Follow-up after treatment for breast cancer

Practical guide to survivorship care for family physicians

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Abstract

Objective To offer FPs a summary of evidence-based recommendations to guide their follow-up survivorship care of women treated for breast cancer.

Quality of evidence A literature search was conducted in MEDLINE from 2000 to 2016 using the search words *breast cancer, survivorship, follow-up care, aftercare, guidelines,* and *survivorship care plans,* with a focus on review of recent guidelines published by national cancer organizations. Evidence ranges from level I to level III.

Main message Survivorship care involves 4 main tasks: surveillance and screening, management of long-term effects, health promotion, and care coordination. Surveillance for recurrence involves only annual mammography, and screening for other cancers should be done according to population guidelines. Management of the long-term effects of cancer and its treatment addresses common issues of pain, fatigue, lymphedema, distress, and medication side effects, as well as longer-term concerns for cardiac and bone health. Health promotion emphasizes the benefits of active lifestyle change in cancer survivors, with an emphasis on physical activity. Survivorship care is enhanced by the involvement of various health professionals and services, and FPs play an important role in care coordination.

Conclusion Family physicians are increasingly the main providers of follow-up care after breast cancer treatment. Breast cancer should be viewed as a chronic medical condition even in women who remain disease free, and patients benefit from the approach afforded other chronic conditions in primary care.

EDITOR'S KEY POINTS

- Increasing numbers of women are surviving breast cancer, which has led to a strong shift to primary care for follow-up. This article offers FPs a relevant summary of evidence-based survivorship care recommendations for women treated for cure of breast cancer.
- The chronic phase of cancer focuses on supporting breast cancer survivors as they recover from the considerable physical, psychological, and social effects of the cancer experience. Cancer follow-up care will benefit from the same organized, evidence- and team-based approach that is afforded other chronic conditions in primary care.
- A 4-component model that includes surveillance and screening, assessment and management of physical and psychosocial effects, health promotion, and care coordination provides FPs with a useful framework to approach this important work.

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Breast cancer care in Canada is changing and with it the role of FPs in caring for those affected. About 1 in 107 Canadian women are living with a diagnosis of breast cancer made in the past decade.[1] About 93% are diagnosed with stage I to III cancer[2] and are treated for cure, most commonly with the sequence of surgery, postoperative chemotherapy, radiation therapy, and oral antiestrogen medications. Increasing numbers of women are surviving breast cancer, with survival rates of 88% at 5 years and 82% at 10 years relative to their peers.[1] This trend has been accompanied by a strong shift to primary care for the provision of follow-up care, driven by level I evidence of the effectiveness of FP follow-up,[3-5] FPs' willingness to take on this role,[6,7] and the need for cancer centres to focus scarce cancer specialist resources on those who are newly diagnosed, those who have complex toxicities of treatment, or those who have metastatic disease. In a recent survey, two-thirds of breast cancer survivors (BCSs) in early follow-up named an FP or nurse practitioner as one of the main providers of their follow-up care, and the most common arrangement was the FP acting as the sole medical provider of follow-up.[8]

Cancer follow-up is a good fit for primary care. Increasingly, cancer is viewed as a condition with acute and chronic phases.

The management of the chronic survivorship phase of cancer has much in common with that of other chronic diseases. The traditional focus of monitoring for cancer recurrence has broadened to a concern for wellness and recovery that includes management of psychosocial and physical effects, promotion of healthy lifestyles, and care coordination of the various health professionals involved.

Family physicians face challenges in this work and are able to routinely implement only about half of the key care recommendations for BCSs in their practices.[9] However, both overtesting and undertesting are concerns. Only about two-thirds of BCSs receive the recommended surveillance mammogram in a given year of follow-up, while half appear to have routine imaging for metastatic disease in a given year that is not recommended.[10] Family physicians place a high value on guidelines to help guide their work in cancer survivorship.[6] This article offers FPs a relevant summary of evidence-based survivorship care recommendations for women treated for cure of breast cancer.

Quality of evidence

A literature search was conducted in MEDLINE from 2000 to 2016 using the search words *breast cancer, survivorship, follow-up care, aftercare, guidelines,* and *survivorship care plans*. Guidelines published by national cancer-related organizations were also reviewed. A supplemental search of references from selected articles and reference lists of guidelines was also performed. Articles were rated in an evidence hierarchy: studies and recommendations backed by 1 or more randomized controlled trials (RCTs) or systematic reviews or meta-analysis of RCTs were rated as level I; well-designed observational and interventional studies without randomization were rated as level II; and level III evidence included recommendations based on expert opinion or influential reports and studies.

Main message

Four broad tasks of survivorship care have been described,[11] and practice tools have been recently published that provide a helpful framework.[12,13] As always, FPs must customize guidelines to meet the unique needs and characteristics of each survivor, her treatment history, and the complexity of care created by her other chronic conditions.

Task 1: surveillance and screening (Table 1[14-18]). One of the most common concerns cancer survivors have is the fear of cancer recurrence.[19] The FP must respond with a careful inquiry and examination for common signs and symptoms of local and distant recurrence. It is also true, however, that no well designed studies have evaluated the benefits of more versus less frequent clinic visits and that about 60% of locoregional recurrences (in the treated breast and ipsilateral axillary and supraclavicular lymph nodes) are symptomatic and present outside of scheduled follow-up visits.[20] Breast cancer follow-up testing is straightforward. Yearly bilateral mammography (after lumpectomy) or of the remaining contralateral breast (after mastectomy) is the only test that is recommended, and even that recommendation lacks level I evidence of benefit. Magnetic resonance imaging is not recommended (level I evidence).[14,16,17] Level III evidence supports regular clinical breast examination[14] and monthly breast self-examination in asymptomatic BCSs.[14] A Cochrane review[21] has shown that the aggressive pursuit of asymptomatic metastatic disease with blood tests and imaging does not result in any benefit to patient survival, as there are currently no curative options for patients with metastatic disease. Discussion of this minimalist approach to follow-up is often a difficult conversation to have with breast cancer patients. Many will seek the perceived security and reassurance of regular testing that proves they are "cancer free" or that offers the hope of further curative therapy if the cancer has recurred. Unfortunately, curative re-treatment in this scenario is usually only possible in the case of further surgery for recurrence in the breast.

Most BCSs should be screened for other malignancies in the same fashion as those at average risk in the population. Surprisingly, despite BCSs' experience of cancer and numerous physician visits, a population-based, retrospective, Canadian study demonstrated that, in 4 years of follow-up, 65% of eligible BCSs were never screened for colorectal cancer and 40% were never screened for cervical cancer.[22] This important gap in care needs the full attention of primary care providers.

Task 2: assessment and management of long-term effects (Table 2[15,18,23-27]). Many BCSs experience long-term physical and psychosocial effects from cancer and its treatments, including pain, fatigue, lymphedema, and psychological distress.[28,29] Risk factors for greater distress include a past history of depression or anxiety, poor social support, and younger age,[30-32] and FPs should assess those at highest risk carefully. There is evidence to support improvements in outcome with earlier diagnosis of distress through standardized screening,[33] and recently published guidelines provide excellent resources for FPs in the assessment and management of the psychosocial effects of cancer and its treatments.[23]

Cancer treatments such as anthracyclines (doxorubicin, epirubicin), left-sided radiation therapy, and targeted agents like trastuzumab are associated with heart failure, myocardial ischemia, arrhythmias, hypertension, and thromboembolism.[34-40] In addition, established cardiac risk factors such as hypertension, diabetes, dyslipidemia, obesity, and sedentary lifestyle are all more common in cancer survivors than in the general population.[41] Despite the lack of definitive guidelines, given that

Table 1. Surveillance and screening for asymptomatic breast cancer survivors

MANEUVER	RECOMMENDATION	LEVEL OF EVIDENCE*
Do ...		
Primary care visit with history and physical examination	• Every 3-6 mo for years 1-3 after treatment; every 6-12 mo for years 4 and 5; then annually • History to focus on symptoms of distant (bone, lung, liver, brain) and local recurrence • Examination focuses on surgical scar, breasts, chest wall, regional nodes, arms for lymphedema, and common sites of distant spread • Annual gynecologic examination for patients taking tamoxifen	III[14]
Breast self-examination	• Monthly breast self-examination is recommended in this higher risk group	III[14]
Mammography	• Annually, starting 1 y after initial mammogram but at least 6 mo after radiation therapy is complete; can perform every 6 mo in select cases; no routine imaging of a reconstructed breast is needed	II[14]
Screen for other cancers	• As for average-risk individuals, unless family history suggests otherwise	II[15]
Do not do ...		
Breast magnetic resonance imaging	• Not recommended	I[14,16,17]
Other tests • Complete blood counts • Liver function tests • Routine imaging of chest, abdomen, or bone • Tumour markers	• Not recommended	I[14,18]
Cardiac imaging	• Not recommended after completion of anthracycline (epirubicin, doxorubicin) or trastuzumab therapy unless there are symptoms	III[15]

*Level I evidence includes at least 1 properly conducted randomized controlled trial, systematic review, or meta-analysis. Level II evidence includes other comparison trials; non-randomized, cohort, case-control, or epidemiologic studies; and preferably more than 1 study. Level III evidence includes expert opinion or consensus statements and influential reports or studies.

most BCSs are at a higher risk of dying of heart disease than of cancer,[42-44] screening and active management of cardiac risk factors by FPs is recommended.[40,45]

Antiestrogen therapies such as aromatase inhibitors and tamoxifen are recommended for the 80% of BCSs whose tumours express estrogen receptors. Up to 50% of women will experience vasomotor and musculoskeletal symptoms such as joint pain and stiffness from these medications,[46-49] which often lead to poor adherence and treatment discontinuation.[50,51] Given that hormonal therapies statistically significantly improve disease-free survival and reduce the risk of recurrence,[52,53] FPs should place a high priority on assessing adherence and managing treatment-related side effects. Acetaminophen and nonsteroidal anti-inflammatory drugs have been found to be effective in managing musculoskeletal pain.[54] Emerging evidence suggests that yoga also reduces joint pain.[55]

Task 3: health promotion (Table 3[15]). Involvement of FPs is crucial to optimal survivorship care delivery.[56,57] Studies have consistently shown that survivors who visit their primary care doctors in addition to cancer specialists are more likely to receive recommended preventive care,[58-60] as well as higher-quality care for their other medical conditions.[57] When it comes to health promotion and disease prevention, FPs should approach a cancer survivor like a patient recently diagnosed with acute coronary syndrome: as someone who will strongly benefit from and will likely be receptive to counseling about lifestyle modification to enhance their health. Family physicians and BCSs have many reasons to take this active approach to rehabilitation, especially regarding the goal of increased physical activity of 150 minutes of moderate or 75 minutes of vigorous physical activity per week. A recent meta-analysis of observational (level II) studies suggested a dramatic 0.52 relative risk of death from any cause in BCSs who were more physically active.[61] There is also considerable level I evidence of many other benefits of physical activity in BCSs, including improvements in fatigue, pain, depression, and

Table 2. Assessment and management of the long-term effects of breast cancer and its treatments

CATEGORY	RECOMMENDATIONS	LEVEL OF EVIDENCE*
Cardiovascular health	• Monitor lipid levels and provide cardiovascular monitoring as indicated • Educate patient about healthy lifestyle modification (balanced diet, exercise, smoking cessation), potential cardiac risk factors, and when to report relevant symptoms (shortness of breath or fatigue) to health care providers	III[15] I[15]
Cognitive dysfunction	• Ask about cognitive difficulties • Assess reversible contributing factors of cognitive impairment and optimally treat when possible • Refer for neurocognitive assessment and rehabilitation if there are signs of cognitive impairment • Suggest self-management and coping strategies for cognitive dysfunction (relaxation, stress management, routine exercise)	III[15] I[15] I[15] III[18]
Distress, depression, anxiety	• Assess for distress, depression, and anxiety • Assess further if the patient is at higher risk of depression • Offer counseling and pharmacotherapy or refer to mental health resources as indicated	I[15,23] II[15] I[15]
Fatigue	• Assess for fatigue, use severity rating scale, and treat causative factors • Offer treatment or referral for factors affecting fatigue (mood disorders, sleep disturbance, pain, etc) • Encourage regular physical activity, refer for CBT if indicated • When fatigue is present, provide education and general strategies to manage fatigue, and evaluate • Do not recommend methylphenidate or modafinil to manage fatigue, given insufficient evidence • Preliminary evidence suggests that yoga is likely to improve fatigue	III[15,18,23] I[15] I[15,23] III[18] III[23] I[23]
Referral for genetic counseling	Consider referral for genetic counseling if • breast cancer was diagnosed before age 50 y (especially < 35 y) • ovarian cancer at any age (epithelial) • bilateral breast cancer in the same woman • both breast and ovarian cancers in the same woman or the same family • multiple breast cancers on the same side of the family (paternal or maternal) • male breast cancer • Ashkenazi Jewish ethnicity	III[24]
Osteoporosis	• DEXA scan at baseline then every 2 y if the patient is taking aromatase inhibitors or GnRH agonists	III[15]
Pain and CIPN	• Assess for pain and contributing factors with pain scale and history • Offer interventions such as acetaminophen, NSAIDs, physical activity, or acupuncture for pain • Suggest physical activity for neuropathic pain • Suggest duloxetine for neuropathic pain • Refer to appropriate specialists once the cause of pain has been determined (eg, lymphedema specialist) • Consider TENS for CIPN in survivors with contraindications to medication or for whom medication is ineffective • Consider acupuncture as an adjunct option to treat patients with medication-resistant CIPN	III[15] I[15] I[15] I[15] III[15] III[18,25] III[25]
Sexual health	• Assess for signs and symptoms of sexual or intimacy problems • Assess for reversible contributing factors to sexual problems and treat when appropriate • Offer nonhormonal, water-based lubricants for vaginal dryness • Refer for psychoeducational therapy and sexual or marital counseling when appropriate	III[15,18] III[15] I[15] I[15]
Premature menopause, menopausal symptoms	• Offer SNRIs, SSRIs, or gabapentin and lifestyle modifications to help vasomotor symptoms of premature menopause • Consider CBT or routine exercise for treatment • Consider tailored patient education interventions and consultations when appropriate to decrease menopausal symptoms	I[15] II[26] II[27]

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Table 2 *continued from page 808*

CATEGORY	RECOMMENDATIONS	LEVEL OF EVIDENCE*
Lymphedema	• Counsel weight loss for overweight or obese patients to prevent or reduce lymphedema risk	III[15]
	• Educate survivors about lymphedema signs and symptoms and assess for lymphedema	III[18]
	• Refer if symptoms are suggestive of lymphedema	III[15]
Infertility	• Refer survivors of childbearing age experiencing infertility to reproductive endocrinology and infertility specialists promptly	III[15]
Body image concerns	• Assess for body image concerns	III[15]
	• Refer to psychosocial resources as indicated	I[15]

CBT—cognitive behavioural therapy, CIPN—chemotherapy-induced peripheral neuropathy, DEXA—dual-energy x-ray absorptiometry, GnRH—gonadotropin-releasing hormone, NSAID—nonsteroidal anti-inflammatory drugs, SNRI—selective norepinephrine reuptake inhibitor, SSRI—selective serotonin reuptake inhibitor, TENS—transcutaneous electrical nerve stimulation.
*Level I evidence includes at least 1 properly conducted randomized controlled trial, systematic review, or meta-analysis. Level II evidence includes other comparison trials; non-randomized, cohort, case-control, or epidemiologic studies; and preferably more than 1 study. Level III evidence includes expert opinion or consensus statements and influential reports or studies.

Table 3. Health promotion for breast cancer survivors

CATEGORY	RECOMMENDATIONS	LEVEL OF EVIDENCE*
Weight management	• Counsel patients to achieve and maintain a healthy weight	III
	• Counsel patients who are overweight or obese to change dietary habits and increase physical activity to promote and maintain weight loss	I
Physical activity	• Counsel patients to avoid inactivity and return to daily activities as soon as possible after diagnosis	II
	• Aim for at least 150 min of moderate or 75 min of vigorous physical activity weekly	I
	• Include strength training exercises at least 2 d/wk	I
Nutrition	• Counsel patients to have a dietary pattern high in vegetables, fruits, whole grains, and legumes; low in saturated fats; and limited in processed and red meats	I
	• Limit alcohol to 1 unit/d	III
	• Consider supplements only if deficiencies are demonstrated	III
Smoking cessation	• Counsel patients to avoid smoking; offer or refer for cessation counseling and resources	I

*Level I evidence includes at least 1 properly conducted randomized controlled trial, systematic review, or meta-analysis. Level II evidence includes other comparison trials; non-randomized, cohort, case-control, or epidemiologic studies; and preferably more than 1 study. Level III evidence includes expert opinion or consensus statements and influential reports or studies.
Data from Runowicz et al.[15]

overall quality of life.[62] Exercise has been found to be safe both during and after cancer therapies,[63] and women should be counseled on the benefits of exercise early on in their care trajectory.

Weight management is also an important goal for the BCS, and one that is assisted by increased activity. Breast cancer survivors who are obese are at increased risk of cancer recurrence, second cancers, and other metabolic complications, and even modest weight loss has been associated with a reduced symptom burden and improved quality of life.[64,65] The evidence of benefit from dietary choices on their own is less compelling. Despite this, given that they are at greater risk of cardiovascular disease than the general population is, BCSs should be advised to adopt the healthy eating practices routinely recommended: a diet high in vegetables, fruits, and whole grains and limited in red meat consumption. Suggesting moderate alcohol intake (no more than 1 drink per day according to the American Cancer Society and American Society of Clinical Oncology breast cancer survivorship care guidelines,[15] or 2 standard drinks per day or 10 per week for women generally according to the Canadian low-risk drinking guidelines[66]) might also be important, as level II and III evidence indicates increased cancer recurrence rates in BCSs with higher alcohol consumption.[67]

Although current evidence is sparse regarding smoking cessation, a large observational trial (level II evidence) showed that, when compared with women who continued to smoke, those who quit smoking after diagnosis showed a statistical trend toward improved breast cancer–specific and all-cause mortality.[68] Continued smoking in cancer

survivors increases all-cause mortality, the risk of second cancers, and the risk of both myocardial infarction and congestive heart failure.[69] Assisting with smoking cessation should be a top priority in cancer survivorship care.

Task 4: care coordination. While FPs are increasingly leading the medical follow-up care of BCSs, the challenges that some BCSs face are best addressed with a multidisciplinary approach. Family physicians should actively consider which other health professionals might be helpful to their patients' recovery and initiate referrals promptly. This starts with nurturing a relationship with local oncologists or with FPs with focused practices in oncology, who in some regions of Canada supervise cancer treatment and can serve as excellent resources for the comprehensive-care FP.[70] Questions about the duration of therapy or switches in antiestrogen medications are common reasons for such consultation.

Guidance about follow-up care resources is also found in survivorship care plans, which are summary documents provided to patients and to FPs by some Canadian cancer centres at the end of treatment or upon discharge to primary care follow-up.[71,72] Another efficient source of information about survivorship-related resources for FPs or patients is the local cancer centre or clinic. General cancer survivorship programs, peer-led support, and specialized programs for brain fog, fatigue, sexual issues, lymphedema, and mental health challenges are of great value when needed. But we must not overlook our own family medicine clinics and networks, which might offer the most convenient and acceptable venues for a BCS to seek assistance from other health professionals in their recovery. In all aspects, FPs are encouraged to engage patients in the management of their own recovery and to actively support the critical role of family members and friends in survivorship.

Conclusion

Family physicians are increasingly the medical "quarterbacks" of care for women with breast cancer after the acute treatment phase is completed. The chronic phase of survivorship focuses on supporting BCSs as they recover from the considerable physical, psychological, and social effects of the cancer experience. In this sense, breast cancer is a chronic medical condition even in women who remain disease free. Cancer follow-up care in family practice will benefit from the same organized, evidence- and team-based care approach that is afforded other chronic conditions. A 4-component model of surveillance and screening, assessment and management of physical and psychosocial effects, health promotion, and care coordination provides FPs a useful framework with which to approach this important work.

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All authors contributed to the literature review and interpretation, and to preparing the manuscript for submission.

Competing interests

None declared

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