

Models for Delivering Survivorship Care

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ABSTRACT

Survivors of adult cancer face lifetime health risks that are dependent on their cancer, cancer treatment exposures, comorbid health conditions, genetic predispositions, and lifestyle behaviors. Content, intensity, and frequency of health care that addresses these risks vary from survivor to survivor. The aims of this article are to provide a rationale for survivor health care and to articulate a taxonomy of models of survivor care that is applicable to both community practices and academic institutions.

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INTRODUCTION

Because of the recent advances in early detection and treatment, the number of cancer survivors in the United States has grown from 3.0 million individuals in 1971 to approximately 10 million individuals as of 2002, representing 3.5% of the population.¹ The 5-year relative survival rate in adults diagnosed in the mid-1990s is estimated at 64%.² Along with these optimistic results come new challenges for cancer survivors, including the need for ongoing medical care, psychosocial support, and careful monitoring of treatment complications and cancer recurrence.³⁻⁵ For providers, the national challenge is to develop and institute care models that address the needs of this growing population, thus assuring survivors the highest quality of life possible.

In 2005, the Institute of Medicine (IOM) released a hallmark report, *From Cancer Patient to Cancer Survivor: Lost in Transition* that highlighted the long-term risks of cancer survivors.¹ Included in the IOM report was a description of models for the delivery of care for survivors of adult cancer.⁶ Building on this summary, the aims of this article are to provide a rationale for survivor health care and to articulate a taxonomy of models of survivor care that is applicable to both community practices and academic institutions. For this article, the term "oncologist" refers to the cancer specialist, including medical, surgical, or radiation oncologists and surgeons. As in the IOM report, this article focuses on the US perspective while drawing from the findings of studies from Europe and Canada.

DO CANCER SURVIVORS NEED LIFELONG SYSTEMATIC FOLLOW-UP CARE AND SPECIAL SERVICES?

In formulating a national plan for survivorship care, the design of any and all models will be predicated

on the answer to this question. For pediatric cancer survivors, the answer has been in the affirmative because the long-term health consequences of having cancer, resulting from the vulnerability of their developing organs and normal tissues, has long been evident. Depending on treatment exposures, this population has a significantly increased risk of premature mortality,⁷ serious morbidity,⁸ and adverse health status⁹ as they advance through their adult years. Importantly, because many late effects are modifiable through prevention or early detection and intervention, the concept of risk-based care of pediatric cancer survivors has evolved.^{10,11} The cornerstone of risk-based care is anticipatory, proactive care that includes a systematic plan of prevention and surveillance that is based on risks associated with the cancer therapy, genetic predispositions, lifestyle behaviors, and comorbid health conditions.

Now with an increasing focus on the adult cancer survivor, one questions whether the rationale for care of pediatric survivors is also applicable to this large, diverse population. In the last 10 years, studies have begun to document the late effects of therapy in survivors of adult cancer.^{5,12,13} Because much of this research has focused on breast cancer survivors, this model serves to illustrate our growing understanding of the long-term implications of cancer therapy.^{14,15} Weight gain and physical inactivity are common problems after treatment of breast cancer and increase the risk for recurrence, cardiovascular disease, and diabetes.¹⁶⁻¹⁸ Other late effects experienced by some breast cancer survivors include cognitive dysfunction,^{19,20} gonadal dysfunction, premature menopause, infertility,^{21,22} second malignant neoplasms,²³⁻²⁵ osteoporosis,²⁶⁻²⁸ anthracycline-related cardiomyopathy,²⁹⁻³³ body image changes and lymphedema,^{34,35} and psychosocial sequelae, including sexual dysfunction and fatigue.³⁴⁻³⁹

On the basis of the mounting evidence of long-term health risks of survivors of adult cancer, the IOM report strongly recommends lifelong health care for all cancer survivors.¹ Content, intensity, and frequency of health care that addresses these risks vary from survivor to survivor. In addition to surveillance for recurrent disease, this care should be individualized and promote risk-reducing strategies, including a plan to monitor for late effects. Beyond the period of greatest risk of recurrence, some survivors treated with less intense or tissue-damaging therapy are unlikely to experience a late effect and will require little additional monitoring. In contrast, others, including stem-cell transplant recipients, have significant risk of future health problems and will need closer attention. In addition, some survivors will benefit from special services, including outcome-specific multidisciplinary programs (eg, lymphedema program, cognitive rehabilitation) and more generalized services (eg, physical, occupational, and speech therapy; career counseling; peer-support programs; genetic testing and counseling).⁴⁰⁻⁴²

WHAT IS "USUAL PRACTICE" IN THE UNITED STATES?

On completion of cancer therapy, most adult cancer survivors in the United States are followed by their oncologist with a focus on monitoring for cancer recurrence and evaluating for persistent toxicity of therapy. The duration of this follow-up is variable, and guidelines on which to base this follow-up are limited and very recent. Consensus-based guidelines that focus on monitoring for cancer recurrence are available from the National Comprehensive Cancer Network.⁴³ The American Society of Clinical Oncology has recently undertaken an extensive effort to develop evidence-based guidelines for the long-term care of adult survivors.⁴⁴ Special services, as described herein, are sometimes provided for survivors, but most services are underutilized.⁴⁰

Care generally does not extend beyond surveillance for recurrence or occasional use of specialized services. A comprehensive plan of follow-up that includes monitoring for late effects and optimizing the use of specialized services is rarely developed and discussed with the survivor. In a busy practice, with a focus on patients undergoing active treatment, survivors are often lost to follow-up. Planned and formal transition of the cancer survivor from the oncologist to the primary-care physician is infrequent. Though most primary-care physicians are interested in the care of cancer survivors, there has been little formal transfer of knowledge about future health conditions associated with different cancer therapies or the dissemination of guidelines for survivor care. Communication is often lacking or episodic and usually does not include the key information needed to provide long-term survivor care. Thus, as noted in the IOM report, comprehensive, coordinated long-term care of cancer survivors in the United States is the exception rather than the norm.¹ Understanding that cancer survivors often face lifetime risks of future health problems, that our knowledge of these risks is evolving, and that the needs of cancer survivors are not being addressed by the current model, it is critically important to consider other strategies to improve care.

COMMUNITY-BASED SHARED-CARE MODEL

Because most adult cancer survivors in the United States are treated for their cancer in the community setting, away from comprehensive

cancer centers and academic institutions, our discussion will begin in this setting. To facilitate coordination between the oncologist and other physician groups providing care, we strongly endorse the adoption of a shared-care model for the cancer survivor. The following discussion defines shared care and provides a rationale for this approach, describes a basic model with potential refinements, highlights key barriers to the adoption of shared survivorship care, and calls for well-designed studies to compare the model with usual care.

Definition and Rationale

Simply stated, shared care refers to the care of a patient that is shared by two or more clinicians of different specialties (or systems that are separated by some boundaries). For example, management of a patient with diabetes may be shared by an endocrinologist and a primary-care physician. The shared-care model has been demonstrated to improve patient outcomes and enhance the management of patients with various chronic diseases including diabetes,^{45,46} chronic renal disease,⁴⁷ and those receiving oral anticoagulant therapy.⁴⁸ In the United States, as well as internationally, this model has become the standard for managing patients with a chronic disease. The cornerstone of shared care is personal communication and a periodic transfer of knowledge between the specialist and the primary-care physician.

Is this model applicable to the care of cancer survivors? Although some survivors develop a cancer-related medical condition during or soon after completing cancer therapy, many will not. However, over time, the incidence of late effects increases. With monitoring, some late effects will be diagnosed at an earlier, more treatable stage. With interventions, the risk of some late effects will be reduced. Thus, the paradigm for care of the cancer survivor is somewhat different than the patient with a chronic disease. Nonetheless, Earle and Neville⁴⁹ reported that 5-year survivors of colorectal cancer who saw both an oncologist and a primary-care physician were significantly more likely to have recommended care (acute interventions, management of comorbidity, or preventive care) in comparison with survivors who saw just one physician type. This was not an evaluation of formal shared care; simply seeing clinicians of both specialties increased the likelihood of having quality care. To date, there have not been published data from a US study evaluating the shared-care model for cancer survivors. There are a few studies from Europe and Canada that suggest that this model is applicable to the care of cancer survivors.⁵⁰⁻⁵⁵ In an elegant series of randomized clinical trials (RCTs) conducted in the United Kingdom and Canada, Grunfeld et al⁵¹⁻⁵⁴ have compared outcomes of early-stage breast cancer survivors who are followed by an oncologist or a primary-care physician. In the most recent RCT, involving 968 patients, family physicians were provided a one-page guideline for follow-up care that included frequency and content of physical examinations and mammography.⁵³ There were no differences in the rate of recurrence-related serious clinical events or health-related quality of life in women followed by family physicians compared with oncologists.

Shared-Care Model

Figure 1 provides a simple shared-care model for cancer survivors, including a delineation of roles and formal points of communication. In this model, when cancer is suspected or diagnosed, the primary-care physician refers the patient to the oncologist for therapy. In most situations, the primary-care physician continues to provide routine health-maintenance care for the patient and manages any comorbid diseases. Depending on the risk of recurrence, the patient is

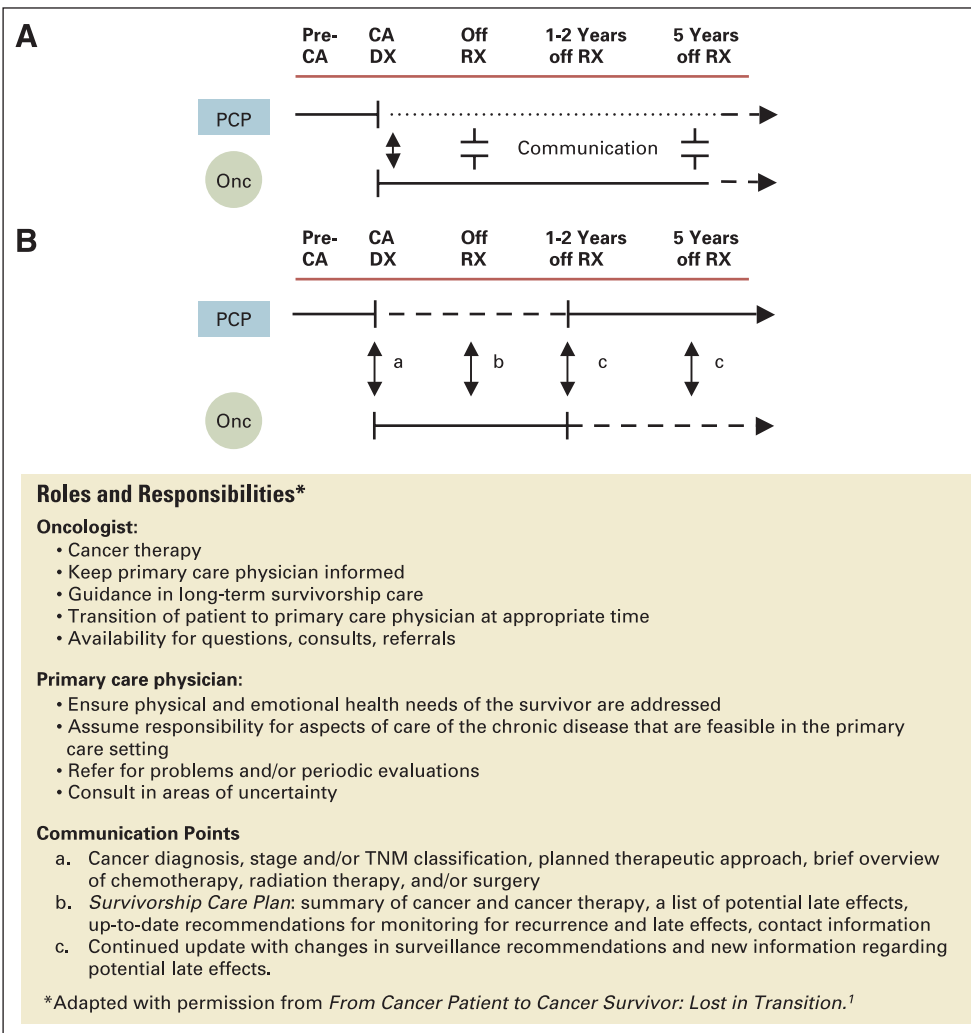


Fig 1. Proposed model for shared care of cancer survivors. (A) Current practice; (B) community-based shared practice. Solid line connotes primary responsibility; dashed line connotes secondary responsibility; dotted line connotes unclear responsibility frequently a discontinuation of care. CA, cancer; DX, diagnosis; Off RX, completion of cancer therapy; PCP, primary care physician; Onc, oncologist.

transferred back to the primary-care physician 1 to 2 years after completion of therapy. The primary-care physician then assumes responsibility for ensuring that the physical and emotional needs of the survivor are met, refers the survivor back to the oncology team for specific problems (or periodic evaluations), and consults in areas of uncertainty.⁶ The oncologist provides the primary-care physician with a Survivorship Care Plan⁵⁶ that includes a summary of the cancer and cancer therapy, a list of potential late effects, up-to-date recommendations for surveillance for recurrence and late effects, and contact information for any questions. Importantly, this provision of information, or knowledge transfer, is not a one-time point of communication. Because recommendations change over time, periodic communication is essential. The frequency of communication will depend on the risks and comorbid conditions of the survivor. If the patient develops a recurrence, care is transferred back to the oncologist.

This model can be refined with several additional strategies. First, a risk-stratified approach can be incorporated, as described by Wallace et al⁵⁷ in the care of pediatric cancer survivors in the United Kingdom. On the basis of the risk of recurrence or late effects, available resources of the oncology team, and patient preferences, survivors can be stratified into three groups. Survivors at low risk for future health problems are transitioned to the primary-care physician soon after completion

of therapy. A survivor at moderate risk is evaluated on alternating years by the oncology team or the primary-care physician. Survivors at high risk for late effects, such as those treated with a stem-cell transplantation, are followed annually by the oncology team. However, even with high-risk survivors, it is imperative that the oncology team strongly and actively encourage survivors to continue routine and non-cancer-related follow-up care with their primary-care physician and that two-way communication continue.

For the moderate-risk group, a second refinement can be added by adapting a three-component model developed by Dietrich et al^{158,59} for the management of depression. With the survivor as the central focus, the care manager, such as an oncology nurse, serves as a conduit between the oncology team and the primary-care physician, thus forming a triad. Annually (or at some standardized interval), the survivor is contacted by telephone by the care manager. Using an algorithm-directed protocol, the survivor is prescreened for physical and psychosocial outcomes and any new problems. On the basis of this information, the survivor is scheduled to see either the primary-care physician or the oncology team. The nurse care manager can also serve as a first triage point of contact for the survivor for any problems thought to be related to the cancer therapy. The primary-care practice, including both clinicians and office staff, are prepared with targeted

information and education and the implementation of a system process intended to facilitate the care of survivors. This adaptation is cost efficient and particularly suited for health care organizations and single-payer health care systems that include both the oncology team and the primary-care practice.

A shared electronic health record can further enhance this model.^{60,61} Though not a panacea, this technology can provide a more efficient method to maintain a summary of the cancer and cancer therapy, an updated set of follow-up guidelines, a list of current problems and potential late effects, and targeted information that can be updated by both the primary-care physician and the oncology team. Such systems also allow for asynchronous communication between the two groups via e-mail that becomes stored as part of the electronic health record. Several national⁶²⁻⁶⁵ and international⁶⁶⁻⁶⁸ initiatives are in progress to study how this technology can best be used to reduce medical errors and improve communication and quality of care. Patient portals, or encrypted Web-based methods for a patient to connect to the physician or clinical team, may also offer methods to facilitate survivor health care and empower survivors.^{69,70} Information, such as the Survivorship Care Plan and a current problem list, can be translated into lay language and partitioned to be available to the patient via a portal. This partitioned record can also include upcoming recommended surveillance tests with patient information.

Barriers to Implementing the Shared-Care Model

Perhaps stated differently, why, if this model has become the norm in chronic disease management, has it not been embraced in the care of cancer survivors? Two factors peculiar to cancer therapy have contributed to the current model of care of cancer survivors and will need to be addressed before implementing the shared-care model. Because much of a primary-care physician's time is spent managing patients with a set of chronic diseases, such as diabetes and hypertension, the various drug regimens and diagnostic criteria are very familiar. In contrast, the action, adverse effects, and long-term implications of most chemotherapeutic agents are unfamiliar to primary-care physicians. Second, many cancer patients are treated for 1 year and then are closely followed by the oncologist for another 1 to 2 years. During this time period, when the long-term survival of the patient is still in question, oncologists, with their internal medicine background, often manage the patient's comorbid conditions. This is done to streamline the patient's care by reducing the number of visits to different clinicians during a time period when the patient is often susceptible to infection or feeling the ill effects of their cancer or the chemotherapy. This approach also minimizes the initiation of new noncancer medications without the knowledge of the oncologist. The unstated rationale is that mildly uncontrolled hypertension or diabetes, or a delayed routine health maintenance screening, are not important if the patient does not survive the cancer. So, in many cases, the patient disconnects from the primary-care physician and is managed solely by the oncologist. Contributing to this may be a strong bond of loyalty to the oncologist who has "saved" the patient. Unfortunately, these factors, and others, have led to two recurring specialty-specific responses. Primary-care physicians assert that most oncologists "take over," "steal," or "keep" their patients, many with whom they have had long-standing relationships. Oncologists respond that the primary-care physicians are not "engaged," "interested," or "comfortable" in the care of cancer survivors and fear that if the cancer recurs there will

be a delay in referral. Regardless of the reason, when only one specialty is involved, care is often inadequate and ultimately the patient suffers.⁴⁹

To change this current standard approach to care and successfully implement a shared-care model, strategies to overcome these barriers will need to be developed. These will include an increase in curriculum time in undergraduate and primary postgraduate training devoted to the care of cancer patients and survivors, teaching of effective communication skills and strategies in oncology and primary-care training programs, and development of methods to efficiently transfer knowledge and information about specific patients from the oncologist to the primary-care physician. Perhaps most importantly, oncology and primary-care professional societies need to collaborate in developing evidence-based guidelines and educational resources regarding follow-up care of cancer survivors.

Testing the Shared-Care Model

The shared-care survivor model, and variations, will need to be compared with usual care in rigorously designed studies. We have the unique opportunity to study models through a natural clinical laboratory consisting of the National Cancer Institute (NCI; National Institutes of Health, Bethesda, MD) Community Clinical Oncology Program (CCOP)⁷¹ and primary care Practice-Based Research Networks.^{72,73} Currently, there are 63 NCI-supported CCOPs that include almost 4,000 physicians, primarily oncologists, in community settings where most cancer patients are treated. The Federation of Practice-Based Research Networks (PBRNs) consists of 65 networks with approximately 2,700 primary care practices and more than 6,500 primary-care physicians covering approximately 16 million people. An initiative to encourage and facilitate research through a combined effort of oncologists in the CCOPs and primary-care physicians in the PBRNs is necessary to further our understanding of survivor health care nationally.

The identification of a set of clinically relevant and measurable outcomes is critical to the future testing and refinement of models of survivor care. Key outcomes include mortality (cancer related and all cause), morbidity (late effects and comorbid conditions), and health-related quality of life (HRQOL). Such measurement can be facilitated by the novel use of existing tools. For example, the NCI Common Terminology Criteria for Adverse Events version 3 (CTCAEv3), a comprehensive, multimodality grading system for reporting treatment toxicity, could be used to measure the incidence and severity of late effects.^{74,75} An evaluation of the CTCAEv3 in a survivor population is being done and shows excellent utility.⁷⁶ Zebrack and Cella⁷⁷ have recently reported that detailed and comprehensive information about the HRQOL of survivors can be obtained in a number of ways: (1) using standard measures that can be compared with other populations, such as the Medical Outcomes Study Short-Form Health Survey (SF-36); (2) using cancer-specific instruments that have been validated in noncancer populations (European Organisation for Research and Treatment of Cancer [EORTC]⁷⁸ and Functional Assessment of Cancer Therapy [FACT]⁷⁹ questionnaires); or (3) using survivor-specific questionnaires (Long-Term Quality of Life [LTQL]⁸⁰ or Quality of Life–Cancer Survivors [QOL-CS]⁸¹). Other types of outcome measures important to consider are quality of care indicators such as adherence to guidelines, patient and physician satisfaction, and economic outcomes (eg, cost of program/patient care, absenteeism, lost work days, hospital admissions).

CARE OF ADULT CANCER SURVIVORS AT ACADEMIC INSTITUTIONS

In addition to treating cancer patients, academic institutions have taken the lead in survivor research. Much of what we have learned in the last 20 to 30 years about the short- and long-term outcomes of cancer survivors have been from studies conducted by academic investigators. Thus, as survivor programs have evolved, they generally include an active research component. Resources to develop and support programs and special services for survivors, a critical mass of survivor-focused clinicians and researchers, and a breadth of expertise and experience are available at cancer centers. Indeed, one of the required components of a cancer center to receive an NCI comprehensive cancer center designation is an active cancer control effort. Perhaps as importantly, though, is that most of our future leaders in oncology and primary care are educated and trained in academic institutions. It is imperative that these future leaders be exposed to the issues of cancer survivorship. Following is a brief description of current and evolving models of care in academic institutions.

Pediatric Long-Term Follow-Up Programs

In the early 1980s, it became readily evident that pediatric cancer survivors often experience late effects of therapy and that some conditions do not become clinically apparent until 10 to 20 years after therapy. To monitor for late effects, including second cancers, long-term follow-up (LTFU) programs were developed at institutions that treat children and adolescents with cancer. By 1997, 53% of such institutions had an LTFU program.⁸¹ Rather than having a disease-specific focus, most LTFU programs follow survivors of all pediatric cancers.^{82,83} The programs are generally directed by a pediatric oncologist and coordinated by an oncology nurse practitioner. Approximately half of the programs include a social worker and a psychologist and have an established network of pediatric and adult medicine specialists. Survivors are usually transitioned from the primary treating oncology team to the LTFU program when they have been off therapy for 2 years. The LTFU team generally follows the survivor on an annual basis and provides risk-based survivor care, including monitoring for recurrence, surveillance for late effects including second cancers, and targeted education and counseling focused on health maintenance.

Disease-Specific Cancer Survivor Programs

In the United States, a disease-specific model, such as a breast cancer survivor program, was the earliest iteration of a model for survivors of adult cancer. In the example of a breast cancer survivor program, oncology teams recognized that either during therapy or soon thereafter, a reasonable proportion of women developed health problems such as lymphedema, body image changes, depression, weight gain, or, rarely, cardiac disease. To address and manage these problems, some multidisciplinary single-disease programs have been developed. These programs either remain autonomous within the cancer center or are becoming incorporated into institution-wide survivorship initiatives.

Comprehensive Survivor Programs

A growing number of academic institutions are developing multidisciplinary programs that extend beyond a single cancer group. In contrast to pediatric survivor programs, which are relatively similar to one another, each of these budding adult cancer survivor programs is unique. Leaders for these programs have come from several different

backgrounds, including pediatric oncologists with experience in building pediatric survivor programs and nurses who have led in the effort to expand the institutional perspective of survivor health care. With all of the comprehensive survivor programs in their relative infancy, the short-term goal of the survivor program leaders is not to provide care for all survivors in the institution, but rather to pilot consultative or ongoing care models that will have an impact on the broadest number of cancer survivors. The ultimate goal of leaders in this area is to establish a comprehensive survivor program that serves the entire institution and directly or, more commonly, indirectly affects the care of all cancer survivors. An institution-wide program with an established infrastructure will facilitate the sharing of survivor-related clinical and research resources and expertise, thus enhancing the efficiency and the effectiveness of the program.

Leaders describe two keys to initial institutional success: focus and flexibility. They have focused on working with three or four disease-specific or treatment-specific (stem-cell transplantation) groups that are interested in survivor outcomes and survivor health care. Uniformly, survivor program leaders highlight the need for flexibility. A variety of approaches are used, depending on the needs, desires, and interest level of the oncologists from the different cancer groups. As one leader described it, her institution's comprehensive survivor program offers several "drop-down menu items" or services.

The programs largely consist of a team of physicians, nurses, and administrators. They network with the institution's psychological services, along with other special services commonly needed by cancer survivors. As with pediatric LTFU programs, the backbone of these developing comprehensive survivor programs is the oncology nurse practitioner.¹² Some of these nurses have extensive experience in oncology treatment and are quite familiar with the on-therapy or short-term health problems encountered by cancer patients. Others have a primary-care foundation and are familiar with common health problems encountered by adults. Additional survivor-based education and training is then provided in-house.

Although the evolving comprehensive survivor programs employ various combinations of the following models, there are three distinct types of care. The most basic type of care is a consultative option, whereby the primary oncology team refers the survivor for a one-time visit with the survivor-program staff. At this visit, an oncology medical summary and a systematic plan for surveillance for late effects are developed and counseling focused on psychosocial needs and risk reduction is provided. Program leaders view this option as having the lowest likelihood of influencing the long-term health of the individual survivor. However, it is a simple service that does not require significant additional resources and is intended to spread the vision of survivor care through the institution.

The second type of care is a nurse practitioner-led survivor clinic that functions as an extension of the care continuum and may be embedded with the treatment team (Fig 2A). A disease-specific group of oncologists, under the auspices of the survivor program and with assistance from its team members, defines services and a follow-up plan for its survivors. At a predetermined time after the completion of therapy, survivors are transitioned to the survivor nurse practitioner for follow-up, and the nurse practitioner reestablishes communication with the primary-care physician to initiate shared care of the survivor. The survivor is then followed for a period of time, defined by the risk of recurrence and late effects, and then formally transitioned by the nurse practitioner to the patient's primary-care physician. The shared-care model then continues as the nurse practitioner

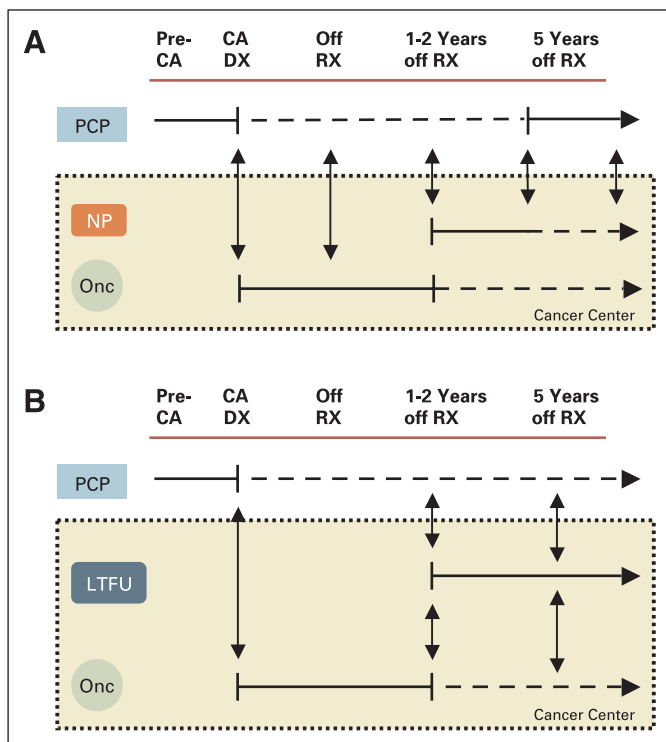


Fig 2. Academically based comprehensive survivor program models. (A) Nurse practitioner-led shared care; (B) multidisciplinary long-term follow-up program, stratified high-risk population. Solid line connotes primary responsibility; dashed line connotes secondary responsibility. CA, cancer; DX, diagnosis; Off RX, completion of cancer therapy; PCP, primary care physician; Onc, oncology team; NP, oncology nurse practitioner; LTFU, long-term follow-up program.

communicates periodically with the primary-care physician and provides patient-specific and updated guidelines for follow-up care. In this model, there can be several horizontal disease-specific programs (eg, breast cancer, lymphoma, prostate cancer) providing critical mass of survivor-focused clinicians. The strength of this approach is the relative low cost in terms of personnel and dollars. Appointment time slots for the oncologist are opened for the care of newly diagnosed patients or those in active treatment. The patient benefits from an evaluation focused on the appropriate phase of survivorship care. Because survivors are transitioned back to a community-based primary-care physician, a growing cohort of survivors receiving continued care at the academic institution is not created. However, if the goal is both the long-term health of the survivor and ongoing survivor research, a key component of such a model is the communication link between the nurse practitioner and the primary-care physician.

The third, and most complex and resource-intensive, type of care is a specialized multidisciplinary survivor program, emulating the

model of the pediatric LTFU programs (Fig 2B). In fact, the development of these programs was somewhat hastened by pediatric oncologists to provide care for their survivors who had become adults. As with the pediatric cancer survivor model and depending on the size of the program, the team consists of physicians trained or experienced in the care of cancer survivors (and thus a different perspective from physicians focused on active cancer care), oncology nurse practitioners, social workers, psychologists, administrators, and a network of consulting physicians. Risk-based care is provided in a survivor clinic through the team effort. This approach works well, at least in the short run, with cancer groups serving a small number of patients, such as adult survivors of pediatric cancer, testicular cancer survivors, or ovarian cancer survivors. The challenge is adapting this model to populations with larger numbers of survivors, as is true for most disease-specific adult cancer groups. As a component of any ongoing follow-up model, we strongly advocate the adoption of a risk-stratified approach, as described herein.

At this juncture, it is difficult to predict the future of comprehensive survivor programs. The Lance Armstrong Foundation (Austin, TX) has served as a timely catalyst to encourage cancer centers to develop sustainable comprehensive survivor programs that fit patient need and institutional capabilities. To date, they have provided substantial financial support to six institutions and intend to support a growing cadre of centers of excellence for survivor health care. However, the key to long-term success in the evolution of these programs depends on the development of sustainable, cost-effective models that provide a clinically-relevant benefit to the health and quality of life of cancer survivors and link academic centers of excellence to community-based practices.

SUMMARY

This is an exciting time for those committed to improving the care and outcome of cancer survivors. In the last 5 years, there have been several major national initiatives focusing on survivorship, including the IOM reports *From Cancer Patient to Cancer Survivor: Lost in Transition*¹ and *Childhood Cancer Survivorship: Improving Care and Quality of Life*¹⁰; a major NCI funding initiative through the Office of Cancer Survivorship, the *National Action Plan for Cancer Survivorship: Advancing Public Health Strategies*,⁸⁴ developed collaboratively by the Centers for Disease Control and Prevention (Atlanta, GA) and the Lance Armstrong Foundation; and numerous President's Cancer Panels. The challenge will be to translate this attention and momentum into change that extends quality cancer care to survivors in varied settings and circumstances.

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