

Cancer Survivorship: impacts on cancer care and cancer control

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Objectives of the Presentation

- 1. To review statistics on cancer survivorship.**
- 2. To review the health care concerns of cancer survivors.**
- 3. To review ways to provide health care to cancer survivors.**
- 4. To review public health concerns with respect to cancer survivors.**

Definitions of Survivorship

- **From the time of diagnosis through the remaining years of life.**

*National Action Plan for Cancer Survivorship,
Centers for Disease Control and Lance Armstrong Foundation, USA, 2004*

versus

- **The period following first diagnosis and treatment and prior to the development of a recurrence of cancer or death.**

*From Cancer Patient to Cancer Survivor,
Institute of Medicine, USA, 2006*

The Cancer Control Continuum

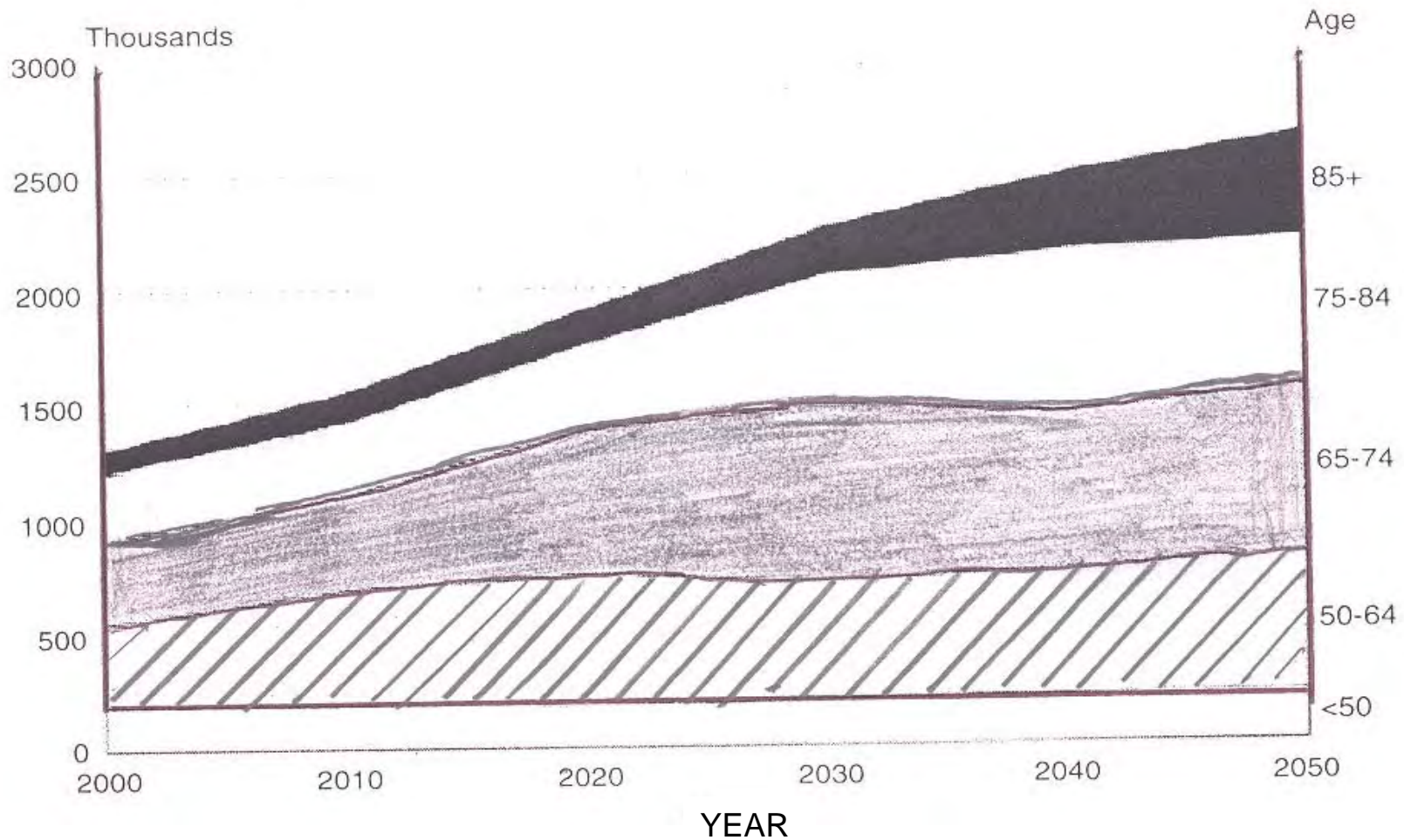


*Adapted from the Canadian Strategy for
Cancer Control, 2005*

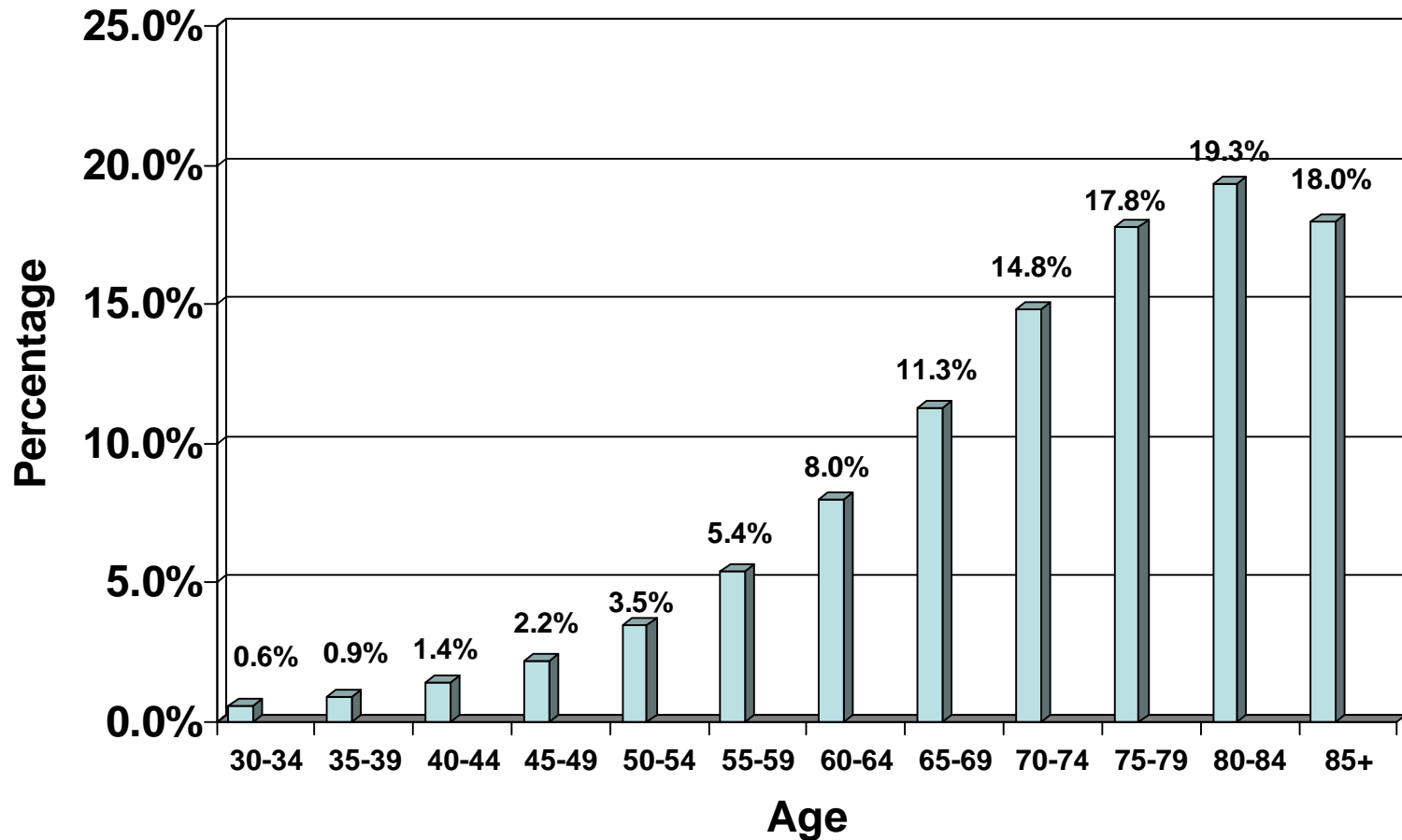
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Projected Number of Cancer Cases for 2000 through 2050



Cancer prevalence by age

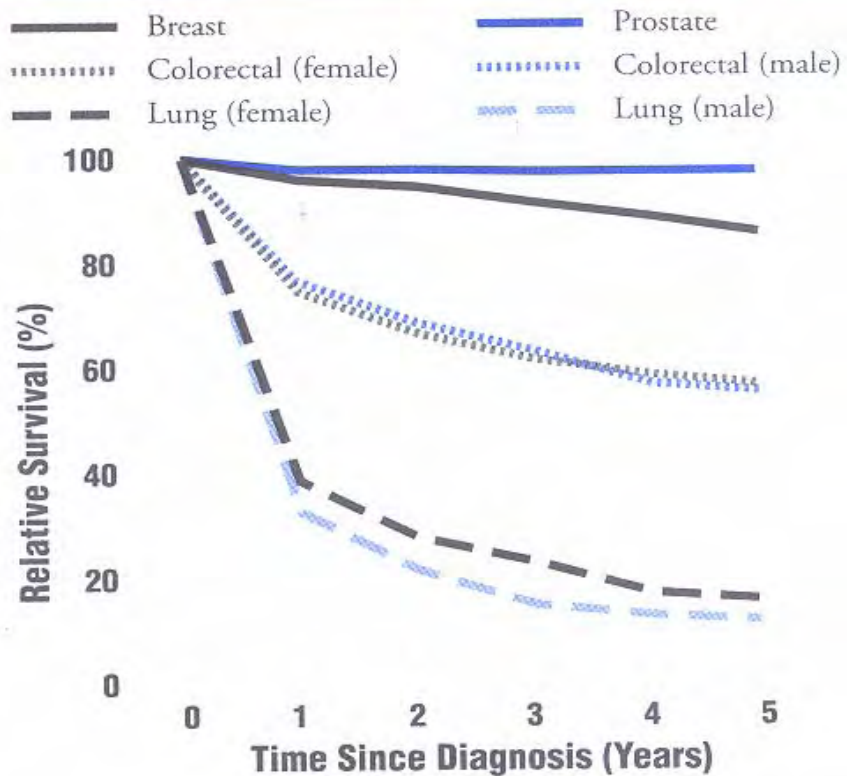


Incidence/year (Nova Scotia)	5-year relative survival
■ Breast - 22,500 (647*)	86%*
■ Colorectal - 20,800 (772*)	56-59%*
■ Prostate - 22,300 (733*)	87%*
■ Lung - 23,300 (803*)	15-17%*

Canadian Cancer Statistics, 2007

**Understanding Cancer in NS. CCNS, 2006.*

Figure 2. Five-year relative survival, invasive common cancers, diagnosed in Nova Scotia 1997-2001.



Prevalence in Canada

	15 Year*	% of Population*	One in*
Breast	162,600	1.0	98
Prostrate	122,400	0.8	128
Colorectal	107,000	0.3	296
Lung	37,600	0.1	842
Other	403,500	1.2	81
All	833,100	2.6	38

* Based on 2001 population

Canadian Cancer Statistics, 2007

Prevalence in Nova Scotia

- **27,712 (1 in 34) living with an invasive cancer diagnosed in previous 15 years**
 - ⇒ **5,411 prostate cancer**
 - ⇒ **5,816 breast cancer**
 - ⇒ **4,082 colorectal cancer**
 - ⇒ **1,475 lung cancer**
- **2/3 of new cases in individuals age 60+**

Managing Success

- **1 in 3 Canadians develop cancer during their lifetime**
 - ⇒ altogether 50% are long-term survivors
 - **breast, colorectal and prostate are most prevalence cancers**
 - ⇒ over 80% are long-term survivors
 - **approximately 3% of the population are cancer survivors**
- ⇒ **challenge for health services to manage the success associated with large and growing prevalence**

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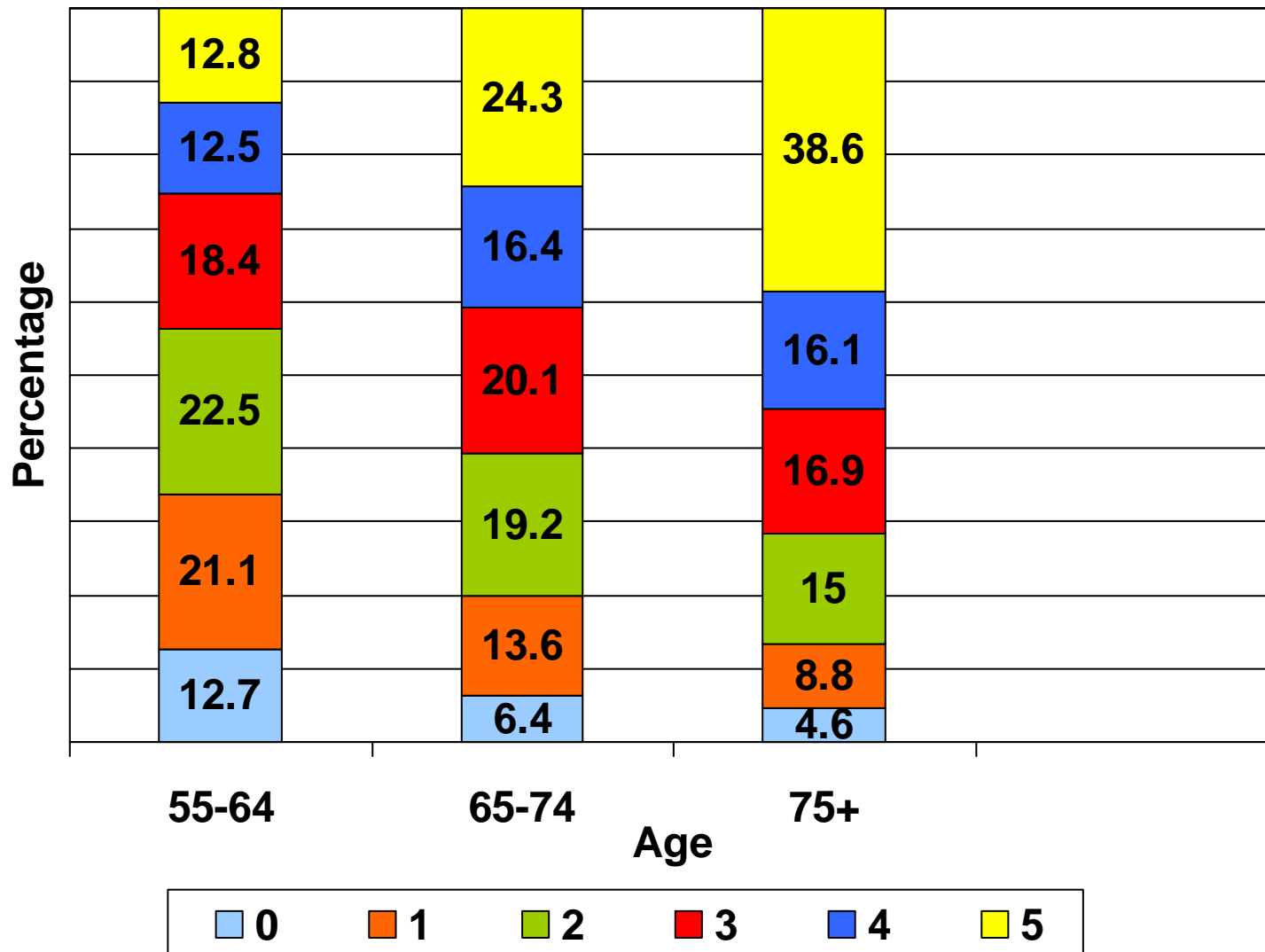
Survivorship Issues

Routine follow-up care

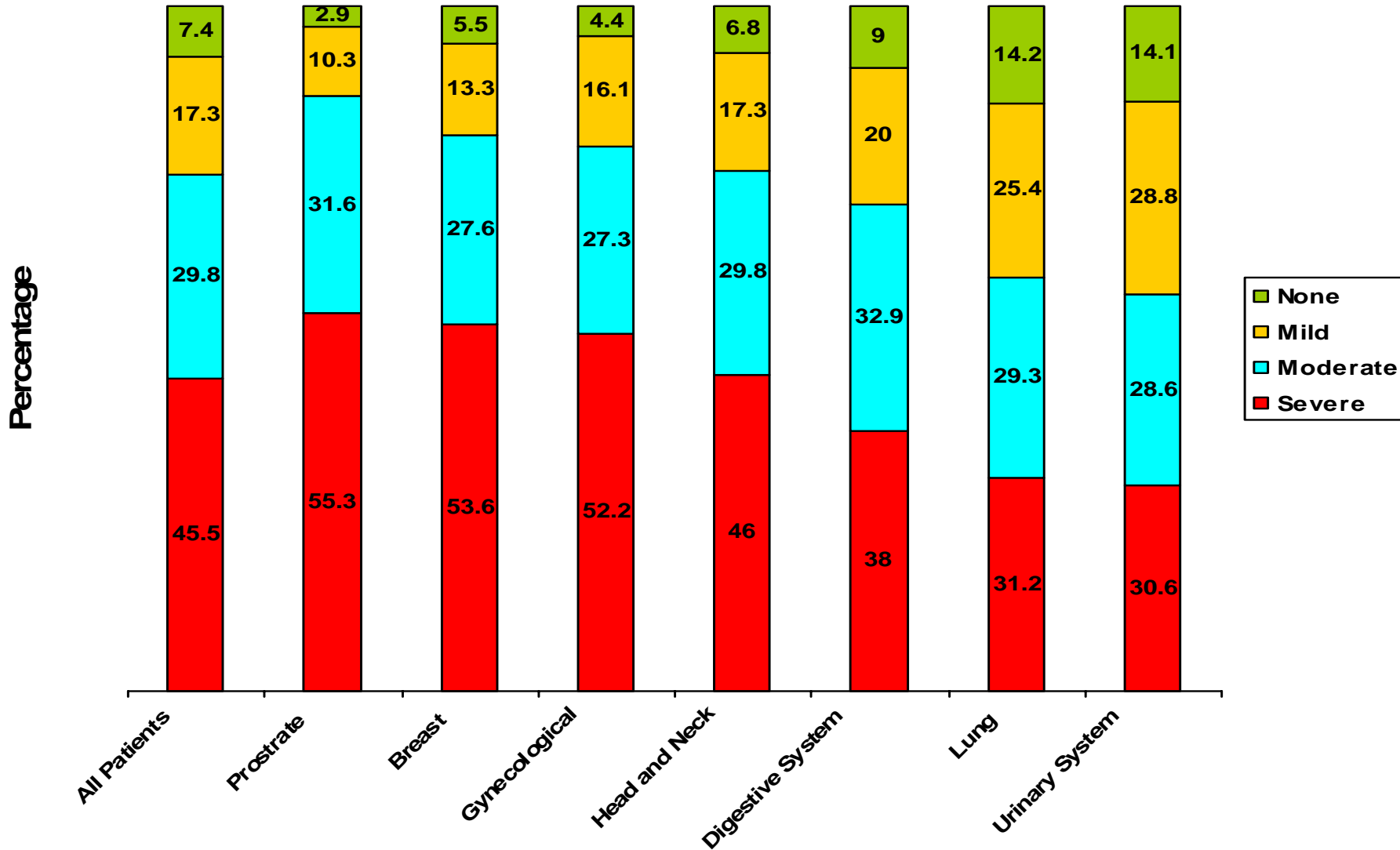
- **Surveillance for recurrence**
- **Surveillance for late effects of treatment**
- **Surveillance for new primary cancer**
- **Psychosocial issues**
- **Special concerns (social/economic/occupational)**

General medical and preventive care

Number of other medical conditions



Severity of other medical conditions



Case : Breast Cancer

You are 48 years old. You have just finished treatment for breast cancer with positive lymph nodes. Your treatment consisted of a lumpectomy, chemotherapy and radiotherapy. Now you are on tamoxifen. You have just finished treatment and you are wondering:

⇒ *Now what?*

- how often do you need to see the doctor?**
- do you need to come back to the cancer centre?**
- what kind of regular tests do you need?**
- what problems should concern you?**

Case: Colon Cancer

You are a 65 year old man. You have just completed treatment for colon cancer that had gone into the lymph nodes. You have had surgery and have just completed chemotherapy. In addition to colon cancer you have diabetes and high blood pressure.

⇒ *Now what?*

- how often do you need to see the doctor?**
- do you need to come back to the cancer centre?**
- what kind of regular tests do you need?**
- what should you problems should concern you?**

Routine Follow-up

- **“Follow-up” refers to the period after completion of primary treatment and before the onset of symptoms, signs or test results indicating recurrence.**
- * **well follow-up; routine follow-up**
- * **screening strategy**

Goals of Routine Follow-up

- **Surveillance for recurrence (local and distant)**
- **Surveillance for late effects of treatment**
- **Surveillance for new primary cancer**
- **Psychosocial support**
- **Special concerns
(social/economic/occupational)**

Breast Cancer: Follow-up Guidelines

Physical examination and medical history:

- All patients should have regular follow-up, visits adjusted to individual patients' needs
 - Years 1, 2, and 3 - every 3-6 months
 - Years 4 and 5 - every 6 months
 - Years 6+ (indefinitely) – annually

Mammograms:

- Annually indefinitely

Routine Laboratory and radiological tests:

- As clinically indicated by signs or symptoms

Pelvic Examination:

- Annually

Clinical Practice Guidelines for Care and Treatment of Breast Cancer. Grunfeld et al, CMAJ 2006

Colon Cancer: Follow-up Guidelines

Ontario	Nova Scotia
<ul style="list-style-type: none"> ▪ History and Physical: <ul style="list-style-type: none"> - every 6m x 3yrs; annual x 5 	<ul style="list-style-type: none"> -Yr 1, 2 every 3 m -Yr 3, 4+5 every 6 m - Yr 6+ annual
<ul style="list-style-type: none"> ▪ CEA <ul style="list-style-type: none"> - each visit 	<ul style="list-style-type: none"> - each visit
<ul style="list-style-type: none"> ▪ blood tests <ul style="list-style-type: none"> - no statement 	<ul style="list-style-type: none"> - no specific statement
<ul style="list-style-type: none"> ▪ chest x-ray, ultrasound, CT Scan <ul style="list-style-type: none"> - can be performed 	<ul style="list-style-type: none"> ▪ chest x-ray, ultrasound, CT scan -- can be performed
<ul style="list-style-type: none"> ▪ Colonoscopy or barium enema <ul style="list-style-type: none"> - 1 then every 3 – 5 yrs - if polyps every year 	<ul style="list-style-type: none"> - 1 then every 3 – 5 yrs - if polyps every year

Breast Cancer: surveillance for recurrence

- **Distant recurrences**
 - ⇒ occur within 5 years
 - ⇒ can occur ≥ 10 years
- **Most frequent sites of recurrence:**
 - ⇒ breast, bone, liver, lungs
- **69% of recurrences are interval events and present with signs or symptoms, not routine tests**

Grunfeld et al, BMJ 1996

Diagnosis of Recurrence

		Interval or symptomatic (%)
■ Tomlin	1987	64
■ Zwaveling	1987	73
■ Rutgers	1989	77 (distant)
■ Ciatto	1985	58
■ Ormistan	1985	78
■ Valagussa	1981	78
■ Stierer	1989	40 (distant)
■ Pandya	1985	54
■ Scanton	1980	73
■ Winchester	1979	91
■ Grunfeld	1997	69*
■ Woster	1995	77*
■ Donnelly	2002	74*
■ te Boekhorst	2001	63

* Identified as interval event

Tomiak Ann Oncol 1993

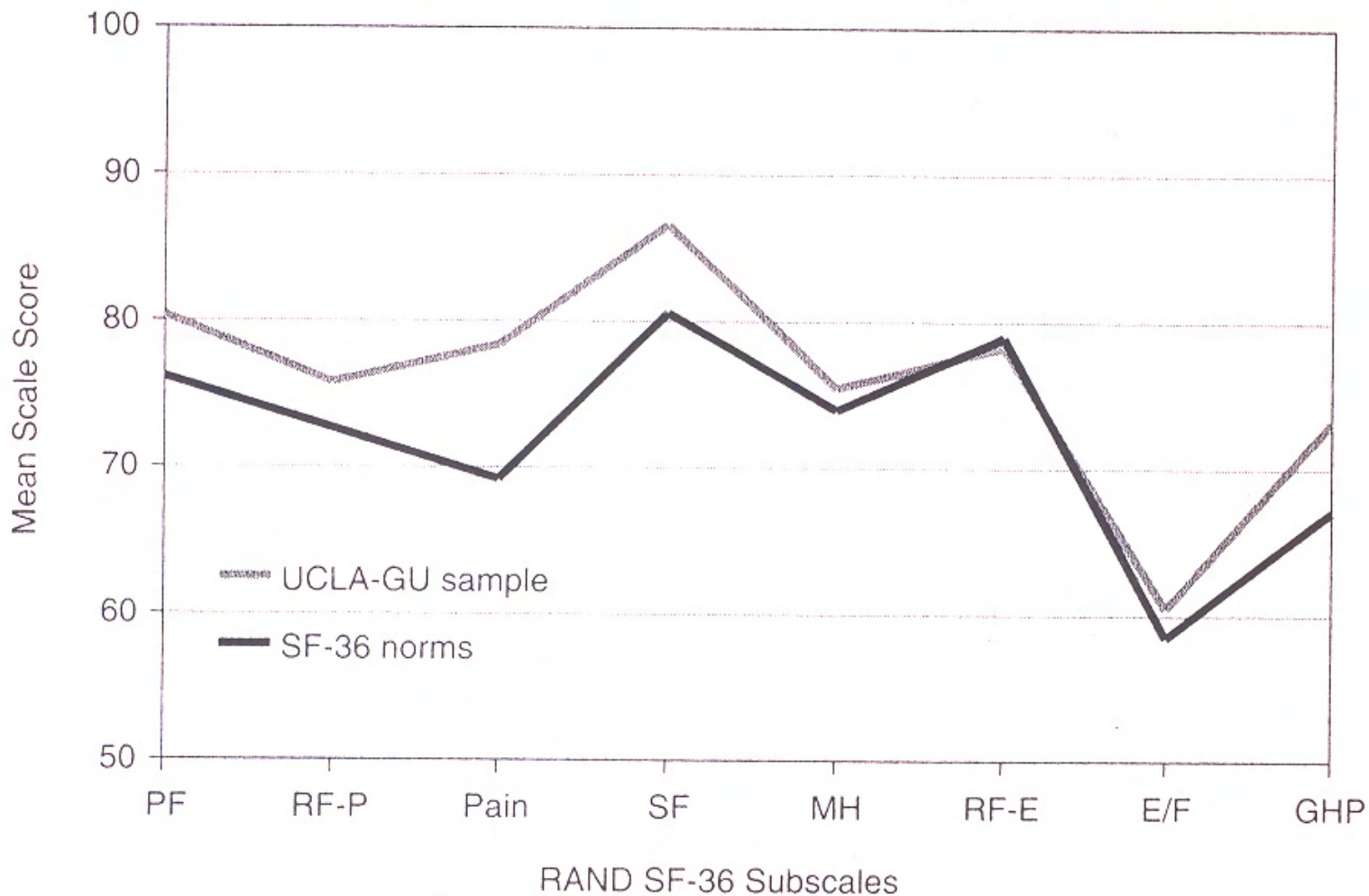
Special Issues

- **Lymphoedema**
- **Menopausal Symptoms**
- **Osteoporosis**
- **Cognitive functioning**
- **Weight control**
- **Psychosocial functioning**

Breast Cancer – Female

All Ages by Stage

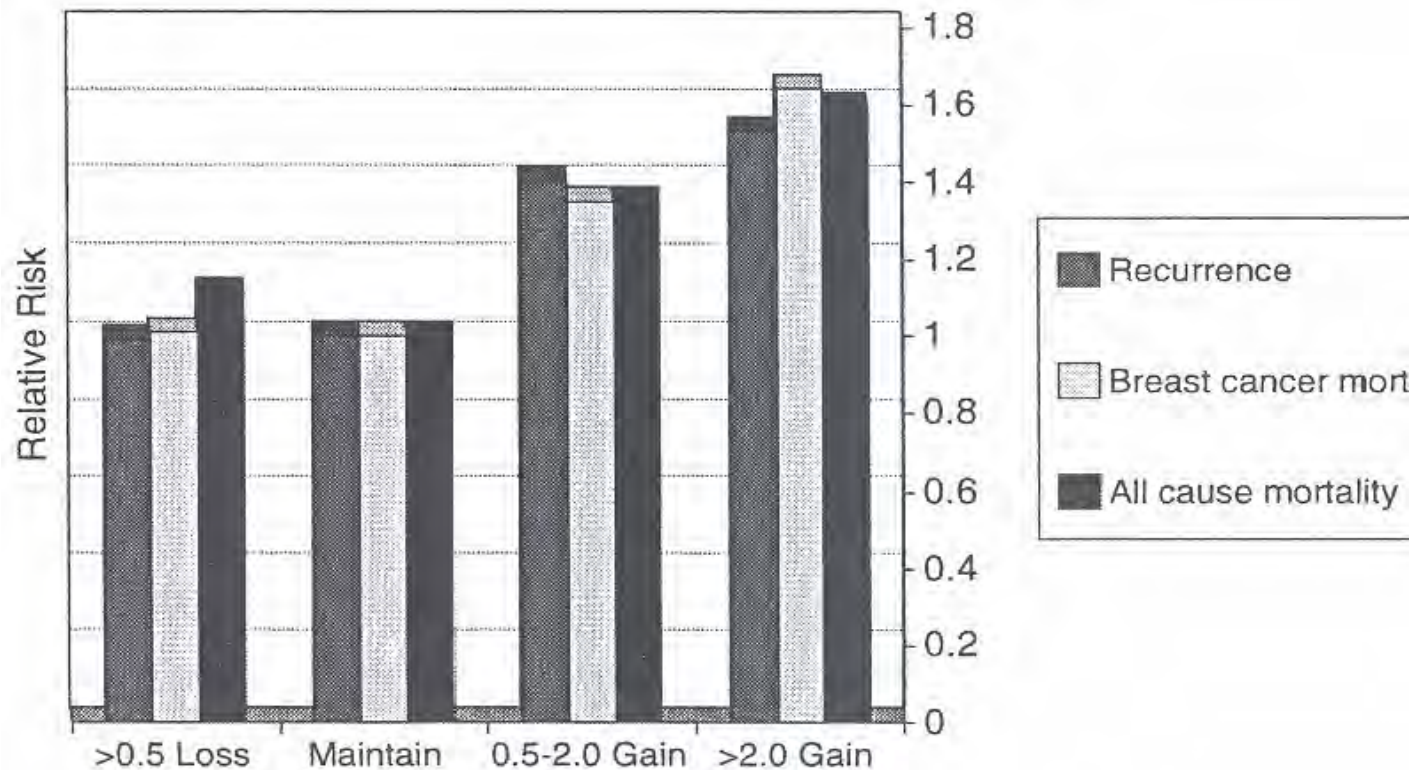
BC Survivors Compared to Healthy Controls



Weight Control

- **Systematic Review (Chlebowski 2002)**
 1. **Obesity at diagnosis and outcomes**
 - 26/34 studies show an association
 2. **Weight gain after diagnosis and outcomes**
 - 3/4 studies show an association
 - **Associated with Chemotherapy**
 - **Not associated with Tamoxifen**

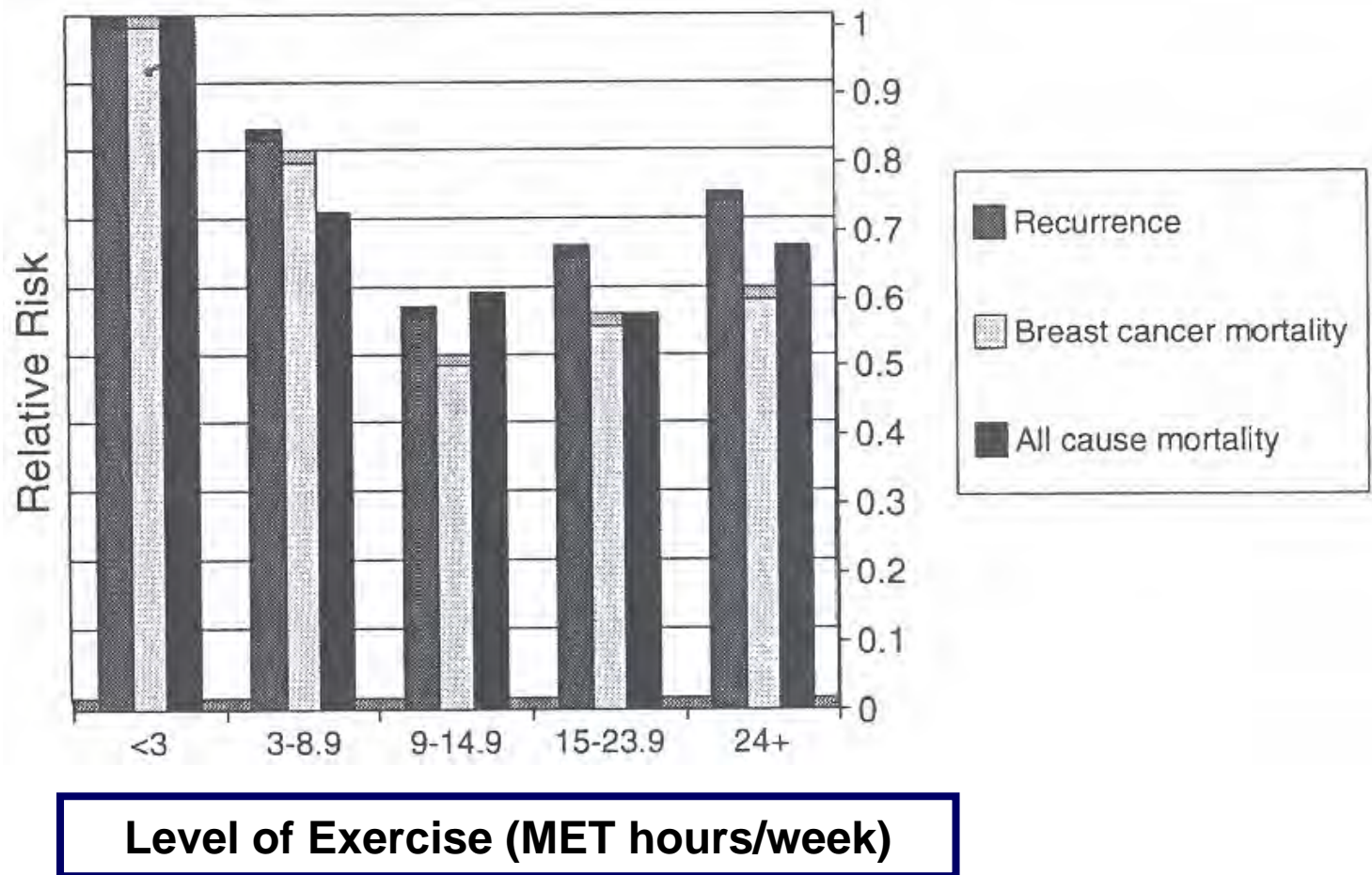
Outcomes related to weight gain in breast cancer survivors



Change in Body Mass Index (BMI)

Adapted from Kroenke et al 2005

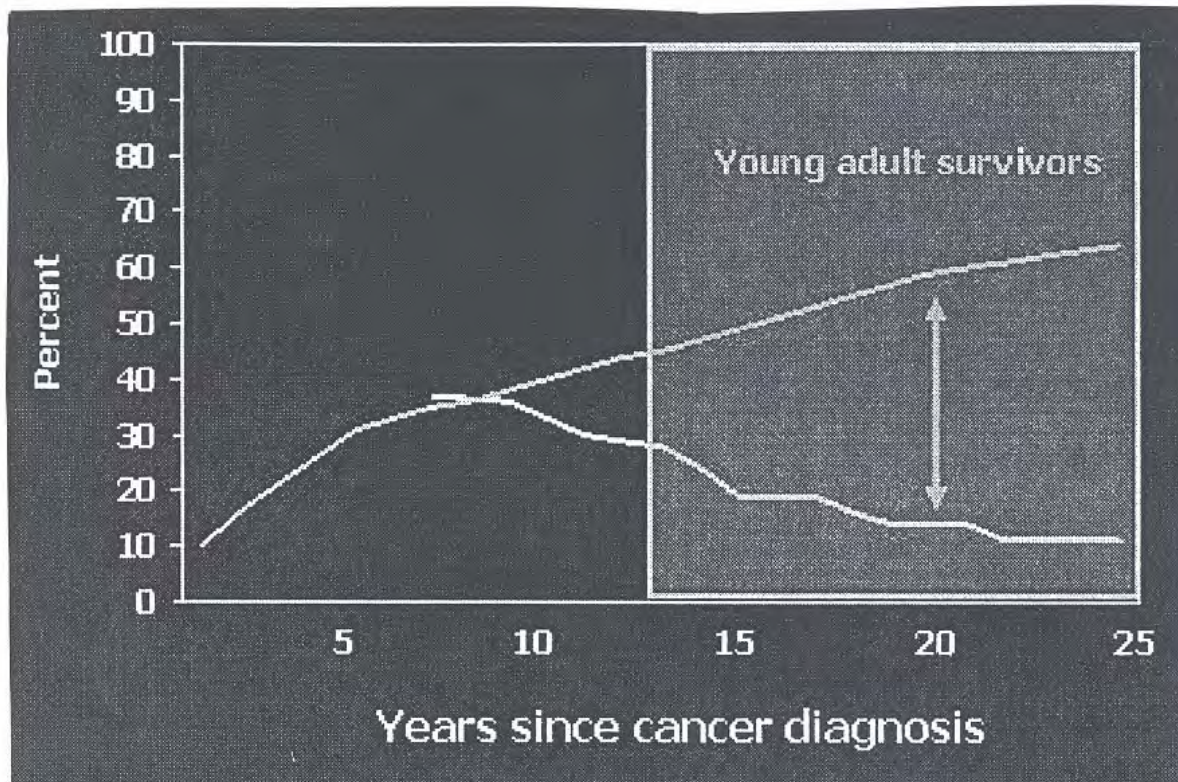
Outcomes related to exercise in breast cancer survivors



General Medical and Preventive Care (example of breast cancer)

- **Management of other medical conditions**
 - ⇒ heart disease, diabetes
- **Early diagnosis of new illnesses**
- **Preventive health care**
 - ⇒ **Screening for other primary cancers**
 - new breast primary, colorectal cancer, ovarian cancer
 - ⇒ **Screening for other chronic diseases**
 - osteoporosis, hypertension, hyperlipedemia

Childhood Cancer: cancer centre visits and late effects



Top line: % of survivors with late effects

Bottom line: % of survivors seen during cancer center visits

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Report on Cancer Survivorship

Institute of Medicine (IOM). *From Cancer Patient to Cancer Survivor*; 2006.

10 recommendations, including:

- 1. Raise awareness of cancer survivorship.**
- 2. Provide patients with a “Survivorship Care Plan”**
- 3. Develop evidence-based clinical practice guidelines**
- 4. Test models of survivorship care**

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Elements of the Care Plan

- **Identifying information (patient and provider)**
- **Cancer treatment summary**
- **Diagnostic tests completed**
- **Risk of recurrence**
- **Signs and symptoms**
- **Recommended surveillance guidelines**
- **Potential late effects**
- **Preventive care recommendations**

Survivorship Care Plan

Mary Jones

Address, phone, e-mail

DOB: 2.4.56

Diagnosis:

- **left breast cancer (date)**

Stage (link to staging info)

- **Tumor 1.5 cm, 4 of 10 nodes positive**
- **ER+, PR+, HER-2 neg.**

Prior Treatment:

- **Left mastectomy (date)**
- **Radiation (date)**
- **Chemo (type and date)**

Current Treatment:

- **Letrozole 2.5 mg daily x 5 yrs (start date:_____)**

Plan of care (link). Fill out for patient and print

Follow-up visits (link)

Educational resources (link)

Katcheressian, Massey Cancer Center

What your Dr. needs to do?

Assess for signs of recurrence: work-up suspicious complaints

- 1. Make sure a yearly mammogram is obtained**
- 2. Yearly PAP smear if on tamoxifen**
- 3. Do not get routine labs or imaging studies ([link to guidelines](#))**
- 4. Fill out the [Plan of Care sheet](#) and print a copy for the patient**
- 5. Address “other issues” in [Plan of Care](#)**
- 6. Send all [providers \(link\)](#) a copy of your note**

Katcheressian, Massey Cancer Center

Educational Resources

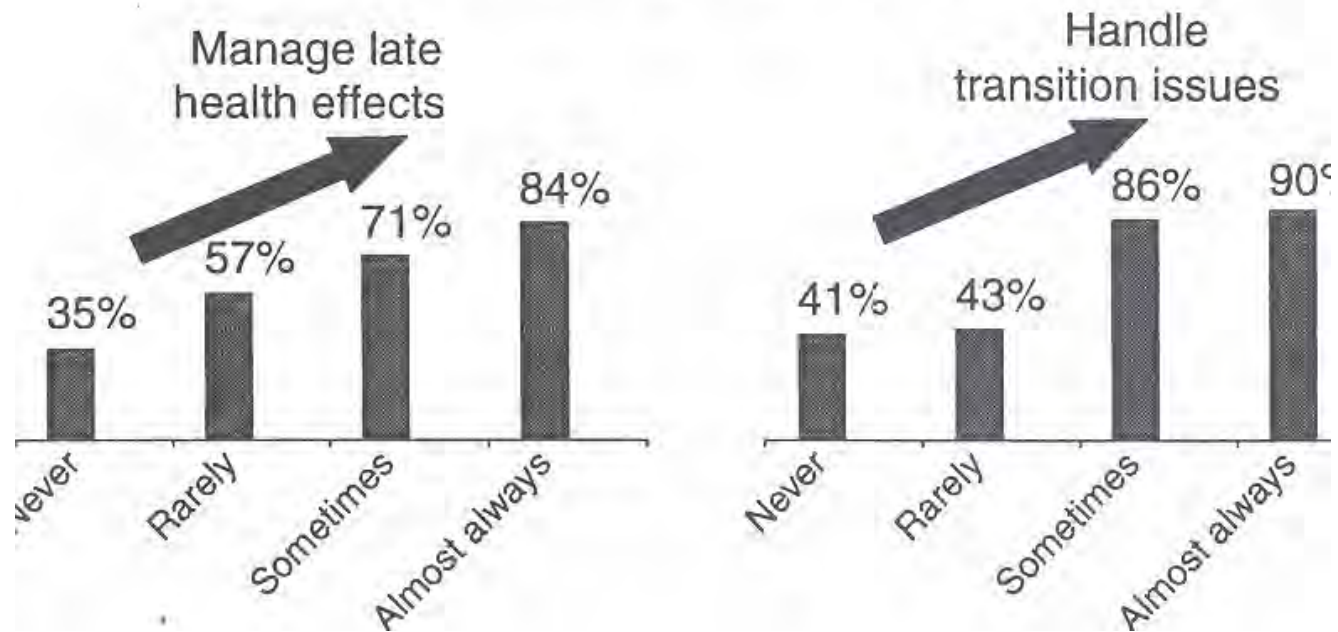
Recommended breast cancer surveillance guidelines ([Link](#))

Testing that is not recommended ([link to guidelines](#))

- **Routine [labs](#)**
- **Routine [tumor markers](#)**
- **Routine [imaging](#)**

PCP confidence and receipt of end-of-treatment summaries

% of physicians reporting they are prepared to . . .



Frequency PCP receives an end-of-treatment summary

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Guidelines on Follow-up Care

- **National guideline discuss follow-up care for breast cancer and special topics of concern to breast cancer survivors.**
 - ⇒ *Grunfeld et al. Clinical Practice Guidelines for Care and Treatment of Breast Cancer, Canadian Medical Association Journal 2005*
- **Provincial guidelines discuss follow-up care for specific cancers**
 - ⇒ *Cancer Care Nova Scotia*
 - ⇒ *Cancer Care Ontario*
 - ⇒ *BC Cancer Agency*

Recommended Follow-up Care (example of breast cancer)

Physical examination and medical history:

- **Years 1, 2, and 3 - every 3-6 months**
- **Years 4 and 5 - every 6 months**
- **Years 6+ (indefinitely) - annually**

Mammograms:

- **Annually indefinitely**

Routine Laboratory and radiological tests:

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Recommended Models of Follow-up Care to be Tested

IOM recommendation:

Test models of coordinated, inter-disciplinary survivorship care in diverse communities and across systems of care:

- 1. shared-care model (specialists and PCPs)**
- 2. nurse-led model**
- 3. specialized survivorship clinics**

Randomized Controlled Trials to Evaluate Follow-up Regimens

- **Intensive vs minimalist regimens**
 - ⇒ no difference in 5 year overall mortality (del Turco JAMA 1994)
- **Intensive vs minimalist regimens**
 - ⇒ no difference in overall mortality or HRQOL (GIVIO JAMA 1994)
- **Specialist vs FP regimens**
 - ⇒ no delay in detection of recurrence or HRQOL (Grunfeld BMJ 1996)
- **Specialist vs FP regimens**
 - ⇒ no difference in serious clinical events or HRQOL (Grunfeld JCO 2006)
- **Evaluation of Survivorship Care Plan**
 - ⇒ (Grunfeld – study ongoing)

Role of Family Physician

Concern about the ‘separation’ of cancer patients from the FP

Research:

- **60% of patients would contact FP if problems**
- **63% of patients presented to FP with symptoms**
- **53% of FPs have been involved**
- **90% of FPs would accept responsibility for f/u**
⇒ **important ‘informal’ role**

Overall objective of the research program

To determine whether family physician (FP) based routine follow-up of women with breast cancer is an acceptable alternative to the existing system of specialist based follow-up.

Testing a Primary Care Model of Breast Cancer Follow-up Care

STUDY	YEARS	METHODS	SUBJECTS
Phase I	1991-1992	Focus Groups	Patients (England)
	1992-1993	Focus Groups	Patients (England)
	1992-1993	Survey	PCPs (England)
	1992-1993	Survey	Specialists (England)
Phase II	1993-1994	RCT (n=296)	English Patients
Phase III	1997-2003	RCT (n=968)	Canadian Patients
Phase IV	2007 +	RCT (n=400)	Canadian Patients

Patient Interview Study

- **109/145 = 78% response rate**
- **Qualitative analysis**
- **Patients in specialists care**
- **3 Themes identified**
 - ⇒ **Continuity of care**
 - ⇒ **Access to specialist care when needed**
 - ⇒ **Quality of the Consultation**

Adewuyi-Dalton et al, Psycho-Onc 1998

Results – Phase II

Randomized Trial (18 months follow-up)	Trial Group		Difference (95%CI)
	FP n = 148	Specialist n = 141	
Time to diagnosis of recurrence (days)	22 days	21 days	1.5 (-13 to 22)
Total time with the patient (min)	35.6	20.7	14.9* (11.3 to 18.4)
Cost per patient (£s)	65	195	- 130 * (-149 to -112)
Time cost to the patient (min)	53	82	- 29 * (-37 to -23)

- No difference in health-related quality of life over time
- No difference in anxiety or depression over time
- PCP patients more satisfied

■ *p<0.001

Grunfeld et al BMJ 1996

Patients

- Early stage breast cancer
- Completed adjuvant therapy (continued Tamoxifen)
- Disease free
- 9-15 months post-diagnosis

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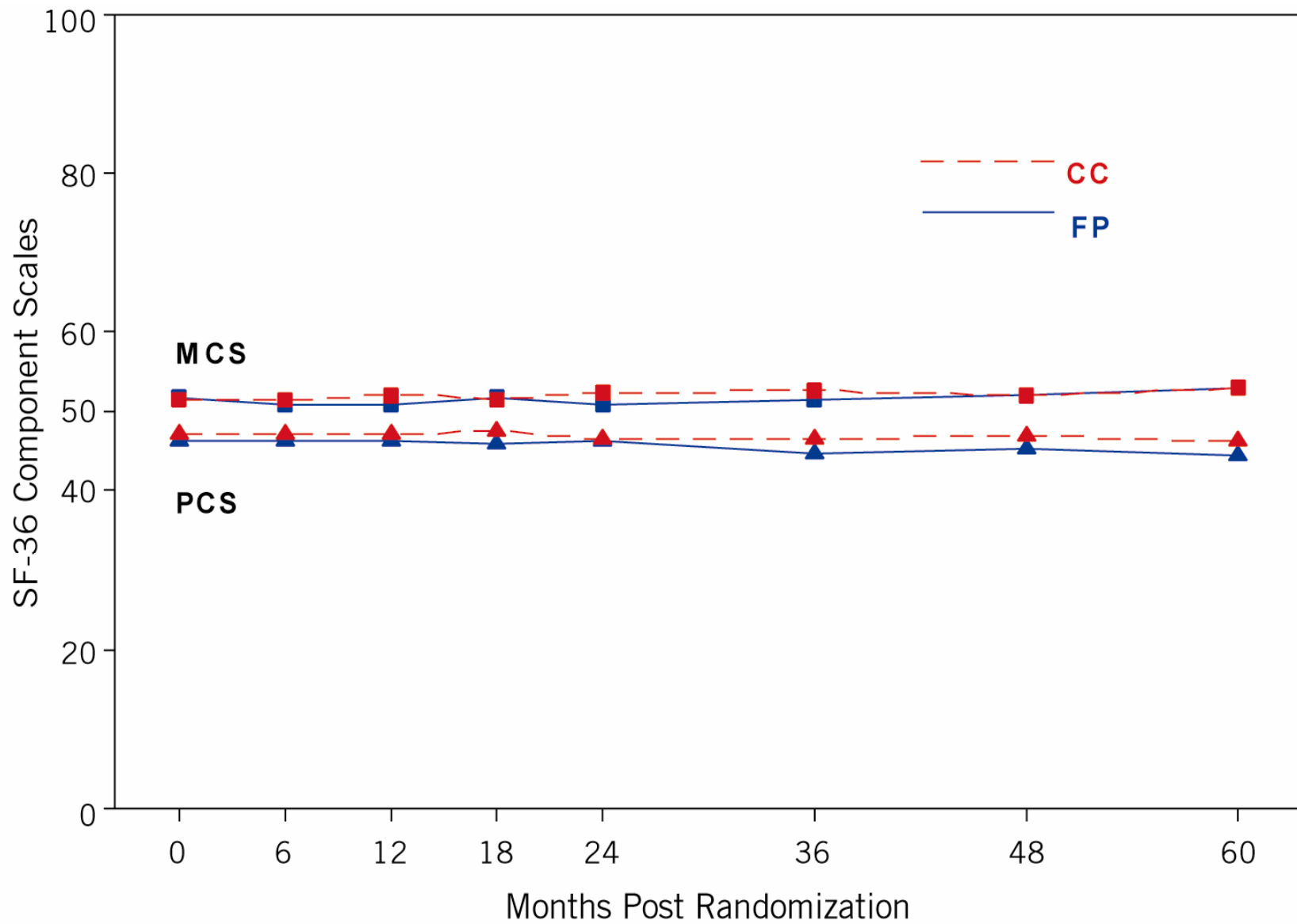
FP Group

- Follow-up by patient's FP
- Guideline (1 page)
- Refer back to CC if recurrence or new cancer

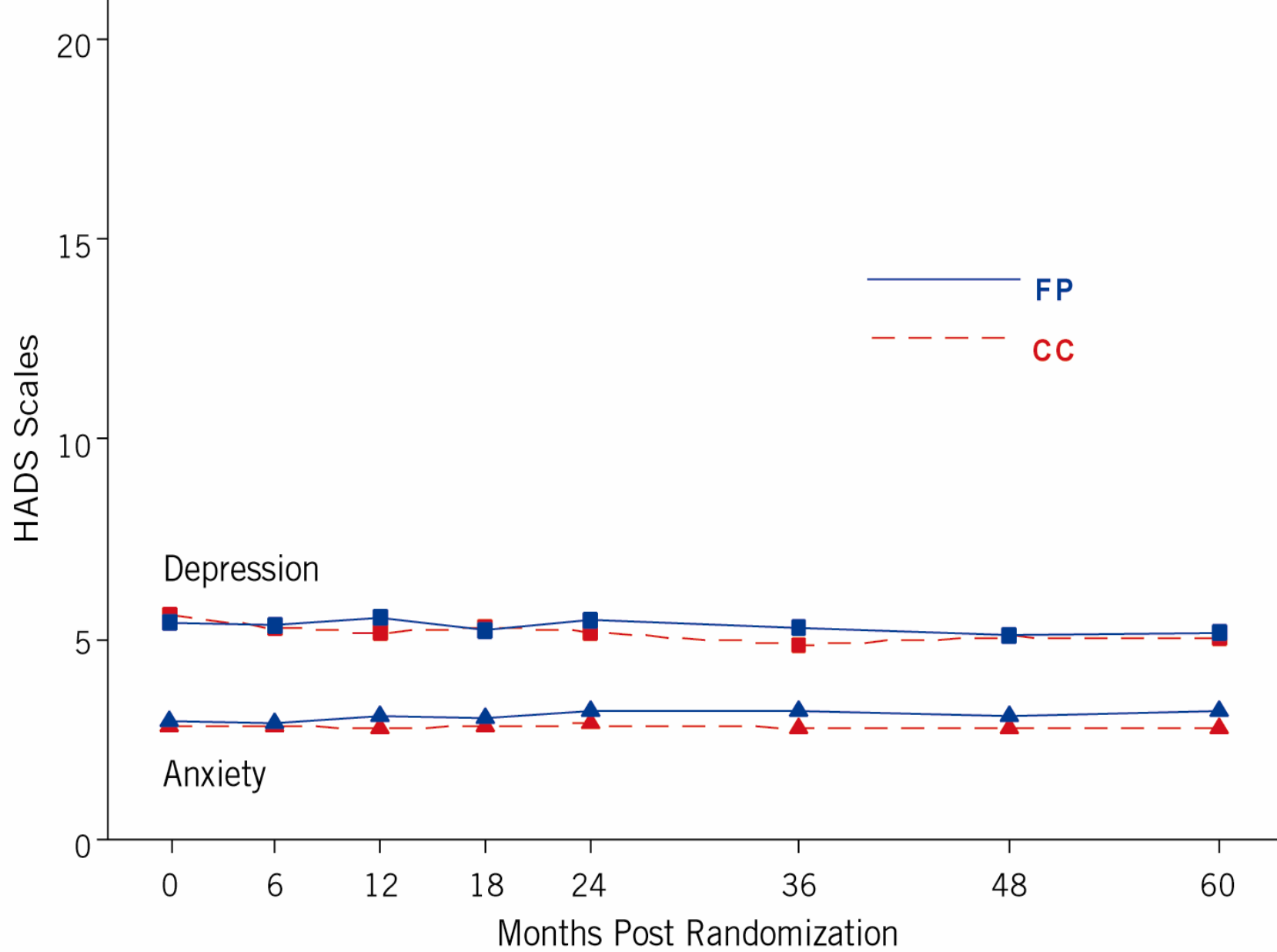
CC Group

- Follow-up at cancer center
- Usual practice

Outcome Event	Family Physician (FP) Group (n=483)	Cancer Centre (CC) Group (n=485)	Risk Difference CC – FP (95% CI)
Number of Patients (%)			
Recurrence	54 (11.2%)	64 (13.2%)	2.02% (-2.13, 6.16)
Distant^a	36	38	
Local^a	10	12	
Contralateral^a	11	15	
Death (All Causes)	29 (6.0%)	30 (6.2%)	0.18% (-2.90, 3.26)
Serious Clinical Events	17 (3.5%)	18 (3.7%)	0.19% (-2.26, 2.65)
Spinal Cord compression^b	0	1	
Pathological fracture^b	3	8	
Uncontrolled local recurrence^b	2	0	
KPS ≤ 70^b	14	18	
KPS ≤ 70^b	0	0	
Brachial plexopathy^b	2	2	
Hypercalcemia^b			

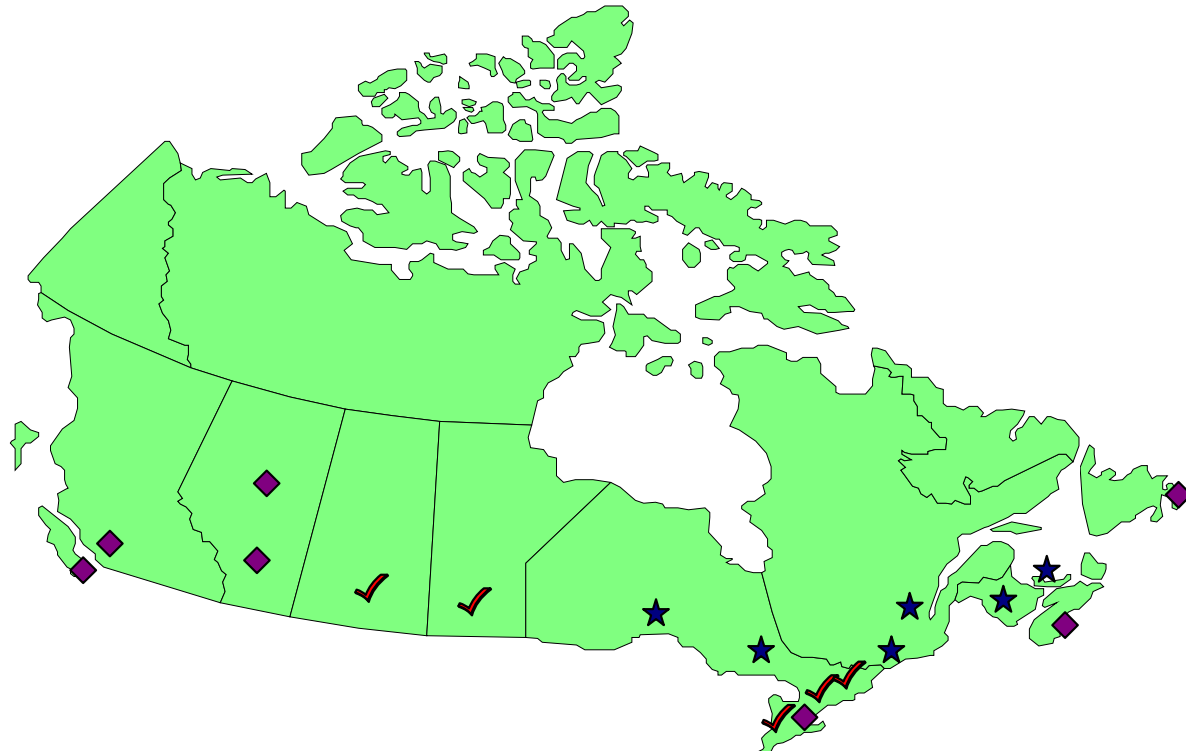


Number of Responses	CC:	468	438	425	394	384	292	187	101
	FP:	467	427	415	390	369	275	184	104



Number of	FP:	472	438	418	394	372	278	189	107
Responses	CC:	478	443	430	405	394	300	193	108

Current Follow-Up Practices at Selected Cancer Centres in Canada



★ Longterm in cancer centre

◆ Transfer of Care to FP

✓ Variable

Phase IV: Implementation Study

- **Overall Objective:**

- ⇒ To determine if a patient-centred intervention for breast cancer survivors who are medically ready for transition from specialist care to primary care improves patient and health service outcomes

- **Design:**

- ⇒ Multicentre randomized controlled trial

Phase IV: Implementation Study

■ Patients:

⇒ **200 < 24 months post diagnosis**

⇒ **200 ≥ 24 months post diagnosis**

■ Intervention:

⇒ **Guideline for family physician**

⇒ **Guideline for patient**

⇒ **Educational session for patient (30 minutes)**

⇒ **Survivorship care plan for patient**

➤ **including plan for initiating aromatase inhibitor, according to oncologist's recommendation**

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Survivorship from Cancer Control Perspective

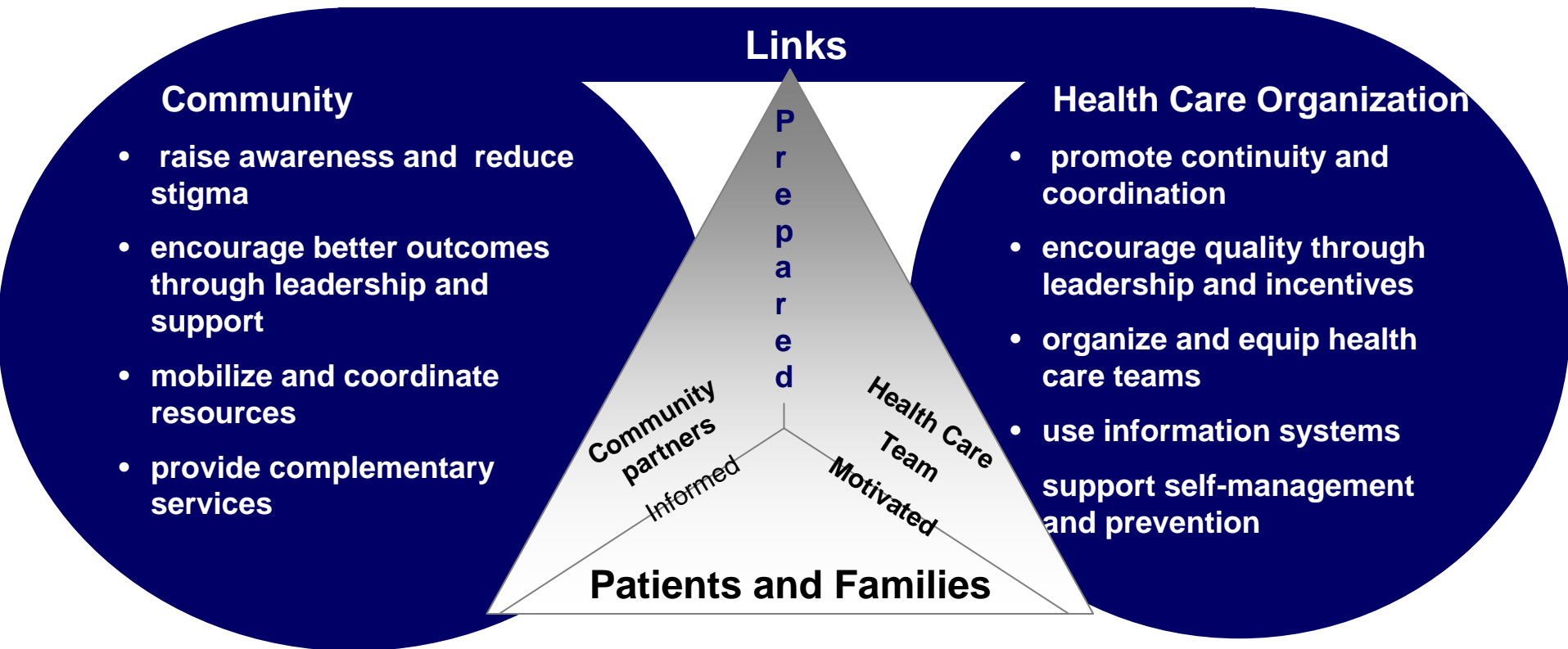
Potential strategies

- 1. Health care policies**
 - **targets the individual**
- 2. Social policies**
- 3. Public health policies**
 - **targets the population**

Relationship between cancer care and cancer control

PUBLIC HEALTH POLICY

- Partnerships
- Legislative frameworks
- Integrate Policies
- Leadership & Advocacy
- Consistent Financing
- Human Resources



Adopted from Epping-Jordan, 2004

Canadian Partnership Against Cancer and cancer survivorship

- **Seven priority areas identified:**
 - 1. Primary prevention**
 - 2. Rebalancing the focus**
 - 3. Surveillance**
 - 4. Standards**
 - 5. Clinical practice guidelines**
 - 6. Human resources**
 - 7. Research**

Canadian Partnership Against Cancer and cancer survivorship

- **Surveillance Action Group**

“Cancer surveillance activities must cover the **complete spectrum** from prevention to palliative care.”

- **Rebalancing Focus Action Group**

⇒ “... directed at integrating supportive care, psychosocial care, **rehabilitative care** and palliative care into the cancer care system.”

Conclusions

- Growing prevalence of cancer survivors
- Change in perspective from acute life threatening disease to chronic disease
- From the cancer care perspective
 - ⇒ **cancer follow-up care is the principal focus**
- From the cancer control perspective
 - ⇒ **CPAC considers survivorship obliquely**
- Increased activity suggests growing awareness and interest in cancer survivorship

Survivorship Resources

- **From Cancer Patient to Cancer Survivor. Hewitt 2006.**
- **Picking Up The Pieces: Moving Forward After Surviving Cancer. Magee and Scalzo; 2006.**
- **American Cancer Society – Cancer Survivors Network Newsletter. www.cancer.org**
- **CancerCare. www.cancercare.org**
- **Lance Armstrong Foundation. www.livestrong.org**
- **People Living With Cancer. www.plwc.org**
- **National Coalition for Cancer Survivorship (NCCS). www.canceradvocacy.org**

Survivorship Resources - Books

- **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; 2006.**
- **Picking Up The Pieces: Moving Forward After Surviving Cancer; Sherri Magee and Kathy Scalzo; 2006.**

Survivorship Resources - Websites

- **American Cancer Society – Cancer Survivors Network Newsletter:** You can register to receive a monthly electronic newsletter that includes interesting articles and updates of interest to Cancer Survivors. www.cancer.org
- **CancerCare:** A national nonprofit organization that provides free, professional support services for anyone affected by cancer. They also host online Support Groups and telephone education sessions that Canadians can participate in free of charge. www.cancercare.org

Survivorship Resources - Websites

- **Lance Armstrong Foundation (LAF):** A nonprofit organization whose mission is to inspire and empower people with cancer to live strong. They realize their mission through education, advocacy, public health and research programs. www.livestrong.org
- **National Coalition for Cancer Survivorship (NCCS):** A nonprofit national advocacy organization. NCCS is a nationwide network of independent organizations and individuals working in the areas of cancer support. The award-winning *Cancer Survival Toolbox* is one of their many resources. www.canceradvocacy.org

Survivorship Resources - Websites

- **People Living With Cancer:** The patient information website of the American Society of Clinical Oncology (ASCO) is designed to help patients and families make informed health care decisions. This site also includes information on opportunities to participate in live chats with cancer experts and dialogue with other patients.

www.plwc.org