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# Survivorship Care Plan Implementation in US Cancer Programs: a National Survey of Cancer Care Providers

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## Abstract

Survivorship care plans (SCPs)—documents intended to improve care for cancer survivors who have completed active treatment—are required, yet implementation is poor. We sought to understand SCP implementation in cancer programs in the USA with the objective of identifying opportunities for improvement. We recruited cancer care providers in the USA via several cancer care networks to participate in a survey regarding SCP implementation. We used descriptive statistics to analyze the data. Three hundred ninety-five providers from diverse cancer programs in 47 states and Washington, DC responded to the survey. The timing of SCP implementation varied across and within cancer programs, with approximately 40% of respondents reporting developing SCPs more than 3 months after primary treatment or adjuvant therapy completion. Nurse navigators were responsible for 48–58% of each stage of SCP implementation. Processes that could have been automated often occurred in-person or via phone and vice versa. Respondents reported spending more than 2 h per SCP to complete all stages of implementation, of which less than a third was reimbursed by third-party payers. We identified several opportunities for improving SCP implementation, including broadening the base of responsibility, optimizing modes of communication, decreasing the time required and increasing the funding available, and limiting variation in SCP implementation across and within cancer programs. Future work should assess the influence of approaches to SCP implementation on desired outcomes.

**Keywords** Survivorship care plans · Implementation · Cancer care delivery · Quality improvement

## Introduction

There are more than 15.5 million cancer survivors in the USA [1]. Cancer and its treatment may have late and long-term physical, psychosocial, financial, sexual, and spiritual effects on survivors [2]. These effects can be addressed through co-ordinated care from follow-up care providers (e.g., primary care providers (PCPs), oncologists); however, coordination of survivors' care is often poor, at times resulting in the

duplication or omission of recommended services [3–7], poor health outcomes [6, 8–11], and significant costs to survivors and the US healthcare system [12]. To improve coordination of care and outcomes for survivors, organizations including the American College of Surgeons' Commission on Cancer and National Accreditation Program of Breast Centers require cancer care providers to develop and deliver survivorship care plans (SCPs) to survivors and their follow-up care providers [12–16]. SCPs are written documents that ideally include treatment summary information (e.g., diagnosis, stage, treatments), plans for follow-up care (e.g., surveillance, preventive services), and recommended division of responsibilities among follow-up care providers.

Although SCP use recommendations and requirements are widespread, the effectiveness of SCPs remains unclear. Qualitative and observational studies have found that survivors and PCPs benefit from SCPs [17]; however, to date, seven papers from eight randomized controlled trials (RCTs) of SCPs' effectiveness have reported largely null results [18–24]. Null results may be due, in part, to variation in SCP implementation. SCP implementation in US cancer

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programs remains at an estimated 12–43% [25–29]. Salz et al. found that 43% of National Cancer Institute (NCI)-designated cancer programs used SCPs for breast cancer survivors [28]. In their study of Massachusetts cancer care providers, Merport et al. found that just 14% developed SCPs [29]. Less than 10% of the nationally representative sample of medical oncologists in Forsythe et al.'s 2013 study reported always or almost always developing SCPs for survivors [30].

Variation in implementation likely influences SCPs' effectiveness; if SCPs are not successfully implemented, they are unlikely to produce desired results. Researchers have identified barriers to SCP implementation including insufficient resources of time, staff, training, templates, and funding [26, 28, 30, 31], yet few studies have articulated the processes used to implement SCPs. As such, our study objective was to characterize the processes used to implement SCPs in practice. Understanding how cancer care providers identify survivors who are eligible for SCPs, refer them for SCPs, develop SCPs, and deliver SCPs to survivors, and their follow-up care providers illuminate the challenges to implementing SCPs, opportunities for improving SCP implementation processes, and promising approaches to implementing SCPs.

## Materials and Methods

### Survey Development

In response to several questions regarding SCPs posted on the Association of Community Cancer Center's (ACCC) membership-only web-based ACCC Exchange, the PI (MPC) fielded a brief survey to clarify providers' informational needs regarding SCPs. Twenty-nine individuals responded and were invited to participate in a Survivorship Special Interest Group (S-SIG), a group created as part of the Patient-Centered Outcomes Research Institute-funded Generation And Translation of Evidence (GATE) Cancer Community of Practice contract. S-SIG members participated in conference calls to develop a survey to identify informational gaps in providers' SCP-related needs. The PI (MPC) drafted the first iteration of the survey based on feedback from the S-SIG. After review by the S-SIG to confirm that the survey reflected their feedback, the co-PI (SB) revised the draft with an eye to the stages of SCP implementation: (1) identify survivors who are eligible to receive SCPs, (2) refer survivors to receive SCPs, (3) develop, (4) save and/or (5) update SCPs, and/or (6) deliver SCPs to survivors or other providers. We then conducted cognitive interviews with three providers who use SCPs to improve content validity of individual questions and edited questions based on feedback. The final survey consisted of six sections representing each stage of SCP implementation, each with approximately 10 items, and a demographic section regarding characteristics of respondents' cancer programs. In most cases, items allowed respondents to select multiple response options.

### Study Participants

We recruited a convenience sample of US health care providers who are responsible for one or more of the stages of SCP implementation. In particular, we were interested in providers' perspectives on the processes used to execute each of these stages (e.g., person responsible, prompt to initiate). George Washington University employees were not eligible to participate due to institutional research restrictions. We recruited respondents by sending customized e-mails to the following listservs: the ACCC (approximately 23,000 members), the Academy of Oncology Nurse & Patient Navigators (approximately 5000 members), the Commission on Cancer (representatives from approximately 1500 cancer programs), and the Oncology Nursing Society (approximately 39,000 members). In addition, five states funded by the Centers for Disease Control and Prevention to advance survivorship in their states were invited to participate (IN, LA, MI, SD, and WA). The study team also invited the approximately 35 members of the S-SIG and other stakeholders within our networks (approximately 10) to share the survey invitation with their contacts. Collectively, these groups represented nearly 69,000 potential participants who may have received our emails. To optimize recruitment, we used Dillman's method of repeated contact [32], adapted based on organizational policies of partners regarding number of times their membership could be contacted.

### Data Collection

We fielded the one-time, anonymous online survey resulting from the S-SIG's efforts between November 2016 and January 2017. We administered the survey and managed study data using REDCap (Research Electronic Data Capture), a secure, web-based survey software. We programmed skip logics into the survey to direct respondents to the stages of SCP implementation in which they engaged. Upon completing the survey, respondents were invited to submit their contact information, using a separate Survey Monkey link, to be entered into a draw for a $50 gift card. The Institutional Review Board at the George Washington University exempted the study from human subjects review.

### Statistical Analysis

To characterize SCP implementation in practice, we report descriptive statistics including percentages, medians, and

ranges. We report medians and ranges because of substantial variation and right-skewing in the data. Out of the interested potential participants, we only included those who met the eligibility criteria.

## Results

### Respondent Characteristics

Of the approximately 69,000 potential participants who may have received our recruitment emails, the study sample consisted of 395 survey respondents from 47 states and Washington, DC, for an approximate response rate of 0.6%. Respondents primarily included nurse navigators (44%), registered nurses (RNs) (30%), and oncology nurse practitioners (NPs) (10%) (Table 1). Respondents had multiple roles in SCP use. Eighty percent of respondents were responsible for more than one stage of SCP implementation, and nearly 51% were responsible for five or more stages.

Respondents reported that the median annual incidence of cancer in their programs was $n = 700$ patients (range = 1–8000). Forty-six percent (46%) of respondents worked in community hospital comprehensive cancer centers, and 27% worked in community hospital cancer programs (Table 1). Respondents' cancer programs were members of professional organizations including the American College of Surgeon's Commission on Cancer (81%), the ACCC (38%), and the American Society for Clinical Oncology's (ASCO) Quality Oncology Practice Initiative (36%).

### SCP Implementation Processes

Table 2 describes the processes (rows) used to execute each stage of SCP implementation (columns). For example, the first row describes the prompt to initiate (process) each stage of SCP implementation (e.g., identifying survivors, delivering SCPs). Immediately below, we describe cross-cutting issues that apply to multiple stages of SCP implementation. Following that section, we examine key issues pertaining to selected stages of SCP implementation.

### Cross-Cutting Issues

#### SCPs Were Primarily Used for Three Cancer Survivor Groups
The most common survivor groups for which SCPs were used included breast (85%), colon or rectal (59%), and lung (53%). More than 30% of respondents reported that SCPs were used for prostate, head and neck, endometrial, ovarian, and lymphoma survivors. Respondents reported that SCPs were seldom used for brain, myeloma, or leukemia survivors (Table 1).

**Timing of SCP Implementation Varied Across US Cancer Programs** Sixty-one percent (61%) of respondents reported that SCPs were developed within 3 months of completion of adjuvant therapy; 40% reported developing SCPs more than 3 months after completion of primary treatment or adjuvant therapy. Likewise, 65% of respondents reported that SCPs were delivered to survivors within 3 months of completion of adjuvant therapy, but another 50% reported doing so more than 3 months after treatment or therapy are completed. That many respondents selected multiple response options suggests that the timing of SCP implementation varies within, as well as across cancer programs.

**SCP Implementation Primarily Fell to Nurse Navigators** Approximately half of respondents indicated that nurse navigators are responsible for each stage of SCP implementation in their cancer programs. Many respondents indicated that oncology NPs or oncologists develop the follow-up care portion of SCPs (22 and 26%, respectively) and deliver SCPs to survivors (31 and 24%, respectively). Cancer registry staff, oncology physician assistants, and social workers were seldom identified as responsible for SCP implementation.

**Providers Used Suboptimal Methods of Implementing SCPs** Processes that could have been automated because they did not require discussion of patient issues often occurred in-person or via phone. Few SCPs were developed in electronic health records (EHRs; 43%); of the respondents who reported developing SCPs in EHRs, just 46% indicated that at least a portion of original or updated information in SCPs was autopopulated (Table 2). In contrast, processes that may have benefitted from direct contact occurred indirectly. Although more than half of respondents reported delivering SCPs to survivors in person, nearly a third reported doing so via postal service. More than half of respondents (58%) reported that SCPs (original and updated) were delivered to follow-up care providers via fax.

**Implementing SCPs Was Time-Consuming** On average, respondents reported spending more than 2 h per SCP to complete all stages of implementation, even among those who automated some stages of SCP implementation (Table 2). Respondents reported that the most time-consuming stages were developing the treatment summary (median = 30 min; range = 0.3–240 min) and delivering the SCP to survivors (median = 39 min; range = 0–240 min). The least time-consuming stage was delivering SCPs to follow-up care providers (median = 10 min; range = 0–280 min).

**Financial Commitment to SCP Use Was Lacking** Most respondents (97–99%) reported receiving no external funding to support SCP implementation. Eighteen percent (18%) of respondents were reimbursed from private or public

**Table 1** Characteristics of respondents, respondents' organizations, and survivorship care plan (SCP) implementation

| Characteristics | % |
|---|---|
| Respondent's role in SCP use ($n = 394$) | |
|   Identify survivors who are eligible to receive SCPs | 72.3 |
|   Develop SCPs | 66.0 |
|   Create and/or revise SCP templates | 62.7 |
|   Save SCPs | 53.6 |
|   Deliver SCPs to cancer survivors | 53.6 |
|   Deliver SCPs to survivors' follow-up care providers | 48.2 |
|   Update SCPs | 36.5 |
|   Refer survivors to receive SCPs | 28.4 |
|   None of the above | 0.0 |
| Respondent's current position ($n = 394$) | |
|   Nurse navigator | 44.2 |
|   Registered nurse | 29.9 |
|   Oncology nurse practitioner | 9.6 |
|   Cancer registry staff | 3.8 |
|   Patient navigator (not a nurse or social worker) | 3.3 |
|   Social worker | 3.3 |
|   Nurse practitioner (not oncology-based) | 2.8 |
|   Health educator | 2.0 |
|   Oncologist (physician) | 1.5 |
|   Physician other than oncologist | 1.5 |
|   Oncology physician assistant | 1.3 |
|   Physician assistant (not oncology-based) | 0.8 |
|   Medical director | 0.0 |
|   Other | 22.1 |
|   Decline to respond | 1.3 |
| Annual incident cancers (median (range)) ($n = 292$) | 700 (1–8000) |
| Cancer program type ($n = 292$) | |
|   Community hospital comprehensive | 45.5 |
|   Community hospital | 27.4 |
|   Affiliate | 12.7 |
|   Hospital associate | 11.3 |
|   Teaching hospital | 10.6 |
|   Freestanding | 7.9 |
|   National Cancer Institute—designated comprehensive | 5.5 |
|   National Cancer Institute—designated | 4.1 |
|   Integrated | 2.7 |
|   Network | 2.1 |
|   Pediatric | 1.7 |
|   National Cancer Institute—designated cancer network | 1.4 |
|   Veterans affairs | 1.4 |
|   Pediatric cancer program component | 0.7 |
|   Don't know | 1.7 |
|   Decline to respond | 0.7 |
| Organization membership ($n = 292$) | |
|   American College of Surgeons Commission on Cancer | 80.8 |
|   Association of Community Cancer Centers | 38.4 |

**Table 1** (continued)

| Characteristics | % |
|---|---|
|   American Society for Clinical Oncology Quality Oncology Practice Initiative | 36.3 |
|   National Comprehensive Cancer Network | 26.0 |
|   NCI Community Cancer Centers Program | 5.8 |
|   LIVESTRONG Foundation (formerly Lance Armstrong Foundation) | 3.8 |
|   National Coalition for Cancer Survivorship | 3.1 |
|   Don't know | 12.0 |
|   Decline to respond | 2.4 |
| Tumor groups for which SCPs are used ($n = 394$) | |
|   Breast | 85.0 |
|   Colon or rectal (including anal) | 58.6 |
|   Lung | 53.3 |
|   Prostate | 43.4 |
|   Head and neck | 42.1 |
|   Endometrial | 32.2 |
|   Ovarian | 31.2 |
|   Lymphoma (Hodgkin and non-Hodgkin) | 31.0 |
|   Testicular | 25.1 |
|   Kidney | 24.1 |
|   Melanoma | 23.9 |
|   Thyroid | 20.1 |
|   Brain | 18.5 |
|   Myeloma | 14.0 |
|   Leukemia | 12.2 |
|   Clinical trials patients | 6.6 |
|   Other | 7.6 |
|   Don't know | 1.0 |
|   Decline to respond | 1.3 |
| Organizational system for identifying survivors ($n = 257$) | |
|   Non-automated system | 45.9 |
|   No system | 44.4 |
|   Automated system | 4.7 |
|   Other | 12.5 |
|   Decline to respond | 0.8 |
| Process for determining eligibility ($n = 257$) | |
|   On a case-by-case basis | 73.2 |
|   Patient receives care in a particular tumor group | 23.0 |
|   Other | 21.0 |
|   Don't know | 0.4 |
|   Decline to respond | 0.8 |

payers for SCP delivery to survivors (Table 2). Notably, of the approximately 140 min that it took respondents to see SCPs through all stages, respondents reported that only the delivery of SCPs to survivors, which took less than one third of the total time required to complete SCP implementation, was eligible for reimbursement.

## Selected Stages of SCP Implementation

**Stage 1: Template Creation and Revision** Most commonly, SCP templates were developed within cancer programs (42%). Respondents reported that follow-up care plan content was most often informed by the National Comprehensive Cancer Network (NCCN) (80%) and ASCO (60%) guidelines. A plurality of respondents (39%) reported that SCP templates in their cancer program were revised once a year and that more than one colleague reviewed template revisions (63%). Most respondents reported that revisions to SCP templates were prompted by changes in guidelines or recommendations (63%) or changes in stakeholders' (e.g., survivors, caregivers) needs (59%; Table 3).

**Stage 2: Identifying Survivors Who Are Eligible for SCPs** Forty-four percent (44%) of respondents indicated that they lacked a system for identifying survivors as eligible for SCPs; 73% reported doing so on a case-by-case basis. Most respondents reported that, subsequent to identification, an SCP would be developed (82%) and delivered to a survivor during a clinical visit (74%; Table 2).

**Stage 3: Referring Survivors for SCPs** Seventy percent (70%) of respondents reported that referral was for SCP delivery during a patient visit; and 20% reported that referral was for SCP delivery via postal service, fax, email, or patient portal. There was substantial variation in the provider to whom survivors were referred. Most frequently, survivors were referred to NPs (40%), nurse navigators (40%), oncologists (35%), and/or RNs (28%). That respondents selected multiple options suggests that to whom survivors were referred for SCPs varied within, as well as across cancer programs.

**Stage 5: Delivering SCPs to Survivors** Most respondents reported that SCPs were delivered during a visit not specific to survivorship (65%) or a survivorship-specific visit (55%) in the same location as cancer treatment was provided (52%) or in a separate room affiliated with the cancer program (52%). Thirty-two percent of respondents reported that SCPs were delivered via postal service. Most respondents reported that survivors received other informational materials along with SCPs (85%). Twenty-four respondents (24%) reported also providing consultation when delivering SCPs (Table 2).

**Stage 7: Updating SCPs** Respondents reported relying most often on NCCN or ASCO guidelines to update original SCP content. Most respondents reported delivering updated SCPs to survivors (75%) and follow-up care providers (51%) and reported that the process for delivery did not differ from the process for delivering the original SCP (86%; Table 2).

## Discussion

We sought to characterize SCP implementation in US cancer programs, a topic that has received little attention in extant studies. In so doing, we identified several persistent challenges in implementing SCPs. First, we found that SCP implementation primarily fell to nurse navigators. To the extent that this represents one or a small number of individuals bearing the burden, SCP implementation is unlikely to be consistent; if the few people charged with the task are unavailable, SCPs will not be implemented. Indeed, in another of our studies, we found that tasking appropriate employees with SCP implementation and ensuring that SCP implementation does not fall on individual employees was critical for successful SCP implementation ((authors' names redacted for blinding purposes): determinants of successful SCP implementation: results from a qualitative study. Manuscript under review).

Second, we found that providers used suboptimal methods of implementing SCPs. When warm handoffs were warranted to convey important patient information (e.g., discussing nuances of a survivor's condition with a PCP), processes were automated, and when automation might have expedited processes (e.g., developing SCPs), providers communicated in-person or via phone. These suboptimal modes of communication are likely to reduce efficiency and quality by, for example, decreasing the information transmitted regarding the nuances of a survivor's case and increasing the time required to develop SCPs. Solet et al. recommended that patient handoffs in the hospital setting occur in person in order to adequately communicate the full range of patient care needs to the receiving physician. The authors found that commonly used indirect measures (e.g., medical chart) left ambiguities in the care process for which the receiving physician could not easily find answers and could lead to errors in care [33].

Third, SCP implementation remains time-consuming. This finding is consistent with extant studies suggesting that developing SCPs can take up to 1.5 h [34] and expands on those studies by identifying (1) the scope of the issue based on responses from hundreds of US cancer programs and (2) additional bottlenecks in SCP implementation, including delivering the SCP to survivors. Identifying methods of streamlining these processes without compromising quality will be critical for facilitating implementation and promoting SCPs' effectiveness, particularly in light of evidence that suggests that clinicians are willing to allocate 20 min or less to SCP development [30].

Fourth, we found that SCP implementation is underfunded, potentially influencing the proficiency and consistency with which SCPs are implemented as cancer programs struggle to comply with requirements while providing billable services. Reimbursement for SCP implementation is uncommon overall. Even among practices that successfully obtain reimbursement for SCPs, few processes—and so, only a partial percentage of effort—are compensated. To date, a Medicare code exists for

**Table 2** Survivorship care plan (SCP) implementation processes (rows) by stage (columns)

| | Identifying (72.3%; n = 285) | Referring (28.4%, n = 112) | Developing (66.0%, n = 260) | Saving (53.6%, n = 211) | Delivering to survivor (53.6%, n = 211) | Delivering to follow-up care provider (48.2%, n = 190) | Updating (36.5%; n = 144) |
|---|---|---|---|---|---|---|---|
| **Prompt to initiate** | | | | | | | |
| Survivor reaches stage of care trajectory | n/a | **78.1** | **75.7** | n/a | n/a | n/a | n/a |
| Communication from another provider | n/a | n/a | n/a | **85.2** | **75.1** | **36.6, 70.6**[a] | n/a |
| Provider's judgment | n/a | n/a | 31.5 | n/a | n/a | n/a | n/a |
| Provider completed previous step | n/a | n/a | 22.5 | 9.1 | 9.8 | 2.6, 2.0[b] | n/a |
| Automated reminder | n/a | 5.2 | 6.3 | n/a | n/a | n/a | n/a |
| Other | n/a | 18.8 | 13.5 | 15.3 | 28.3 | 8.5 | n/a |
| **Point at which stage occurs** | | | | | | | |
| Within 3 months of diagnosis | 31.9 | 23.2 | 23.4 | n/a | 13.9 | 2.0 | n/a |
| Within 3 months of completion of primary treatment | **43.6** | 34.7 | 23.4 | n/a | 40.5 | 12.4 | n/a |
| Within 3 months of completion of adjuvant therapy | 37.4 | **48.4** | **60.8** | n/a | **64.7** | **40.5** | n/a |
| More than 3 months after completion of primary treatment or adjuvant therapy | 30.0 | 33.7 | 39.6 | n/a | 50.9 | 35.3 | |
| **Person responsible for executing**[c] | | | | | | | |
| Nurse navigator | **51.2** | **48.2** | **53.5** | **48.3** | **54.5** | **56.3** | **48.6** |
| Registered nurse (RN) | 32.6 | 26.8 | 35.0 | 28.9 | 33.2 | 34.7 | 35.4 |
| Oncology nurse practitioner (NP) | 10.2 | 11.6 | 12.3 | 14.7 | 15.6 | 15.3 | 15.3 |
| Oncologist | 0.4 | 1.8 | 0.4 | 1.0 | 1.9 | 0.5 | 0.7 |
| Cancer registry staff | 3.9 | 2.7 | 3.9 | 4.3 | 0.0 | 1.6 | 1.4 |
| Oncology physician assistant (PA) | 1.4 | 0.9 | 1.9 | 2.4 | 1.9 | 2.6 | 2.1 |
| Social worker | 2.5 | 2.7 | 2.7 | 2.4 | 1.9 | 1.1 | 2.8 |
| Physician not oncologist | 0.7 | 1.8 | 0.77 | 1.0 | 1.0 | 1.1 | 1.4 |
| Patient navigator (not RN or social worker) | 2.5 | 4.5 | 1.2 | 2.4 | 1.0 | 1.1 | 1.4 |
| Non-onco NP | 3.2 | 2.7 | 3.5 | 3.3 | 4.7 | 4.2 | 4.2 |
| Non-onco PA | 0.4 | 0.0 | 1.2 | 0.0 | 1.0 | 0.5 | 0.7 |
| Health educator | 1.8 | 2.7 | 2.3 | 1.9 | 2.8 | 3.2 | 3.5 |
| Medical director | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other | 18.6 | 20.5 | 16.2 | 15.2 | 13.7 | 13.7 | 19.4 |
| Do not know | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Decline to respond | 0.4 | 0.9 | 0.0 | 0.5 | 0.0 | 0.0 | 0.7 |
| **Method of communication**[d] | | | | | | | |
| In person | n/a | **69.5** | **22.1** | n/a | 64.7, 54.9[e] | n/a | n/a |

**Table 2** (continued)

| | Identifying (72.3%; n = 285) | Referring (28.4%, n = 112) | Developing (66.0%, n = 260) | Saving (53.6%, n = 211) | Delivering to survivor (53.6%, n = 211) | Delivering to follow-up care provider (48.2%, n = 190) | Updating (36.5%, n = 144) |
|---|---|---|---|---|---|---|---|
| Phone | n/a | 42.1 | 6.8 | n/a | n/a | n/a | n/a |
| Email | n/a | 6.3 | 15.3 | n/a | 1.2 | 11.2 | n/a |
| Patient portal | n/a | n/a | 8.1 | n/a | 5.2 | n/a | n/a |
| Fax | n/a | n/a | 15.3 | n/a | 0.6 | **57.9** | n/a |
| Postal service | n/a | n/a | 4.5 | n/a | 32.4 | 32.2 | n/a |
| Shared electronic health record | n/a | n/a | n/a | n/a | n/a | 37.5 | n/a |
| Other | n/a | 20.0 | 13.1 | n/a | n/a | 13.2 | n/a |
| Decline | n/a | 3.2 | n/a | n/a | 1.2 | 3.9 | n/a |
| Not applicable | n/a | n/a | 44.1 | n/a | n/a | n/a | n/a |
| External funding | | | | | | | |
| Private third party | 0.0 | 1.1 | 0.0 | n/a | 8.7 | 0.0 | 0.9 |
| Public third party | 0.4 | 1.1 | 0.0 | n/a | 8.7 | 0.0 | 0.9 |
| Grant | 1.2 | 1.1 | 0.9 | n/a | 1.7 | 2.0 | 0.9 |
| Other | 0.4 | 0.0 | 0.0 | n/a | 1.7 | 0.0 | 0.0 |
| None | **98.0** | **96.7** | **99.1** | n/a | **79.2** | **98.0** | **97.3** |
| Time to complete in minutes (median (range)) | 10.0 (0–90) | 10.0 (0–120) | Treatment summary 30.0 (0.3–240)    Follow-up care plan 15.0 (1–280) | 10.0 (0–240) | 38.8 (0–240) | 10.0 (0–280) | 15.0 (0–240) |

Bold values denote highest frequency of response

n/a = not a response option

n = number of respondents who self-identified process role, not the same n for each question

[a] (36.6%) Respondent finished developing SCP / (70.6%) respondent finished delivering SCP to cancer survivor

[b] (2.6%) Notification from another provider that an SCP has been developed / (2.0%) notification from another provider that SCP has been delivered to cancer survivor

[c] Roles are not mutually exclusive

[d] 86% of respondents noted that the process for delivering updated SCPs to survivors and caregivers did not differ from that of delivering the original version

[e] (64.7%) A visit not specific to survivorship care / (54.9%) a specific survivorship care visit

**Table 3** Characteristics of survivorship care plan (SCP) template creation and revision

| Characteristic | % |
| --- | --- |
| Template used (n = 229) | |
| Template developed within organization | 42.4 |
| American Society of Clinical Oncology | 25.3 |
| Journey forward | 22.7 |
| Other | 22.7 |
| LIVESTRONG care plan | 4.8 |
| Memorial Sloan Kettering Cancer Center | 0.4 |
| Do not know | 0.0 |
| Decline to respond | 1.4 |
| Resource for follow-up portion of SCP (n = 229) | |
| National Comprehensive Cancer Network guidelines | 80.3 |
| American Society of Clinical Oncology guidelines | 60.3 |
| American Cancer Society guidelines | 38.4 |
| Institutional protocol | 24.5 |
| Your own judgment | 11.4 |
| Other | 8.3 |
| Decline to respond | 0.4 |
| How often are SCP templates revised? (n = 228) | |
| Once a year | 38.6 |
| Other | 25.4 |
| Never | 17.5 |
| Twice a year | 10.5 |
| Four times a year | 5.3 |
| Decline to respond | 2.6 |
| How many people review changes to template? (n = 182) | |
| More than one colleague | 63.2 |
| One colleague | 20.3 |
| No one | 15.9 |
| Decline to respond | 1.6 |
| Factors that prompt revision of SCP templates (n = 182) | |
| Changes in guidelines or recommendations | 63.2 |
| Changes in survivors', caregivers', or follow-up care providers' needs | 58.8 |
| Other | 20.9 |
| Decline to respond | 2.2 |

providers to document SCP development, but funding is not currently available to reimburse providers for these services. Medicare and other third-party payment may be necessary to promote more widespread SCP implementation.

Fifth, we found substantial variation in SCP implementation both across and within cancer programs, suggesting disparities in survivorship care. This is consistent with Salz et al.'s finding of variation in SCP content and subsequent lack of adherence to recommended survivorship care guidelines [28]. To the extent that variation contributes to disparities in survivorship care, promoting more consistent SCP implementation may limit existing disparities in survivorship care.

Several limitations of this study should be noted. With a convenience sample, we reached a small fraction of the nearly 69,000 potential participants who may have received our recruitment email. Therefore, we are unable to generalize to all US cancer programs; however, our study was intended to be exploratory. Further, respondents came from 14 types of cancer programs in 47 states and Washington, DC, suggesting excellent representation. Another limitation is that we did not validate or assess survey items' reliability, although we conducted three cognitive interviews to promote survey item quality. Social desirability bias may have caused respondents to over-report the quality of SCP implementation. Further, providers who agreed to participate in the study may have been more likely to respond if their programs successfully implemented SCPs; however, the variation in study outcomes suggests otherwise.

Despite these limitations, our study represents the largest survey to date of SCP implementation of which we are aware and reflects the engagement of diverse clinical stakeholders seeking to improve practice through understanding of facilitators and barriers. Qualitative work is needed to understand SCP implementation, with specific attention to contextual factors that can facilitate, inhibit, and otherwise shape implementation, including consistency and variation in implementation. Future studies should also identify models of SCP implementation emerging from our survey data, allowing us to assess relationships between these models and desired outcomes of SCP use; if SCP implementation influences effectiveness, extant RCTs may be inconclusive due to poor implementation, not SCPs' inherent (in)effectiveness.

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflicts of interest.

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