventions (pharmacological or behavioral)
- Potential for prevention, if at-risk individuals identified
- Possible relationship to tumor biology and progression

A Biobehavioral Model of Cancer



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Antoni *et al.* Nature Reviews Cancer 6, 240–248 (March 2006) | doi:10.1038/nrc1820

Prevention

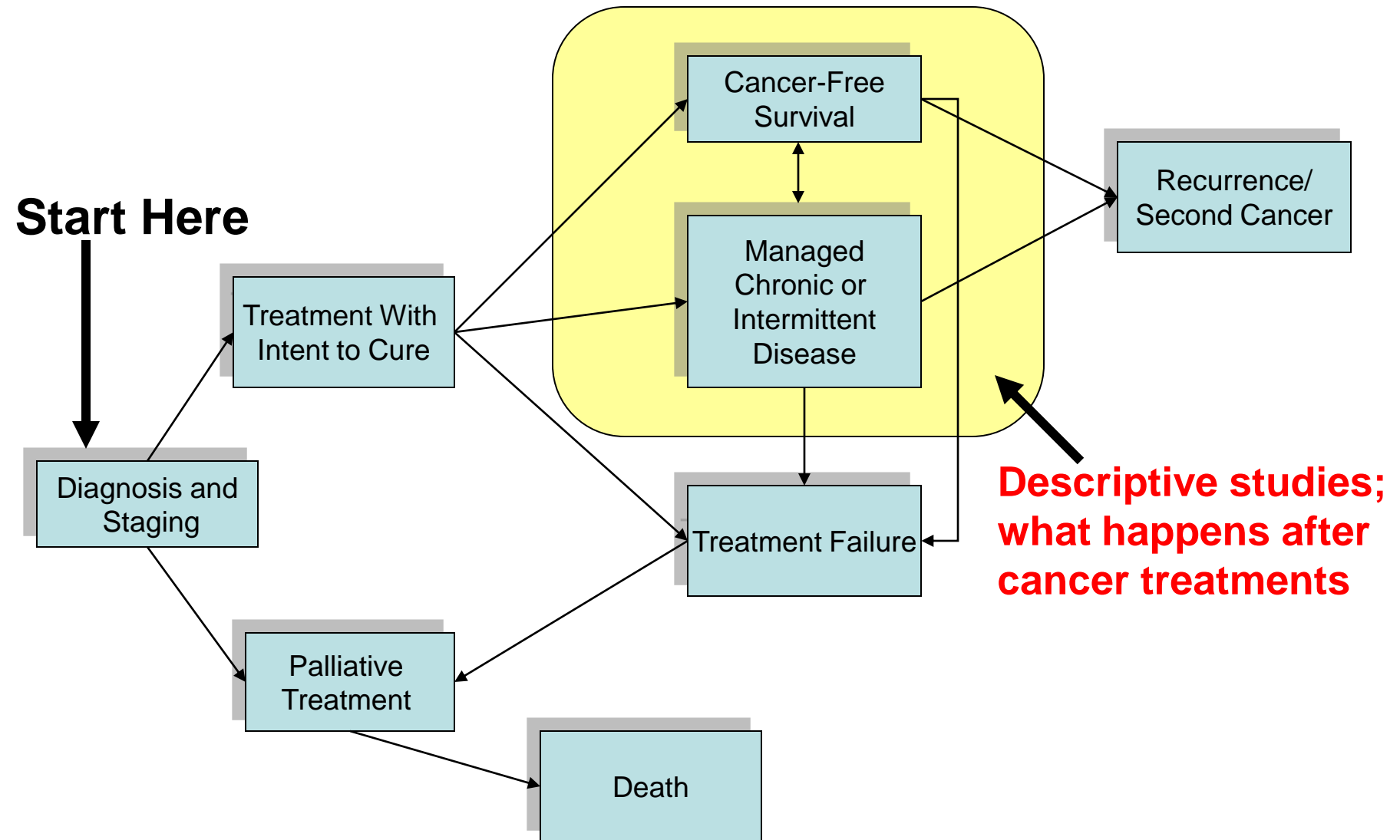
- Systematic ongoing follow-up required for screening
 - Goal: early detection and early intervention for potentially serious late-onset complications e.g., cataracts, osteoporosis, cardiac disease
 - Chemoprevention when available
 - Life style modification to prevent second cancers

Health Promotion

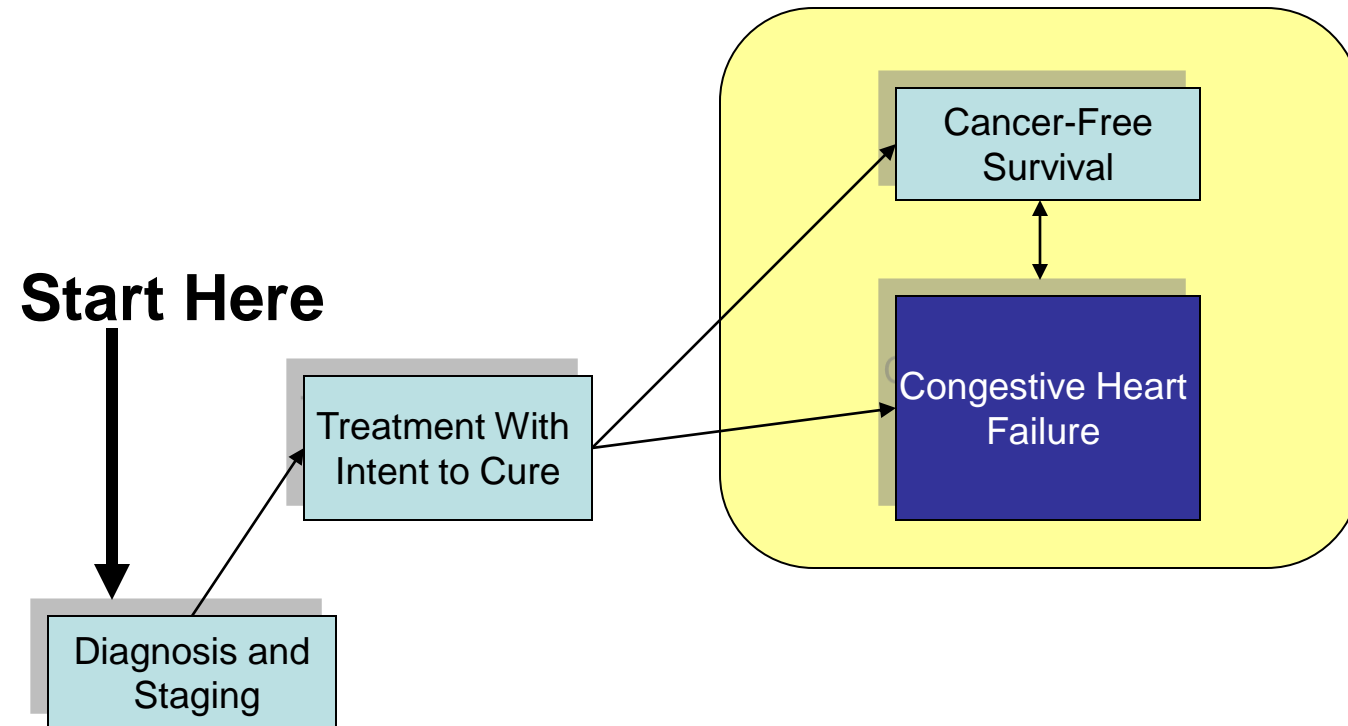
■ Health promotion counseling

- Goal: promote risk reduction for health problems that commonly present during adulthood (esp. for childhood cancer survivors)
- Avoid weight gain
- Increase physical activity
- Avoidance of exposures that are harmful
- Decrease risk of other chronic diseases, e.g. diabetes, heart disease

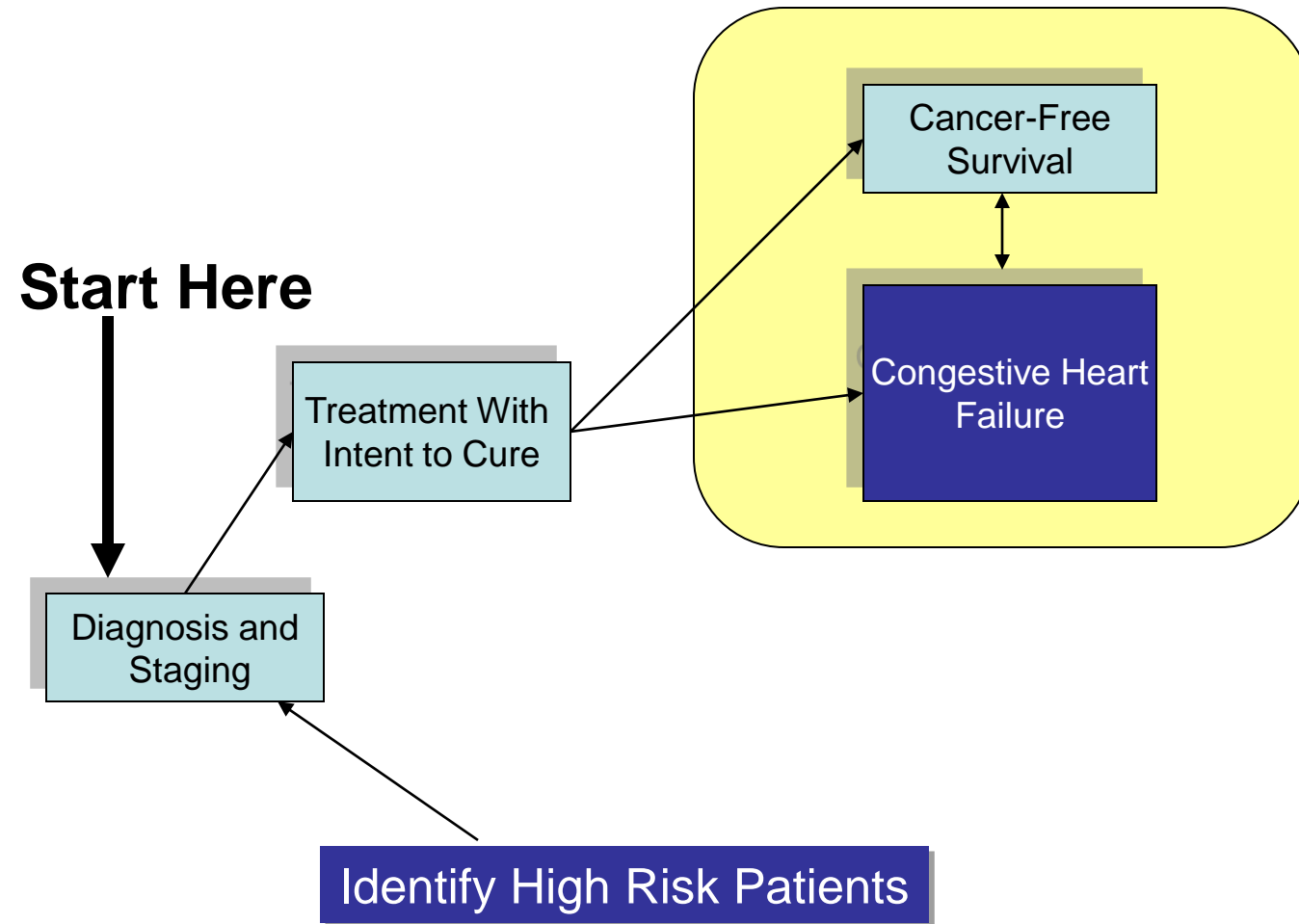
Research Focused on the Late Effects of Cancer Treatment



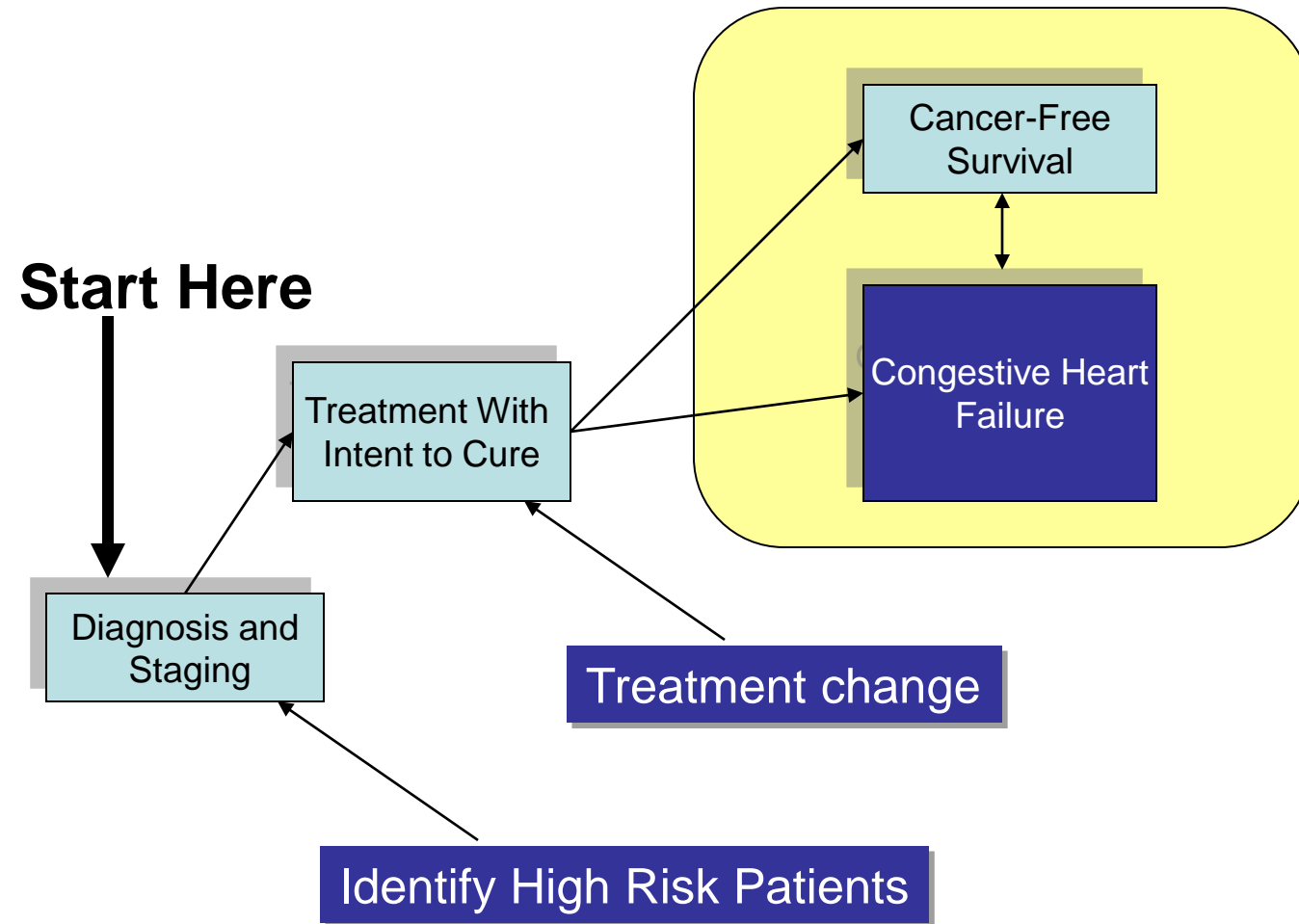
Cancer Care Trajectory



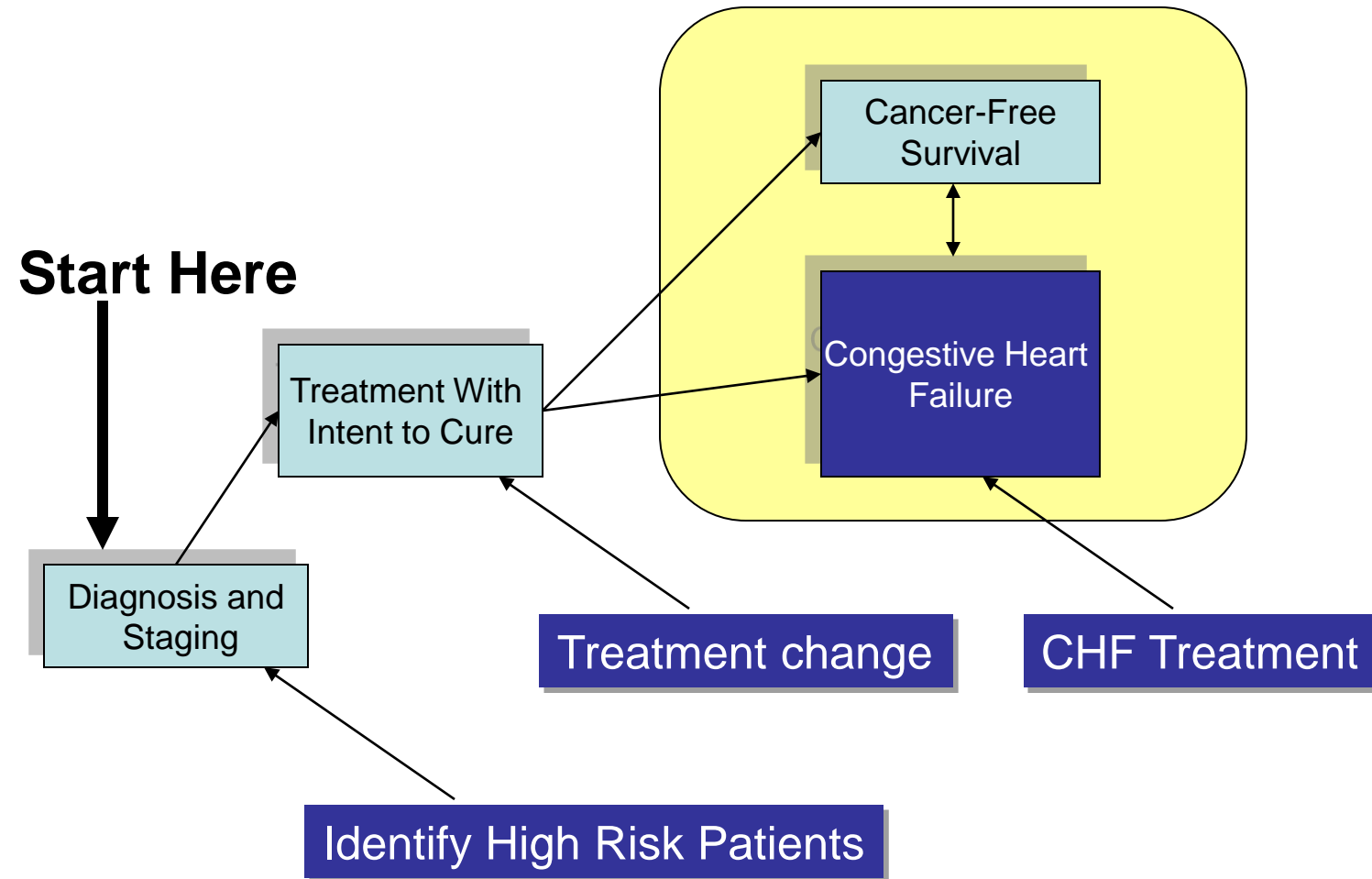
Cancer Care Trajectory



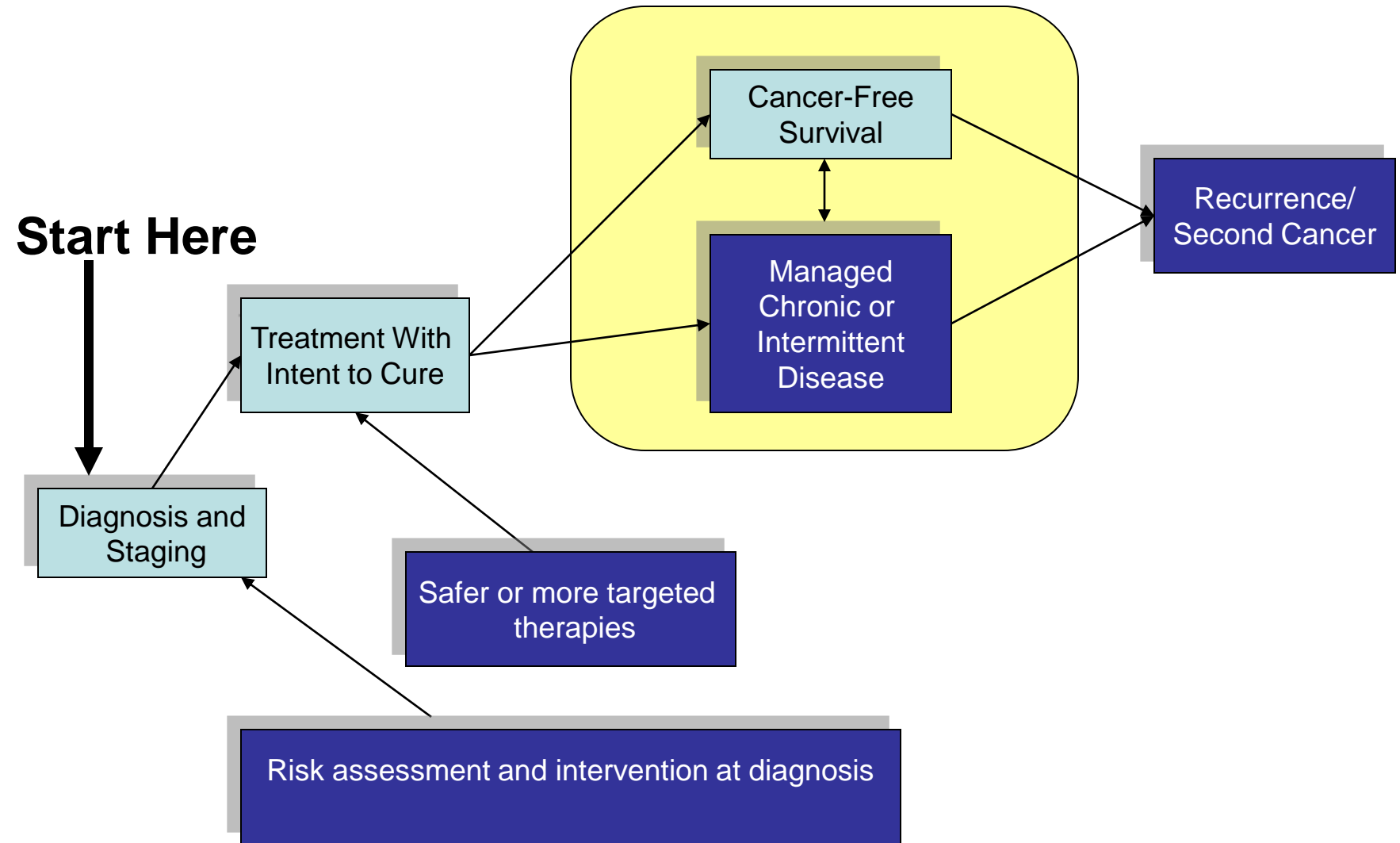
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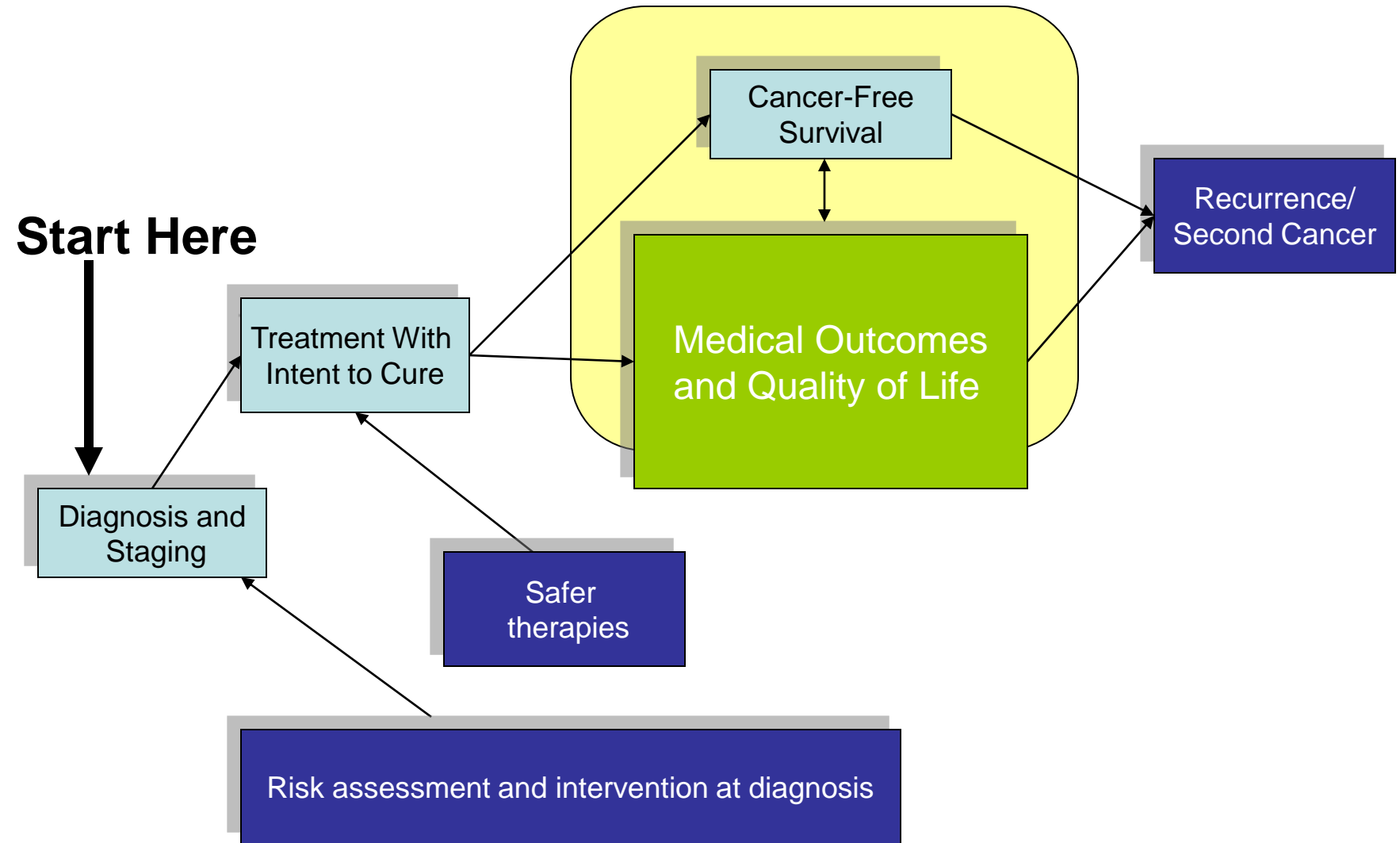
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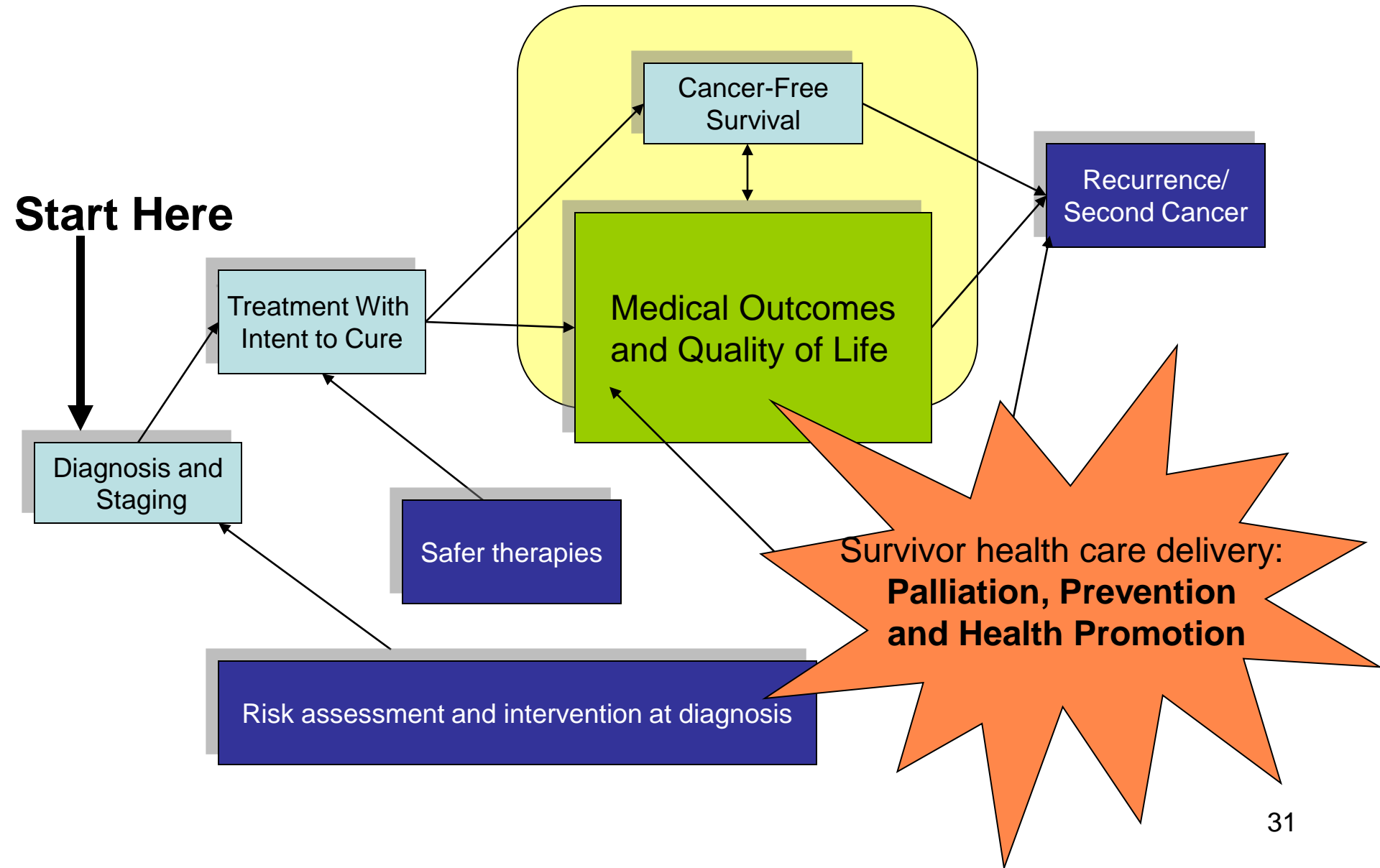
Cancer Care Trajectory



Cancer Care Trajectory



Cancer Care Trajectory



Where to start?

- ✓ What populations do you have access to?
- ✓ What is the setting of care?
- ✓ What existing expertise can be applied to the cancer survivorship research agenda?

Potential Strategies

- Develop transdisciplinary teams focused on common symptoms or chronic conditions
- Engage social and behavioral scientists
- Work closely with researchers who work with the aging population
- Work with your health system and examine new models of care delivery
- Study diseases other than breast cancer!!