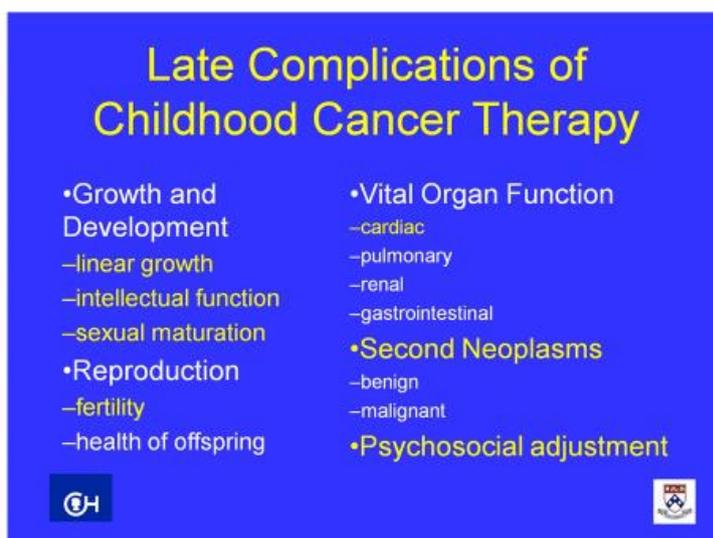


## Highlights of the 2017 Cancer Survivorship Symposium: Part 2

One of the key themes addressed during the Cancer Survivorship Symposium: Advancing Care and Research was monitoring for, managing and preventing the late effects of cancer treatment. This topic was covered during plenary presentations and breakout sessions as well as oral and poster presentations. The emerging importance of genetic findings in survivorship was also a topic of interest, with a number of interesting presentations given. This report summarises the information on these aspects of cancer survivorship which were shared during presentations and discussions.

### *Survivorship lessons from paediatric oncology*

The recipient of the Ellen L. Stovall Award, who gave the Keynote Lecture “Children Led the Way”, was Anna Meadows, Emeritus Professor from the Children’s Hospital of Philadelphia who started the first survivorship clinic for young adult survivors of childhood cancer in 1984. She reminded the audience that co-operative trials in childhood cancer began only in 1957, with early researchers criticised for causing distress to children who had no chance of a cure. **As gradual incremental improvements in survival were seen during the next couple of decades, the impact of the treatment itself on patients’ health became clear and the Late Effect Study Group was established in 1975, collecting data from patients treated across the US.**



Presented By Anna Meadows at Cancer Survivorship Symposium 2017

*Professor Meadows reminded the audience of the broad range of late complications of radiotherapy and chemotherapy which emerged, including retarded growth, toxicity to key organs – notably the heart – impaired fertility, second cancers and psychosocial issues.*

**This led to the coining of the phrase “Maximise the cure, minimise the cost” – a simple reminder that we need to follow patients carefully and regularly and for the long-term, detecting and addressing problems that arise.**

One of Dr Meadows’ main areas of interest has been the impact of cancer and its treatment on cognition and mental health. Observations from her group led to reductions in cranial irradiation dosage, enabling cognitive function to be preserved. **Professor Meadows reminded the audience that older children with cancer and the parents of young children with cancer can develop post-traumatic stress symptoms**, including avoidance of traumatic reminders, which can have the further consequence of leading to them being lost to follow-up.

**Setting the scene for further discussions throughout the meeting, Anna Meadows reminded the audience of the need to educate both survivor and provider to reduce late effects.** Survivors need education about healthy lifestyle behaviours including diet, exercise and smoking cessation, as well

as reproductive counselling and psychosocial support. In tandem, providers need to receive education about the late effects of cancer therapy and improve their ability to recognise and treat subclinical late effects.

### ***Focusing on survivorship in individual tumour types***

A breakout session chaired by Dr Bryan Bognar from the University of South Florida Morsani College of Medicine examined “Survivorship Care Basics” and focused on four different tumour types – colorectal cancer, head and neck cancer, breast cancer and prostate cancer.

### ***Close surveillance is key in colorectal cancer survivors***

Dr Crystal Denlinger from Fox Chase Cancer Center discussed colorectal cancer, highlighting that as of January 2016 there were 1.4 million survivors of colorectal cancer in the US. The 10-year survival is now 58%, with 47% rating their quality of life as good or excellent and many returning to work after treatment. **Recurrence is most likely during the first three years** (Sargent D et al, J Clin Oncol 2007). **Close surveillance is essential and carcinoembryonic antigen (CEA) levels should be tested every three months for the first two years then every six months for the next three years.** Colonoscopy should be performed after one year, three years and then every five years.

Various useful resources and guidelines are available to help physicians involved in the care of CRC survivors. These include the American Cancer Society CRC survivorship guidelines which are heavily geared towards primary care physicians (El-Shami K et al, CA Cancer J Clin 2015), a guideline from ASCO on the management of chemotherapy-induced peripheral neuropathy (Hershman DL et al, J Clin Oncol 2014), as well as the survivorship guidelines provided by NCCN.

### ***Bowel symptoms and neuropathy are common problems after CRC treatment***

**Bowel symptoms are a prominent long-term side effect observed in CRC survivors, being reported by 13-30% at five years after diagnosis.** Symptoms can include stool urgency and incontinence and can have a significant impact on quality of life. A poster on a survey of management of bowel dysfunction in long-term rectal cancer survivors found that **a range of behavioural adjustments were used to manage symptoms, including controlling meal portions, eating meals at regular times, not eating late or before bedtime and grazing,** as well as using a number of **supplements or medications to manage symptoms** (Sun V et al, Abstract 150).

**Oxaliplatin-associated neuropathy is commonly seen in CRC survivors.** While most cases are mild, it can be severe in some patients and affect functioning and global health status. **Opioids and gabapentin are not generally effective, but duloxetine has been shown to improve symptoms of painful neuropathy** (Smith E et al, JAMA 2013).

### ***Physical activity improves outcomes in CRC survivors***

Dr Denlinger highlighted that the benefits of exercise in survivors of colorectal cancer have been proven in randomised controlled trials. For instance, in 832 patients with Stage III colon cancer enrolled in the CALGB 89803 trial, **disease-free survival and overall survival were significantly improved in patients who undertook more hours of physical activity per week,** and the benefit was not significantly modified by sex, body mass index, number of positive lymph nodes, age, baseline performance status or chemotherapy received (Meyerhardt J et al, J Clin Oncol 2006). More recently, similar findings have been reported in the metastatic setting (Guercio B et al, Abstract 659, ASCO GI Cancers Symposium).

### Guidelines on management of CRC survivors

El-Shami K, Oeffinger KC, Erb NL, et al. American Cancer Society Colorectal Cancer Survivorship Care Guidelines. CA Cancer J Clin 2015; 65: 428-455. Available at:

<http://onlinelibrary.wiley.com/doi/10.3322/caac.21286/epdf>

NCCN Survivorship Guidelines. Available at:

[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

NCCN Colon Cancer Guidelines. Available at:

[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

NCCN Rectal Cancer Guidelines. Available at:

[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

Hershman DL, Lacchetti C, Dworkin RH, et al. Prevention and Management of Chemotherapy-Induced Peripheral Neuropathy in Survivors of Adult Cancers. J Clin Oncol 2014; 32: 1941-1967. Available at:

<https://www.asco.org/practice-guidelines/quality-guidelines/guidelines/patient-and-survivor-care#/9541>

### Head and neck cancer can have significant late effects

Head and neck cancer represents around 3% of all cancer cases, with 61 760 new cases in 2016. Overall death rates have been decreasing in the last three decades due to reduced smoking, but the incidence of HPV-related oropharyngeal cancer is increasing and patients tend to be younger, white males. **A good framework for measuring the specific late effects of head and neck cancer includes symptoms and signs related to head and neck-specific function, musculoskeletal impairment and general functional impairment** (Murphy B & Deng J, J Clin Oncol 2015; Cohen E et al, CA Cancer J Clin 2016).

**Long-Term Functional Deficits in H&N Cancer Survivors**

- Head and neck specific function
  - Lymphedema and fibrosis
  - Swallowing function
  - Ototoxicity
- General functional impairment
- Musculoskeletal impairment
  - Trismus
  - Neck and shoulder dysfunction
  - Postural abnormalities

ACS Survivorship Guideline 2016, Murphy, JCO 2015

Presented at 2017 Cancer Survivorship Symposium: Advancing Care and Research | #SurvOn17

*Sleep disorders are also common in patients with head and neck cancer and hypothyroidism has been reported in up to 50% of survivors. The NCCN recommend TSH testing every 6 to 12 months in all individuals who received head and neck radiation as part of their treatment.*

Presented By Mary McCabe at Cancer Survivorship Symposium 2017

**Surveillance in head and neck cancer survivors is tailored according to age, specific diagnosis and treatment received, but in general follow-up is needed every three months for the first two years, then every six months for the next three years, then annually.** Patients need education about signs and symptoms of recurrence and advice about smoking cessation is key (Cohen E et al, CA Cancer J Clin 2016).

### Guidelines on management of head and neck cancer survivors

Cohen E, et al. American Cancer Society Head and Neck Cancer Survivorship Care Guideline. CA Cancer J Clin 2016; 66: 203-239. Available at: <http://onlinelibrary.wiley.com/doi/10.3322/caac.21343/epdf>

NCCN Survivorship Guidelines. Available at:

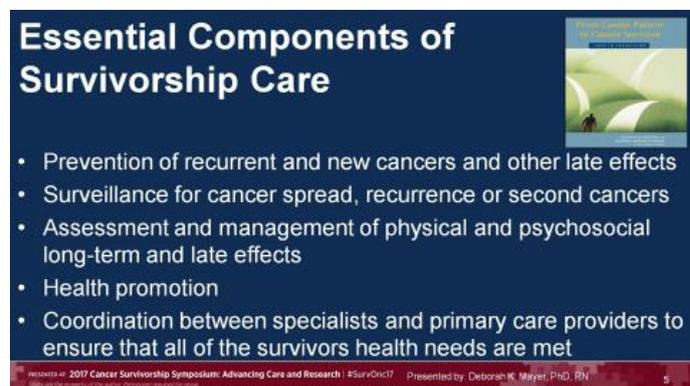
[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

NCCN Head and Neck Cancers Guidelines. Available at:

[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

## Breast cancer survivorship care is complex

Presenting on the topic of breast cancer survivorship, Dr Deborah Mayer from the University of North Carolina and Chapel Hill began by reminding the audience that there were 246 660 new cases of breast cancer in the US in 2016 and a prevalence of >3.5 million. There are a number of essential components of survivorship care for women with breast cancer and several guidelines are available.



**Essential Components of Survivorship Care**

- Prevention of recurrent and new cancers and other late effects
- Surveillance for cancer spread, recurrence or second cancers
- Assessment and management of physical and psychosocial long-term and late effects
- Health promotion
- Coordination between specialists and primary care providers to ensure that all of the survivors health needs are met

Presented at 2017 Cancer Survivorship Symposium: Advancing Care and Research #SurvOnc17 Presented by Deborah K. Mayer, PhD, RN

Presented By Deborah Mayer at Cancer Survivorship Symposium 2017

*NCCN and ACS/ASCO (Runowicz C et al. J Clin Oncol 2016) provide very similar guidelines on breast cancer survivorship care. **All breast cancer survivors should be encouraged to have a healthy lifestyle – including a good diet, regular exercise, no smoking and moderate alcohol intake.***

Breast cancer survivors have, on average, five co-morbidities, with around two developing after diagnosis. These include obesity, diabetes, dyslipidemia, osteoporosis, arthritis and depression. Potential late effects include lymphoedema (discussed further below), hot flashes and night sweats, cognitive dysfunction, fatigue, fear of recurrence, financial toxicity, sexual dysfunction and sleep disturbance.

## Lymphoedema is a common late effect of cancer with a significant impact on patients' quality of life

**Lymphoedema is seen not only in breast cancer, but also a variety of other tumours including head and neck, melanoma, sarcoma and genitourinary cancers.** A recent study found that **42% of women with breast cancer and lymphoedema report that lymphoedema impacted their work performance** (Boyages J et al, SpringerPlus 2016). Results of the CALGB (Alliance) 70305 study on the effects of exercise and education on the incidence of lymphoedema in survivors of breast cancer were reported at the meeting (Paskett E et al, Abstract 104). Disappointingly, there was no difference between treatment arms in the number of women who were free of lymphoedema (84% with education only and 81% with education and exercise). Dr Ann Partridge from the Dana-Farber Cancer Institute speculated on possible causes and reminded the audience that, since the trial began in 2006, data have been published showing that **progressive weight lifting can help improve the symptoms of lymphoedema in breast cancer survivors** (Schmitz K et al, N Engl J Med 2009).

### Guidelines on management of breast cancer survivors

Runowicz CD, Leach CR, Lynn Henry N, et al. ACS/ASCO Breast Cancer Survivorship Care Guideline. J Clin Oncol 2016; 34: 611-635. Available at: <https://www.asco.org/practice-guidelines/quality-guidelines/guidelines/breast-cancer/#/9526>

NCCN Survivorship Guidelines. Available at:

[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

NCCN Breast Cancer Guidelines. Available at:

[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

NCCN Breast Cancer Risk Reduction Guidelines. Available at:

[https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

A summary of information presented at the 2017 Cancer Survivorship Symposium: Advancing Care and Research, co-sponsored by AAFP, ACS and ASCO, 26-27 January 2017, San Diego, CA, USA

## Prostate cancer survivors need careful follow-up for late effects

Dr Mark O'Rourke from Greenville Health System Cancer Institute focused on prostate cancer, noting that it accounts for 45% of all male tumours in the US and affects around 3.3 million men.

**Seven Prostate Ca Survivor Symptoms**

- Impotence
- Incontinence
- Bowel problems
- Breast Changes
- Loss of libido
- Hot flashes
- Fatigue

Gavin et al. British Journal of Urology International 2015; 116:397-406

Presented by Mark O'Rourke, M.D. GREENVILLE HEALTH SYSTEM

*As highlighted in a recent publication, there are a number of prominent symptoms which can affect prostate cancer survivors, with three major late effects being impotence, incontinence and bowel problems.*

Presented By Mark O'Rourke at Cancer Survivorship Symposium 2017

The ACS have provided prostate cancer survivorship guidelines (Skolarus T et al, CA Cancer J Clin 2014) which highlight the impact of prostate cancer treatment modalities on sexual function and advise that validated surveys such as the 5-item Sexual Health Inventory for Men survey (SHIM) or the Expanded Prostate Cancer Index Composite for Clinical Practice (EPIC-CP) should be used annually. Advice on stopping smoking and moderate alcohol intake should be given and pharmacological interventions are often effective.

**For surveillance, survivors of prostate cancer should have PSA levels tested every 6 to 12 months for the first five years and then annually thereafter.** The recent ACS guideline highlights that primary care physicians and treating oncology specialists should confer regarding the survivorship care plan components and determine roles and responsibilities that are appropriate for the patient's condition and the resources available in the primary care setting (Skolarus T et al, CA Cancer J Clin 2014).

### Guidelines on management of prostate cancer survivors

Skolarus TA, Wolf AMD, Erb NL, et al. American Cancer Society Prostate Cancer Survivorship Care Guidelines. CA Cancer J Clin 2014; 64: 225-249. Available at: <http://onlinelibrary.wiley.com/doi/10.3322/caac.21234/epdf>  
NCCN Survivorship Guidelines. Available at: [https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)  
NCCN Prostate Cancer Guidelines. Available at: [https://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](https://www.nccn.org/professionals/physician_gls/f_guidelines.asp)

## The increased detection of thyroid cancers through screening programmes has significant implications for survivors

Another tumour type discussed during the meeting was thyroid cancer. An oral presentation was given by Dr Dong Wook Shin from the Cancer Survivorship Clinic at Seoul National University Hospital in Korea (Abstract 105). A retrospective cohort study using the Korean National Health Insurance Database which covers 97% of the Korean population found **a higher risk of CHD (HR 1.15, 95% CI 1.10, 1.22) and ischaemic stroke (HR 1.15, 95% CI 1.10, 1.22) in patients who had been treated for thyroid cancer vs controls and the risk was marked for those who had undergone total**

**thyroidectomy and who were on a higher dose of thyroxine.** In discussing Dr Shin's data, Dr Wendy Landier from the University of Alabama at Birmingham noted that the thyroid cancer "epidemic" comprises largely clinically occult papillary carcinomas detected through the national cancer screening programme and advised that **it will be important to follow this cohort of survivors as they age, assess costs to patients and healthcare systems and determine the implication of these findings for cancer survivors being monitored for secondary thyroid tumours.**

A poster from Dr Brenna Blackburn and colleagues at the Huntsman Cancer Institute, University of Utah, reported data from 3706 patients in Utah who were diagnosed with thyroid cancer between 1997 and 2012, comparing them with a 15 847 matched non-cancer controls (Abstract 111). **Survivors diagnosed with thyroid cancer before the age of 40 were five times more likely to develop peri-, endo- or myocarditis or cardiomyopathy, and more than twice as likely to develop heart valve disorders, compared with matched controls.** Younger thyroid cancer survivors were also more likely than matched controls to have other heart conditions and to develop osteoporosis.

### ***Genetic assessment is a key aspect of survivorship care***

The first plenary session of the meeting focused on genetic findings in survivorship. **This field is rapidly evolving in a similar way to the genetically-driven treatment approaches in many tumour types including lung cancer and breast cancer.** Dr Angela Bradbury from the Perelman School of Medicine at the University of Pennsylvania highlighted that **genetic assessment is a key part of survivorship care, noting the emergence of multi-gene panel testing and the importance of discussing benefits and risks of testing with patients and families.** There are many factors to consider and a genetic counsellor can be a valuable resource. Dr Bradbury noted the recent advances in tumour profiling which are allowing direct or indirect identification of inherited variants. This provides a further challenge for discussions with patients and families, with **a particular conundrum being the treatment of samples given in the past by cancer survivors, in which it may now be possible to detect a germline mutation.** A statement provided by the ACMG (Green R et al, Genet Med 2013) provides a minimum list of 56 genes which should be reported as incidental findings, but this has caused controversy.

This session nicely illustrated the complexity of genetic testing in cancer, highlighting that this is a fast-moving field where definitive recommendations can be difficult to make. This was exemplified during a panel discussion around the topic of potentially retesting patients as new data emerge. **For those survivors who "do not do well with uncertainty" it may be pragmatic to confine testing only to those genetic findings which will definitively guide treatment.**

## How should oncology providers proceed?

- **Recognize the potential to identify inherited risk**
  - Understand the potential for incidental/secondary findings
  - Have discussions with patients in advance
  - Understand the options & patient preferences
  - Identify genetic referral resources



Bradbury, Robson, McCormick. ASCO Daily News, 2014

Abstracts of 2017 Cancer Survivorship Symposium: Advancing Care and Research | #SurvOn17

Presented by: Angela R. Bradbury, MD

Presented By Angela Bradbury at Cancer Survivorship Symposium 2017

### Guidelines on genetic testing and reporting

Green RC, et al. ACMG recommendations for reporting of incidental findings in clinical exome and genome sequencing. *Genet Med* 2013; 15: 565-574. Available at:

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Murphy BA, Deng J. Advances in Supportive Care for Late Effects of Head and Neck Cancer. *J Clin Oncol* 2015; 33: 3314-3321.

Schmitz KH, et al. Weight lifting in women with breast-cancer-related lymphedema. *N Engl J Med*. 2009; 361: 664-673.

Sargent DJ, et al. End points for colon cancer adjuvant trials: observations and recommendations based on individual patient data from 20,898 patients enrolled onto 18 randomized trials from the ACCENT Group. *J Clin Oncol* 2007; 25: 4569-4574.

Smith EM, et al. Effect of duloxetine on pain, function, and quality of life among patients with chemotherapy-induced painful peripheral neuropathy: a randomized clinical trial. *JAMA* 2013; 309: 1359-1367.

Runowicz CD, et al. American Cancer Society/American Society of Clinical Oncology Breast Cancer Survivorship Care Guideline. *J Clin Oncol* 2016; 34: 611-635.