

Abstracts of the 2015 World Congress of Psycho-Oncology, 28 July - 1 August 2015, Washington, DC, USA

Symposia and Oral Abstracts

S1-1

Peer support as a clinically sponsored intervention

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Reach to Recovery International

BACKGROUND/PURPOSE: History has shown that patients facing serious illness tend to seek emotional support and information from others who have experienced similar circumstances. **METHODS:** We will describe the historic underpinnings and evolution of peer-support programs in cancer care and will examine the impact of peer support programs on cancer patients and survivors and the face-value efficacy of such programs as effective interventions. **RESULTS:** Although the effects of peer-support programs are difficult to quantify using traditional research methods and more research is needed, existing studies have established that the great majority of cancer patients who participate in established, accredited peer-support programs, in contrast to those patients who do not, report higher levels of satisfaction with their medical care and lower levels of anxiety and distress. In addition, such programs are generally welcomed by patients and can be delivered cost effectively. **CONCLUSIONS:** Effective peer support can play an important role in helping cancer patients understand and cope with their diagnoses, symptoms, treatment, side effects, and survivorship, and can be delivered at minimal cost.

Research Implications: Based on the well-established, positive effects of peer support, as well as its cost effectiveness, we propose that peer support should play an integral role in cancer care as an established component of every clinical cancer-care program.

Practice Implications: In order to encourage the integration of peer support into all clinical cancer-care programs, researchers must develop effective methods of evaluating and measuring the impact of peer-support programs.

Acknowledgement of Funding: None.

S1-2

Maximising effectiveness in peer support: practical considerations

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BACKGROUND/PURPOSE: Peer support is ubiquitous as a collective human response to difficulty. However, in the cancer context and by comparison to professionally led models, peer support is under-represented in research and within formal healthcare services, and is not well explained. **METHODS** Theoretical approaches to understanding peer support, and from these developing strategies to maximise effectiveness, include health service models, social psychology, and community action. **RESULTS** First, health service models focus on access and cost effectiveness and provide direction for volunteer management strategies to build skills, commitment, and role satisfaction, thereby supporting volunteer recruitment and retention. Second, social psychological models, such as social comparison and social identity, suggest that the personal profiles of those who both seek and provide peer support will be important for the motivations, establishment, and the effectiveness of a peer support intervention. Third, if peer support is conceptualised as a participatory action, the scope of activity widens to include community activism, bringing both opportunity and threat for formal health service providers. Taking a trans-theoretical approach, we propose a pragmatic model for peer support delivery in the context of cancer that considers the peer and the patient/carer as the centre of a system of dynamic and inter-connected allegiances and cleavages. **CONCLUSIONS** Effective peer support programmes that build on these tensions can be expected to be maximally effective but will require fluid and action-oriented systems.

Research Implications: This presentation will provide articulation points for researchers seeking to evaluate the impact of peer support in cancer and for designing methodologies underpinned by theory that matches how peer support is expressed and consumed.

Practice Implications: The model presented will help guide practitioners working in oncology to develop sustainable peer support programmes.

Acknowledgement of Funding: None.

S1-3

Putting peer support online: the importance of Internet literacy

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BACKGROUND/PURPOSE: Internet peer support groups (IPSGs) to help people cope with cancer are widespread, but there is scant evidence on their efficacy. Using data from an RCT of breast cancer IPSGs, this study examined how Internet literacy (IL) might influence IPSG engagement and efficacy. **METHODS:** Women treated for localized breast cancer within the past 3 years were recruited using a tumor registry and randomized to one of two types of facilitated 6-week IPSGs, one emphasizing supportive-expressive behaviors and one emphasizing prosocial behaviors. Measures included depression and anxiety symptoms, computer anxiety, mood during chat sessions, amount of posting, and difficulties using the website. **RESULTS:** Controlling for pre-intervention symptoms, lower IL was associated with higher post-intervention depression and anxiety symptoms ($ps < .05$). Lower IL was associated with higher computer anxiety, greater negative mood during chat, less posting during chat, and more difficulties using the website (all $ps < .05$). Ratings of the helpfulness of the IPSG user's guide and facilitators were highest among users with low IL. **CONCLUSIONS:** To our knowledge, this is the first study linking IL to IPSG efficacy. Participants with lower IL had greater anxiety and depression after participating in an IPSG than their peers with relatively high IL. Lower IL predicted general computer anxiety and difficulties using the website, which may account for poorer mood when chatting online and less overall improvement in psychological symptoms post-intervention. IPSGs may prove to be more accessible and beneficial to cancer patients if they include support, training, and navigation in using the support group features.

Research Implications: Internet literacy should be taken into account when designing and recruiting for Internet peer support groups, as it may limit who enrolls in, engages in, and benefits from such groups.

Practice Implications: Providing training and support to cancer patients so that they can effectively and confidently use the Internet could greatly enhance access to and potential benefit from the many IPSGs that are available.

Acknowledgement of Funding: Supported by National Institutes of Health Grant No. R21CA15877.

S1-4

The role of peer support for physical well-being after cancer

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BACKGROUND/PURPOSE: This presentation is part of a symposium focusing on the role of peer support in survivorship care. Lifestyle interventions have been shown to be safe and effective in improving survivors' physical health. However, such programs are challenging to implement in community settings. The use of peer volunteers has been identified as a potentially accessible, affordable, and effective approach to extend the reach of interventions. **METHODS:** A systematic review of the literature addressed study design, data sources, sample characteristics, risk of bias, intervention methods, and synthesis of conclusions. **RESULTS:** Scant but emerging evidence indicates peers can effectively deliver lifestyle interventions, increasing survivors' physical activity and improving their physical health. Data from an RCT using ACS Reach to Recovery Volunteers as coaches will be presented, along with supporting evidence from other peer support research. **CONCLUSIONS:** Trained peer volunteers may enhance translation of cost-effective interventions in community settings and improve maintenance of physical activity gains. Increased focus on training and supervision of peers and matching peers and participants may increase utilization of peers as coaches. In addition, the coaches themselves may benefit from delivering interventions.

Research Implications: Future studies should include peer volunteers in interventions to cancer survivors, aiding the translation of interventions from clinical to public health settings, maximizing dissemination and implementation in the community, exploring utility of e-health technologies, and investigating maintenance of achieved behavior changes.

Practice Implications: Lifestyle interventions for cancer survivors are safe and effective. Use of peer volunteers to deliver interventions represents a new and emerging approach to increase dissemination and potentially control costs.

Acknowledgement of Funding: This research was supported by the National Cancer Institute (R01 CA132854) and intramural funding from the American Cancer Society.

S2-1

Developing an Internet-based intervention for cancer-related male sexual problems

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BACKGROUND/PURPOSE: Over 3.5 million male cancer survivors in the United States have sexual dysfunction. Problems include erectile dysfunction (ED) and also loss of sexual desire, alterations in orgasm, and pain or incontinence during sex. *hardtimes: Cancer and Men's Sexual*

Health is an Internet intervention that educates about sexual side effects of cancer treatments, guides men and partners in choosing treatment options for ED, presents cognitive-behavioral sex therapy exercises, and includes videotaped patient stories. **METHODS:** Eighty-five men seeking help from a urologist in a cancer center were randomized to usual care or to access *hardtimes* and receive up to 6 h of phone coaching. Self-report questionnaires were completed at baseline, and 12 and 24 weeks. **RESULTS:** With 64% having completed participation, 11% dropped out and average web site usage is 56 min (range 1–214). Multivariable analyses will test the hypothesis that duration of web site usage and phone coaching predict improvement in sexual function/satisfaction. Program ratings and usability testing are complete. A large pragmatic trial will begin in 2015 of an updated site optimized for use on mobile devices, with improved navigation and search features. **CONCLUSIONS:** Creating an evidence-based Internet intervention requires repeated evaluations of both patient engagement and efficacy. Only a subgroup of men can change focus from a mechanical fix for ED to broader goals of better sexual communication and satisfaction.

Research Implications: Men have a variety of unmet needs relating to sexual problems that depend on recency of diagnosis and desire to prevent or improve an actual sexual dysfunction. Cultural and relationship issues are also highly relevant. The value of an Internet-based intervention is not only based on efficacy to improve behavior and emotional distress, but also on ease of use, actual engagement with the intervention, and ratings of whether it is helpful.

Practice Implications: A comprehensive Internet intervention for cancer-related sexual problems in men can reduce barriers to finding timely information and effective professional help. It can be used as self-help or supplemented with telehealth counseling. The program also provides a cost-effective tool for training oncology health professionals to do a better job of assessing and providing treatment for sexual problems.

Acknowledgement of Funding: This research was funded by STTR 4R42 CA139822 (Martinetti PI, Schover sub-contract PI), including an administrative supplement.

S2-2

Using web-enabled technology to support men with prostate cancer: PROSTMATE

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BACKGROUND/PURPOSE: Access to appropriate information and support remains problematic for many men

diagnosed with prostate cancer, especially in rural and remote areas of Australia. We have developed an online clinical support program, PROSTMATE, which aims to overcome these barriers to access. PROSTMATE is a secure portal that provides a platform to access web-based consultations with nurses and psychologists, tailored information, a place to record treatments, test results and appointments, online tracking tools and self-directed support programs to improve health and well-being. **METHODS:** PROSTMATE (www.prostmate.org.au) is freely accessible to men affected by prostate cancer, their families and others interested in prostate cancer. PROSTMATE was launched in November 2013, and we have monitored its uptake, user engagement and participant feedback. The system collects patient-reported outcomes and provides clinical alerts to clinicians when problems are identified. **RESULTS:** Over 1100 people have registered. 72% of members are from metropolitan areas and 22.5% from regional or remote areas. The majority of members (56.5%) are men who have been diagnosed with prostate cancer. Self-reported problems at registration indicated that 17.2% of men with prostate cancer reported at risk levels of mood problems and 41.4% reported at risk levels of sexual intimacy problems. 23.5% of partners reported at risk levels of relationship problems, and 41.2% reported at risk levels of sexual intimacy problems. Telehealth consultations have steadily grown and appear to be an acceptable delivery mode for men and their families. Barriers to implementation of this program will be discussed. **CONCLUSIONS:** PROSTMATE shows promise in supporting men and their families by offering access to specialist prostate cancer nurses and allied health services supported by online assessment tools and clinical alerts. This paper will explore how PROSTMATE could provide a novel way of improving care, overcoming access barriers including geography and stigma, and the potential benefits of the integration of these systems into routine care.

Research Implications: The integration and use of this system has potential to collect a large amount of patient outcome and patterns of use data. We are currently evaluating the use of this program in clinical practice and hope that it offers a new and efficient model of care.

Practice Implications: Delivery of clinical nursing and allied health care with the assistance of this web-based program provides benefits and challenges. Patients have improved access to services despite geographic location, and remote monitoring of patient-reported outcomes online have the potential to enhance follow-up care and referrals to appropriate services. However, integration of this system into current models of care poses challenges for clinicians, and this will be discussed.

Acknowledgement of Funding: This program has been co-funded by philanthropic and industry supporters.

S2-3

Psychological assessment via Internet

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BACKGROUND/PURPOSE: The Internet is being used in many areas as a critical tool in health-related issues. It has yielded a network parallel to the “real” one. Given this, we must be sure psychooncological work through the Internet is right. One important topic is assessment. While data suggest that online assessment is reliable, specific validation of online measures is required. **METHODS:** Our foundation has had a presence on the Internet since 1996 (www.fefoc.org). Since 2008, we have created four specific websites related to our more sound areas of work in the cancer field (breast, prostate, older and relative) with all including some form of psychological assessment. We have included in our breast and prostate cancer sites a psychological assessment space for patients using two sound questionnaires in psychooncology (HADs and MiniMAC). **RESULTS:** Taking our previous work into account, we have found some differences in cancer Internet users who participated in the psychological assessment activity: Online data are completed by younger patients or relatives, and Internet patients tend to be more unsatisfied with medical care and societal consequences (e.g., work and friendship). Our prostate and breast cancer websites were designed similarly; however, there is a gender trend profile in which men appear to be more reluctant to participate in online surveys. Also, when we analyze consultation profiles, we find they are more prone to consult medical areas, preventive and early detection topics and the glossary of medical terms. Women participate much more in psychological assessment questionnaires and more frequently visited topics related to emotional, couple and social issues and take part in interactive activities (sharing experiences with other women). After 7 years, we have data from 631 breast cancer patients (mean age=44 years). 66% showed clinical significant levels of anxiety, 34.3% depression and 50% distress. In our work, we conclude that both questionnaires are appropriate for to Internet delivery. We have fewer participants from the prostate cancer website ($N=280$). 199 filled out the HAD questionnaire, but only 17 completed the MiniMAC scale. The mean age of these men is 59 years, and their participation in this assessment (meaning HAD completion) is mostly from the last few years of our work (particularly from the last 2 years). We will analyze the Internet assessment properties and differences in virtual versus pen-and-paper profiles as a way to confirm online validity. In both samples, there is a trend to be younger when compared with general data known about these illnesses. **CONCLUSIONS:** We must

work to have reliable online psychological assessment. We have a huge sample of breast cancer patients but a smaller number of prostate cancer patients, perhaps due to the male profile when coping with illness. However, we are experiencing an increase in men participating in completing questionnaires online, so we believe that future gender and age biases will be overcome.

Research Implications: Research demonstrates that Internet-based assessment is reliable. It is important that there are not biases posed by the Internet using profiles.

Practice Implications: We need reliable assessment tools, similar to pen-and-paper ones, to further establish psychooncological interventions and research.

Acknowledgement of Funding: None.

S2-4

Web-based decision aids to support young women with breast cancer

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BACKGROUND/PURPOSE: Young women with breast cancer have poorer prognosis, greater lifetime risk of local and contralateral recurrence, and distant disease, regardless of surgery received. Treatment-related concerns of younger women differ from those of older women resulting in specific information needs. We report the findings of a qualitative study to determine what information young women require to support surgical treatment decisions. A systematic review will increase our understanding of information needs regarding genetic testing at diagnosis. These study findings will inform the development of web-based decision aids. **METHODS:** Women with a diagnosis of BC ≤ 40 years old were recruited from three UK hospitals. Information required by women during the time of surgical decision-making was identified in 20 in-depth, semi-structured interviews and further explored in two focus groups. We are conducting a systematic review to identify information available to support the needs of women who may be offered genetic testing at diagnosis. **RESULTS:** During interviews and focus groups, information that young women identified as important in making surgical decisions included types of tumors, cosmetic outcomes of surgery, reconstruction, and consequences of clinical and hormonal treatments. Information was felt to be inadequate in the areas of timing and option for reconstructive surgery, effects of

treatment on fertility, and issues around genetic predisposition/testing. Preliminary findings from our systematic review will also be presented. **CONCLUSIONS:** Young women identified information relevant to them at the time of treatment decision-making for early BC. We will now develop and test web-based decision aids to support decisions in surgical decision-making and genetic testing.

Research Implications: Our research has demonstrated that younger women's needs are not being met by existing resources and there is a need to develop and test evidence-based decision aids.

Practice Implications: Tailoring web-based decision aids to the needs of younger women is expected to help women make more informed decisions about their surgical treatment and whether to have a genetic test. As a complement to their clinical care, women will be helped to think through the issues and potential consequences as part of their decision making. The aim is to help women feel more confident in their decisions and reduce decisional conflict.

Acknowledgement of Funding: NIHR Research for Patient Benefit Programme and Breast Cancer Campaign.

S3-1

ACCC's overview of psychosocial distress screening in the community cancer setting

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Association of Community Cancer Centers

BACKGROUND/PURPOSE: The Association of Community Cancer Centers (ACCC) promotes the entire continuum of quality cancer care for our patients and our communities. For more than 40 years, ACCC has been helping the multidisciplinary oncology team adapt to the complex changes of delivering quality cancer care. Approximately 20,000 cancer care professionals from 1900 hospitals and practices nationwide are members of ACCC.

Over the last decade, great strides have been made in understanding the psychosocial needs of cancer patients and their caregivers. Yet, even as the body of knowledge has continued to grow and standards have been put in place by organizations like the Commission on Cancer (CoC) and others, many community-based cancer programs around the country are struggling with *implementing* psychosocial services—in particular, distress screening.

To address our members' needs in developing, integrating, and sustaining distress screening programs, ACCC has partnered with APOS in creating a pilot project to identify three programs from across the country that have successfully implemented distress screening programs. This project will be conducted in four phases with two

key deliverables: a white paper and a dedicated web page for each of the three sites.

The project's ultimate goal is to make the distress screening program models, including tools and resource information available to oncology programs nationwide to help them ramp up their distress screening programs.

METHODS:

- Phase I. Survey—ACCC and APOS conduct survey to identify three sites.
- Phase II. Qualitative Interviews—We will visit each of the identified sites to perform qualitative interviews with their multidisciplinary cancer care teams. During these site visits, we will gather tools and insights.
- Phase III. White Paper—Codify and analyze tools and insights from site visits.
- Phase IV. Share—Develop web pages to share three different distress screening models. Sites will share tools and serve as resource to their peers.

RESULTS:

- Survey ACCC membership's distress screening programs
- Identify three sites with successful distress screening programs to visit
- Conduct qualitative surveys at each site
- Codify tools and insights to create white paper
- Sites' distress screening programs to serve as models

CONCLUSIONS: This program will provide community cancer centers with resources and tools to help them implement and/or improve distress screening programs.

Research Implications: The data gathered by the survey could provide baseline data for distress screening programs in community cancer centers.

Practice Implications: The purpose of this project is to support oncology healthcare providers as they develop, implement, and/or improve their distress screening programs.

Acknowledgement of Funding: Funding and support provided by Pfizer Oncology.

S3-2

What can we learn from model programs for distress screening?

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BACKGROUND/PURPOSE: The collaborative project between ACCC and APOS included site visits to selected

cancer centers with model distress screening programs. The goals of the site visits were to explore and document what makes these model programs successful. The information and tools gathered will be made available on the ACCC website as a resource for other community cancer programs. **METHODS:** The three model programs were selected as previously described. The site visit team included two psychologists (Teresa Deshields from Siteman Cancer Center and Lynne Padgett from the National Cancer Institute) and a social worker (Bradley Zebrack). The team interviewed key personnel supporting and implementing the distress screening program, the psychosocial representative on the facility's cancer committee, and key leadership of the cancer center (the top executive of the cancer center and the leader of quality and compliance activities). **RESULTS:** Data gathered from the site visits included the processes and tool(s) used for screening. We learned about training for staff involved in distress screening as well as education of patients and families regarding the process. We examined referral pathways for patients with positive screens and whether internal and/or external resources were utilized to address patients' concerns. Finally, we explored challenges related to distress screening that were identified and resolved by the site, focusing on solutions that were successful. **CONCLUSIONS:** Challenges for distress screening differed by site, but these differences provide breadth in the information gathered and made available as a resource to other community cancer centers. Successful methods will be shared during this presentation.

Research Implications: The methods and results of this project may be useful to those doing research in program evaluation in general, or specifically in distress screening.

Practice Implications: The lessons learned from the site visits may be helpful to those responsible for distress screening in their setting.

Acknowledgement of Funding: Pfizer Oncology.

S3-4

Distress screening from paper/pencil to EHR integration

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BACKGROUND/PURPOSE: The American College of Surgeons Commission on Cancer (CoC) has set psychosocial distress screening as a new patient care standard for 2015. The standard requires accredited programs to implement a systematic distress screening protocol for all cancer patients and provide appropriate follow-up and

referral when indicated. In 2011, the UT Southwestern Simmons Cancer Center began systematic screening with a paper/pencil instrument. In 2015, distress screening was integrated into the EHR. The purpose of this presentation is to explain each process and provide participants with data to consider as they develop or improve distress screening. **METHODS:** This presentation will present each distress screening protocol as well as discuss how each of the relevant processes influences follow-up and referral. **RESULTS:** Data gathered from each screening process will be presented. This includes the total number of patients screened per month as well as frequencies and percentages of positive distress scores and referral to appropriate psychosocial professionals. **CONCLUSIONS:** Distress screening is an achievable goal. However, systematic screening—with follow-up and referral—requires trained professionals as well as programmatic support.

Research Implications: Research implications include measurement of programmatic adherence to distress screening as well as adherence to follow-up and referral when indicated. Secondly, measuring patient adherence to follow-up recommendations and the impact of psychosocial interventions for those who screen positive for distress are important areas for investigation.

Practice Implications: The lessons learned from two different processes of distress screening may be helpful to those responsible for distress screening in their setting.

Acknowledgement of Funding: None.

S3-5

What does an optimal model for distress screening look like? Developing selection criteria to determine best practice

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BACKGROUND/PURPOSE: As part of the collaborative project between the Association of Community Cancer Centers (ACCC) and American Psychological Association (APOS) to identify model programs in cancer distress screening, selection criteria were needed. While there is a wealth of material in the form of accreditation standards, reports, and guidelines from professional organizations, no standardized definition of a 'model' program exists. **METHODS:** The APOS task force surveyed a broad range of materials and tools to design a selection method for model sites and developed model site selection criteria

based on consensus. Criteria were reviewed to ensure capture of model programs using a variety of screening programs as well as a variety of cancer center settings (e.g., rural and academic). **RESULTS:** The task force used the following materials to design a survey, which was administered to the 40 nominated sites: (1) questions based on the American College of Surgeons Commission on Cancer (CoC) psychosocial distress screening standard; (2) selections from the NCI Community Cancer Centers Program Psychosocial Matrix; (3) program description (e.g., personnel and measures); and (4) percentages of patients screened. The three selected model sites were selected using results from this survey and demonstrated high performance using a variety of strategies. **CONCLUSIONS:** While there are a variety of recommendations for distress screening, there are fewer examples of program development and evaluation. The selection criteria developed for this project can serve as guide for both individual program evaluation and comparison of programs.

Research Implications: Research is needed to identify the key components of effective programs, particularly from a multi-level perspective including patient, provider, and system variables.

Practice Implications: Developing the criteria for these model sites provides structure for both program development and strategic planning in the clinical setting.

Acknowledgement of Funding: The program was supported by Pfizer Oncology.

S4-1

Social support, health, and recurrent breast cancer: understanding psychological and biological mechanisms

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BACKGROUND/PURPOSE: Prognosis following recurrence is poor and associated with high symptom burden. Social support has been suggested as a protective factor that can influence health. The mechanisms by which social support influences health are largely unknown; psychological and biological variables are hypothesized to influence this process. The present longitudinal study examined whether psychological distress and neuroendocrine/immune variables mediated the relationship between social support and health for women with recurrent breast cancer. **METHODS:** Women with recurrent breast cancer ($N=99$) were accrued. Social support was assessed at baseline via structural (Social Network Index) and functional (Perceived Support from Family scale) support measures. Psychological distress, plasma

cortisol and norepinephrine, T-cell blastogenesis, and natural killer cell cytotoxicity were assessed at 4 months. Two composite health variables were assessed at 12 months: self-reported, subjective and nurse-assessed, objective ratings of health. Multiple imputation with bootstrap mediation was used to obtain point estimates and bias-corrected confidence intervals. **RESULTS:** Women with greater structural and functional support following recurrence had lower levels of psychological distress at 4 months, and women with lower distress at 4 months experienced better health at 12 months based on both subjective and objective measures. Social support indirectly influenced health through its effect on distress; bias-corrected confidence intervals were entirely below zero. There was no evidence that social support influenced health independent of its effect on distress. **CONCLUSIONS:** Psychological distress but not neuroendocrine/immune variables mediated the relationship between structural and functional support following recurrence and health at the 1-year follow-up. Clinical implications and intervention recommendations will be provided.

Research Implications: A focus on the process by which social support is associated with health is uncommon; studies have primarily examined the direct relationships between social support and health outcomes as well as psychological and biological variables. However, researchers have acknowledged the importance of and called for studies that directly examine the mechanisms linking social support to health outcomes. The present study addresses this gap in the literature and is the first of its kind to examine the process by which social support may be related to physical health outcomes among women with recurrent breast cancer, an understudied population of cancer survivors.

Practice Implications: Women with recurrent breast cancer who report low levels of structural or functional support at recurrence may be important targets for interventions. The results of the present study suggest that interventions designed to strengthen women's support networks and abilities to receive and utilize available support may have long-term benefits for improving psychological distress and physical health.

Acknowledgement of Funding: This research was supported by grants from the American Cancer Society (PBR-89 and RSGPB-03-248-01-PBP), the Longaberger Company-American Cancer Society Grant for Breast Cancer Research (PBR-89A), the U.S. Army Medical Research Acquisition Activity Grants (DAMD17-94-J-4165, DAMD17-96-1-6294, and DAMD17-97-1-7062), the National Institute of Mental Health (MH51487), the National Cancer Institute (CA098133, CA92704, CA144024, and CA135005), and The Ohio State University Comprehensive Cancer Center (CA16058).

S4-2

The mediating effects of emotion regulation in cancer recurrence

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BACKGROUND/PURPOSE: Cancer progression/recurrence is a qualitatively different experience from an initial diagnosis of cancer. In particular, differences are seen in patients' affective experience: in such a chronic and life-limiting disease, the experiences of changing life goals, undergoing difficult medical treatments, and confronting mortality all evoke intense emotions. Research on emotion regulation processes is needed to understand the strategies that patients with recurrent cancer use to regulate their emotions. The purpose of this study is to test an emotion regulation model using longitudinal data from patients with breast cancer recurrence ($N=122$). **METHODS:** Participants completed measures of affect at diagnosis (Profile of Mood States, Center for Epidemiologic Studies Depression Scale, Beck Hopelessness Scale, and Life Orientation Test—Revised), measures of emotion regulation 4 months later (COPE Scale), and measures of quality of life (QoL) at 12 months (Medical Outcomes Study—Short Form). Bootstrapped mediation analyses examined the indirect effect of two emotion regulation strategies, engagement and disengagement, on the relationship between affect at diagnosis and QoL at 12 months. **RESULTS:** Both positive and negative affect significantly predicted later QoL ($p < 0.05$); the direct path remained significant in mediating models involving negative affect. Regarding mediation, significant effects ($p < 0.05$) were found for both engagement and disengagement. Greater use of both emotion regulation strategies was associated with higher QoL 1 year later. **CONCLUSIONS:** This study is the first to examine emotion regulation in patients with recurrent cancer. These results highlight the important role of emotion regulation in this context. For this population, interventions designed to increase emotion regulation may improve QoL.

Research Implications: These mediating effects challenge the traditional conceptualization of disengagement coping strategies (denial, drug and alcohol use, and behavioral disengagement) as only maladaptive and of engagement coping strategies (active coping, planning, seeking instrumental support, and positive reframing) as only adaptive. Instead of emotion regulation techniques as being either 'good' or 'bad', it may be that in a context where high demand is placed on emotion regulatory resources, any form of emotion regulation derives benefit. These results suggest that both engagement coping and disengagement coping are useful in the context of recurrent cancer, regardless of one's initial affective experience.

Practice Implications: These results highlight the important role of emotion regulation in the context of chronic illness, particularly in relation to the initial affective experience. In working with patients with cancer recurrence, it is worthwhile to assess the initial affective experience of each individual in order to provide more focused emotion regulation interventions that may improve patients' QoL.

Acknowledgement of Funding: This research was supported by grants from the American Cancer Society (PBR-89 and RSGPB-03-248-01-PBP), the Longaberger Company-American Cancer Society Grant for Breast Cancer Research (PBR-89A), the U.S. Army Medical Research Acquisition Activity Grants (DAMD17-94-J-4165, DAMD17-96-1-6294, and DAMD17-97-1-7062), the National Institute of Mental Health (MH51487), the National Cancer Institute (CA098133, CA92704, CA144024, and CA135005), and The Ohio State University Comprehensive Cancer Center (CA16058).

S4-3

Test of mindfulness and hope components in a psychological intervention for women with cancer recurrence

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BACKGROUND/PURPOSE: Psychological interventions can attenuate distress and enhance coping for those with an initial diagnosis of cancer; there are few intervention options for individuals with cancer recurrence. To address this gap, we developed and tested a novel treatment combining Mindfulness, Hope Therapy, and biobehavioral components. **METHODS:** An uncontrolled, repeated measures design was used. Women ($N=32$) with recurrent breast or gynecologic cancers were provided 20 treatment sessions in individual ($n=12$) or group ($n=20$) formats. On average, participants were middle aged ($M=58$) and Caucasian (81%). Independent variables (i.e., hope and mindfulness) and psychological outcomes (i.e., depression, negative mood, worry, and symptoms of generalized anxiety disorder) were assessed pre-treatment and 2, 4, and 7 months later. Session-by-session therapy process (positive and negative affect, and quality of life) and mechanism (use of intervention-specific skills) measures were also included. **RESULTS:** Distress, anxiety, and negative affect decreased, whereas positive affect and mental health-related quality of life increased over the course of treatment, as demonstrated in mixed-effects models with the intent-to-treat sample. Both hope and mindfulness increased, and use of mindfulness skills was related to decreased anxiety. **CONCLUSIONS:** This

treatment was feasible to deliver and was acceptable to patients. The trial serves as preliminary evidence for a multi-component intervention tailored to treat difficulties specific to recurrent cancer. The blending of the components was novel as well as theoretically and practically consistent. A gap in the literature is addressed, providing directions for testing interventions designed for patients coping with the continuing stressors and challenges of cancer recurrence.

Research Implications: There are reliable differences between patients with an initial cancer diagnosis and those with recurrent cancer. Despite the high mortality rate of this latter population, longitudinal data collection extending 12 months and beyond is possible and, importantly, provides a trajectory regarding the biobehavioral outcomes and needs of these patients.

Practice Implications: The experience of a patient with recurrent cancer is unique. Rather than assuming that patients' needs are the same as those expressed at initial diagnosis, these need to be re-evaluated at disease recurrence. Preliminary evidence demonstrating the efficacy of manualized, tailored interventions is presented.

Acknowledgement of Funding: This research was supported by grants from the American Cancer Society (PBR-89 and RSGPB-03-248-01-PBP), the Longaberger Company-American Cancer Society Grant for Breast Cancer Research (PBR-89A), the U.S. Army Medical Research Acquisition Activity Grants (DAMD17-94-J-4165, DAMD17-96-1-6294, and DAMD17-97-1-7062), the National Institute of Mental Health (MH51487), the National Cancer Institute (CA098133, CA92704, CA144024, and CA135005), and The Ohio State University Comprehensive Cancer Center (CA16058).

S4-4

Depressive symptoms, goal engagement, and activity disruption in women with metastatic breast cancer

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BACKGROUND/PURPOSE: Women with breast cancer are at increased risk of depression, and the extent to which valued activities are disrupted by the disease is correlated with depressive symptoms in women with early-stage breast cancer. This association has not been examined in women with recurrent or metastatic cancer, and the temporal directionality of the relationship is unclear. Furthermore, the role extent of engagement in valued goals has received little study in the metastatic cancer context. The goal of the current study was to examine

longitudinal, reciprocal relationships of illness-related disruption of social and recreational activities, goal engagement, and depressive symptoms in a sample of women living with metastatic breast cancer. **METHODS:** Participants were 103 women diagnosed with metastatic breast cancer, at any point since diagnosis. Women completed validated measures of depressive symptoms, activity disruption, and goal engagement at study entry (T1) and 3 months later (T2). **RESULTS:** Activity disruption at study entry did not significantly predict changes in total depressive symptoms, symptoms of negative affect, or somatic symptoms, but disruption did predict a reduction in positive affect. Total depressive symptoms and negative affective symptoms at study entry predicted an increase in activity disruption. Extent of goal engagement was negatively correlated with depressive symptoms, but it did not predict change in symptoms over time. **CONCLUSIONS:** Depressive symptoms, specifically negative affective symptoms such as sadness, may exacerbate social and recreational activity disruption in women with metastatic breast cancer. Cancer-related activity disruption may, in turn, result in reductions in positive affect.

Research Implications: These results highlight the importance of examining specific constellations of depressive symptoms and their longitudinal relations with disruption of valued activities.

Practice Implications: Aiding women in maintaining valued activities may help to preserve enjoyment of life for women living with metastatic breast cancer.

Acknowledgement of Funding: Breast Cancer Research Foundation and California Breast Cancer Research Program.

S5-1

Developing a quantitative analytic plan that corresponds to study aims and design

Lara Traeger
 Massachusetts General Hospital

BACKGROUND/PURPOSE: This talk will present a straightforward approach to developing sound and feasible analytic plans for supportive oncology protocols. **METHODS:** We will examine a logical series of steps for selecting statistical tests and building models that facilitate hypothesis testing within the parameters of a study design. We will provide a review of statistical tests as well as an overview of advanced statistical modeling techniques, as applied to supportive oncology research methods. **RESULTS:** Participants will obtain practical strategies for developing rigorous quantitative analytic plans for supportive oncology

studies. **CONCLUSIONS:** Data analysis is a critical component of successful research. Practical strategies for developing a data analysis plan will help participants to effectively address study aims, test hypotheses and draw conclusions about study outcomes.

Research Implications: Participants will sharpen their ability to develop a quantitative analytic plan and, in turn, strengthen their study design and reliability.

Practice Implications: Through clinical research skills, including data analysis and planning, participants will be able to facilitate applications of more rigorous supportive oncology research findings to clinical settings.

Acknowledgement of Funding: NIH/NCI R25 CA181000-01.

S5-2

Performing a successful supportive care clinical trial

Jennifer Temel

Massachusetts General Hospital

BACKGROUND/PURPOSE: This lecture will review strategies for evaluating supportive care interventions that target patients and families, clinicians, and healthcare delivery systems. **METHODS:** We will utilize a 'lessons learned' approach to illustrate the essential tasks and steps to develop, implement, and complete a successful supportive care clinical trial. **RESULTS:** Trials of three interventions that focused on each of these targets will be examined, and the successes/failures and pros/cons to each strategy will be discussed. **CONCLUSIONS:** Participants will gain insights into how to best design supportive care intervention trials.

Research Implications: Understanding research methodology in supportive oncology is essential to perform high quality research.

Practice Implications: High quality supportive oncology research is necessary to change clinical practice.

Acknowledgement of Funding: None.

S5-3

Applications of behavioral theory and conceptual models in supportive oncology research

Joseph Greer

Massachusetts General Hospital

BACKGROUND/PURPOSE: Intervention development in supportive oncology requires the specification of a conceptual model of the relationships among factors

influencing patients' symptoms, health perceptions/behaviors, and treatment outcomes. **METHODS:** This presentation will focus on the most common theoretical models that clinical researchers employ in behavioral studies, such as the Biobehavioral Model of Cancer Stress and Disease Course, Health Belief Model, Theory of Planned Behavior, Social Cognitive Theory, and Transtheoretical Model of Behavior Change, among others. **RESULTS:** The goal of the presentation will be to illustrate the application of such models in conceptualizing the processes and targets of treatment as well as measuring salient patient outcomes. **CONCLUSIONS:** Behavioral theory and conceptual models are essential to the process of developing and testing evidence-based and clinically meaningful supportive care interventions in a methodologically rigorous manner. **Research Implications:** The presentation provides an overview of common theories and models used in supportive oncology research.

Practice Implications: Behavioral theory and conceptual models inform the development of evidence-based interventions that are implemented in clinical practice. Similarly, clinical practice informs the development, elaboration, and ecological validity of new and existing theories and models.

Acknowledgement of Funding: National Cancer Institute R25CA181000 (PI: Pirl).

S6-1

Family cancer caregivers' long-term adjustment to bereavement

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BACKGROUND/PURPOSE: A substantial number of families go through bereavement due to cancer, but little is known about the bereaved caregivers' long-term adjustment. This study aimed to document levels of bereavement outcomes (complicated grief, intense emotional reaction to the loss, depression, and life satisfaction) among family cancer caregivers and to predict those bereavement outcomes 3 to 5 years post-loss. **METHODS:** Family members participated in a nationwide survey for cancer caregivers 2 years after the relative's diagnosis (T1). Of those, 109 were identified as bereaved by 5 years post-diagnosis (T2), and of those, 71 participated at 8-year follow-up (T3), providing valid data for the study variables. Caregivers' demographics, risk factors for distress, and initial caregiving experience were measured at T1; satisfaction with palliative care and preparedness for the death of the patient at T2; and time since death of the patient at T2 or T3. **RESULTS:** Many family members displayed heightened levels of bereavement-related psychological distress

years after the loss. Hierarchical general linear modeling revealed that perceived preparedness for the death of the patient concurrently and prospectively predicted better adjustment to bereavement, independent of contributions of other factors studied. **CONCLUSIONS:** Findings underscore high prevalence of long-lasting bereavement-related distress among family cancer caregivers. Findings suggest integrative psychosocial programs designed to enhance not only caregiving skills and competency but being prepared for inevitable death of the patient should be provided to family members while they are providing active care to the relative with cancer and many years after ceasing such role.

Research Implications: Findings make significant contributions to research on long-term adjustment of family members who lost a loved one to cancer. Specifically, findings expand knowledge on lasting effects of complicated grief and the significant role of family caregivers' perceived preparedness for the death of the patient in their adjustment to the loss.

Practice Implications: Caregivers may benefit from programs that facilitate their ability to multidimensionally prepare for the impending death of the patients, which may enhance their long-term adjustment many years after the loss.

Acknowledgement of Funding: This study was funded by the American Cancer Society National Home Office, intramural research. Writing of this abstract was supported by American Cancer Society Research Scholar Grants (121909-RSG-12-042-01-CPPB) and the Sylvester Comprehensive Cancer Center, University of Miami, FL, to the first author.

S6-2

Outcomes of randomized controlled trial of Family Focused Grief Therapy in palliative care and bereavement

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BACKGROUND/PURPOSE: Family-centered care for patients with advanced cancer and their families is an optimal way to psychosocially support the caregiving system and sustain continuity into bereavement. In a hybrid efficacy-effectiveness randomized controlled trial, we compare the impact of dose of Family Focused Grief Therapy (FFGT) and level of family dysfunction on primary outcomes of Prolonged Grief Disorder (PGD) and clinical depression for families assessed by screening with the Family Relationships Index (FRI) to be at risk of

morbid bereavement outcomes. Families could be classified by their relationship functioning as Conflictual, Less-Involved, or Low-Communicating in style. **METHODS:** 170 families (620 individuals, mean 3.6 members per family) were stratified by three levels of relational difficulty on the FRI, with 55 allocated to Standard Care (SC), 59 to 6 sessions (6s), and 56 to 10 sessions (10s) of FFGT. Outcomes were assessed at 6 and 13 months of bereavement using the Complicated Grief Inventory (CGI) and Beck Depression Inventory-II (BDI-II). Intention-to-treat analyses using R allowed for hierarchical and clustered data. **RESULTS:** On fidelity coding, 32 therapists delivered the manualized therapy faithfully. For prolonged grief symptoms, 10s of FFGT was more protective than 6s, with a treatment by family type interaction ($F=2.72$, df 4, 113, $p=0.033$) showing better outcomes among conflictual families. At 13 months post death, 15.5% of the bereaved in SC met PGD criteria on the CGI compared to 3.3% in the 10s arm, and on BDI-II, 20.8% were cases for moderate or severe depression in SC compared to 10.9% in 10s FFGT. **CONCLUSIONS:** Family therapy (FFGT) commenced during palliative care with the cancer patient present and continued into bereavement for the surviving family members delivers modest but clear preventive benefits for dysfunctional families, who are otherwise at risk of morbid outcomes. FFGT can be taught to be successfully applied by therapists from a range of clinical disciplines, including psychology, psychiatry, social work, and family therapy.

Research Implications: Screening of families to identify those at risk of morbid bereavement outcomes empowers more targeted therapeutic intervention. Clustered and hierarchical data can be handled well statistically. Families who are ambivalent about meeting together decline involvement in trials of this kind. Overall morbidity levels may be higher than seen in this study.

Practice Implications: FFGT can help families that might generally be considered by clinicians to be 'difficult' to care for. These families are worth engaging in care, as there is a reasonable prospect of helping them, including preventive benefits that extend into bereavement.

Acknowledgement of Funding: National Cancer Institute R01 grant CA 115329.

S6-3

Advancing the role of oncology nurses in supporting the family: results of family-focused training interventions piloted in the acute care setting

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BACKGROUND/PURPOSE: Acute hospitalization places tremendous strain on caregiving families. Moreover, families interface with the oncology team more frequently and in a climate of greater urgency and stress that occurs during outpatient care. Yet, the extent to which family-centered support is integrated into inpatient care remains inconsistent. As frontline providers, nurses are uniquely positioned to initiate and model support to families, but have limited training in family systems care. The purpose of this presentation is to describe the evaluation of two training interventions designed to advance nurses' capacity to implement family support practices during acute care. **METHODS:** Two training interventions were developed and implemented at Memorial Sloan Kettering Cancer Center: A single-module training administered to 282 bedside nurses addressed challenging family interactions during acute care. An intensive, 6-month training completed by 14 Advanced Practice nurses focused on advanced family intervention skills. Pre-post surveys measured confidence in using family support skills. The intensive training was further evaluated with coding of real and simulated family consultations, and elicitation of perspectives from families in acute care. **RESULTS:** Single-module training was associated with significantly increased confidence managing stressful encounters with families ($t=14.46$, $p<.001$), and 40% of nurses continued skill use at 6 months post-training. Intensive training was similarly associated with increased confidence, and high perceived relevance and utility. Data from families indicated strong alliances with nurses and frequent agreement (50%–93%) on identified psychosocial concerns. **CONCLUSIONS:** Advancing family-centered care practices among nurses may be an effective way to ensure that support to the family is integrated into acute cancer care. **Research Implications:** Of relevance to researchers, the methodology used to evaluate two nurse training programs examines training impact from both the participating nurses and the family members under their care, as separate stakeholders. **Practice Implications:** This study evaluated two new training interventions that were developed and implemented to help acute care nurses improve support for, and strengthen partnership with, caregiving families during a patient's hospitalization. This study represents an important first step toward identifying family-centered nursing practices that are relevant and applicable to the inpatient setting.

Acknowledgement of Funding: Arthur Vining Davis Foundation.

S6-4

A longitudinal analysis of widowed fathers due to cancer: 6 and 12 months follow-up

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BACKGROUND/PURPOSE: Widowed parents who have lost a spouse to cancer must adjust to the demands of sole parenthood while managing their grief and that of their children. This population of caregivers affected by cancer has been overlooked in both research and clinical arenas despite being at heightened risk for poor coping and maladaptive outcomes. To develop and implement targeted interventions, it is necessary to understand the course of these parents' psychological functioning over time. This study is the first to longitudinally examine the psychological functioning of widowed parents with dependent-age children over the course of 12 months. **METHODS:** Widowed fathers whose wives died from cancer within 1 year of entering the study and with at least one child at home completed surveys using validated scales at baseline, 6, and 12 months. Areas assessed included demographics, family-physician communication, perceived parental competence, psychological adaptation, grief, and depressive symptoms. **RESULTS:** Ninety-six widowed fathers participated at all three time points. Although depression scores improved over time (CES-D at baseline=22.1; 6 months=19.1; 12 months=15.8), the magnitude and persistence of depressive symptoms were substantial. The relationships between pre-death variables (e.g., demographics) and psychological functioning as well as parental competence will be presented. Data will be discussed in context of our clinical observations of working with widowed parents. **CONCLUSIONS:** This study underscores the severity and persistence of depressive symptoms and parenting challenges facing widowed fathers due to cancer. The results will be used to develop and assess interventions for these families.

Research Implications: The psychological and parental functioning of widowed parents due to cancer has been thus far largely overlooked in the research arena; thus, many avenues remain to be studied. The current findings may be used to inform empirical exploration of other aspects of widowed parenting relevant to young families affected by cancer deaths.

Practice Implications: Results from this study can be used to inform the development interventions for families with a parent with a terminal cancer diagnosis and with bereaved families. These findings also have implications on the timing of an intervention (following parental death from cancer) and which fathers may benefit the most.

Acknowledgement of Funding: Partial funding was provided by the University Cancer Research Fund.

S7-1

Translation of research to practice for grandparents of children with cancer: national dissemination and evaluation of a new resource

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BACKGROUND/PURPOSE: Grandparents of children with cancer are increasingly recognized as important, but often neglected, family members with significant unmet information needs. We therefore developed a grandparent-targeted information resource. Using a national implementation plan, the resource, as well as the dissemination process, was evaluated in two complementary studies. **METHODS:** A multidisciplinary committee developed a printed booklet targeting grandparents' information needs in accordance with evidence-based patient education guidelines. Study 1 grandparents were invited to provide in-depth evaluations of the resource, which was modified according to their feedback. An appropriate distribution channel was then identified, facilitating the distribution of the modified resource to every newly diagnosed family nationwide from February 2014. Study 2 involved a real-world examination of the implementation process and a second resource evaluation. Quantitative responses were analyzed with SPSS, and qualitative responses were thematically coded using QSR NVivo10. **RESULTS:** Study 1: Seventy-nine grandparents (63% grandmothers, mean age=66.04, SD=7.0) participated. Responses were positive, with 92% finding the resource 'informative' ($n=73$) and 'useful' (84%; $n=66$). The resource did not increase anxiety or depression ($z=-0.25$, $p=0.81$; $z=-1.04$, $p=0.30$; respectively). Study 2: Twenty-six grandparents participated (50% grandmothers, mean age=65.2, SD=6.5). Grandparents reported greater satisfaction ($t=4.7$; $p<0.001$) and greater understanding about childhood cancer ($t=7.0$; $p<0.001$) after reading the resource. Satisfaction with the resource was not significantly related to health literacy. **CONCLUSIONS:** The developed resource is acceptable and appears equally useful for grandparents of varying literacy levels. This study translated research data into a practical resource for families using a successful implementation plan. Annual resource reviews are planned to ensure ongoing relevance/accuracy.

Research Implications: This study demonstrated the feasibility of utilizing an intensive resource development and evaluation process to meet an unmet need. The study highlights the importance of planning for resource dissemination after the conclusion of traditional research projects.

Practice Implications: The developed resource is eminently translatable to other languages and culturally diverse backgrounds, as well as having potential usefulness for grandparents of children with other serious illnesses.

Acknowledgement of Funding: National Health and Medical Research Council of Australia (APP1067501), Cancer Institute of NSW (ID: 11/ECF/3-43), and Kids with Cancer Foundation.

S7-2

Recreating life after death—the place of professional and social support in the lives of parents following the death of a child from cancer

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BACKGROUND/PURPOSE: The death of a child from cancer poses increased risks of long-term psycho-social morbidities for parents. An associated risk is the dislocation experienced by parents in the transition from the hospital into their community following the death of their child. This multi-site study evaluated the impact of professional and social support utilized by parents throughout their child's palliative and end of life care and their bereavement. **METHODS:** Parents whose child had died from cancer (>6 months; <10 years bereaved) were invited to complete a questionnaire and participate in a semi-structured telephone interview through four paediatric oncology facilities. Seventy-five parents participated (49% interview opt in; 22% male, mean age 48 years, mean bereavement 7.2 years, SD 7.2). Data were analyzed using SPSS22 and NVivo9. **RESULTS:** Before their child's death, 45% of parents indicated they would have liked more help than they received. Bereaved parents reported that their most helpful supports included family/friends/neighbors ('somewhat'/'very helpful': 85%), their partner/spouse (82%), and other oncology and/or bereaved parents (50%). Empathic gestures (e.g. sympathy cards) were highly regarded ('somewhat'/'very helpful': 75%). 'Needing to be strong for others' was parents' greatest barrier to accessing support before ('often'/'always': 59%), and following, the child's death ('often'/'always' 36%). **CONCLUSIONS:** Bereaved parents draw on a range of internal, professional, and social resources in the lead up to and following the death of their child from cancer. Hospital-based bereavement programs may provide transitional support for bereaved parents as they adjust to a 'new normal' in their personal and social worlds.

Research Implications: Future research is necessary to further understand the range of professional and social supports parents find most helpful in their adjustment following the death of their child from cancer.

Practice Implications: This study provides valuable insights into the breadth of professional, social, and emotional supports parents draw on in the lead up to and following the death of their child from cancer. Early data suggest parents may benefit from increased support prior to the death of their child, which may then lead to improved adjustment as they transition into their local community more fully following their child's death.

Acknowledgement of Funding: Ms Donovan is supported by a Kids Cancer Centre, Sydney Children's Hospital PhD scholarship and a PhD Top Up Scholarship through the Kids Cancer Alliance, New South Wales.

S7-3

Clinical challenges in implementing psychosocial support in the online space: experiences from the 'Recapture Life' trial

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BACKGROUND/PURPOSE: Cancer diagnosed during the adolescent and young adult (AYA) years complicates the peak time of mental-health risk. Recently, e-mental health strategies (Internet-based psychological interventions) have been hailed as a way to remove barriers to evidence-based psychological care. Numerous ethical and clinical challenges exist, however, in translating evidence-based interventions to the 'online space', and internationally, practice-standards have only recently been developed. This study examined ethical/clinical challenges arising from a videoconferencing-based cognitive-behavioural therapy intervention for AYAs with cancer entitled 'Recapture Life', in relation to international guidance. **METHODS:** A case-series methodology was used to examine ethical/clinical issues within the 'Recapture Life' randomized-controlled trial ($n=35$, 53% females; mean age=21.1 years; average residential distance from Recapture Life 'hub' site=1114.0 km). AYAs aged 15–25 years participated within the first year post-treatment. Each challenge was systematically assessed against e-mental health guidelines sourced from countries including the USA, UK and Australia. **RESULTS:** Across the study trajectory, ethical/clinical issues were documented among between 3.0% and

14.3% of participants. Almost half of the incidents (45%) were identified through routine safeguards built into the intake protocol. The reviewed international standards provided guidance regarding best practice in several cases, but gaps were also identified. Challenges navigated included (i) managing mental-health risks without face-to-face contact, (ii) facilitating discussion about distressing cancer-related experiences in a group setting, (iii) responding appropriately to participants' health changes (e.g., cancer relapse) during the trial, and (iv) being mindful of a range of 'survivorship' experiences/outlooks. **CONCLUSIONS:** Despite significant clinical 'trade-offs', international practice standards can inform the translation of evidence-based therapies to the electronic realm.

Research Implications: The burgeoning literature on e-mental health interventions has to date largely focused on the feasibility and efficacy of such approaches, with significantly less attention having been paid to the unique ethical and clinical issues that can arise in translating evidence-based interventions to this space. This research extends current literature on e-mental health interventions in psycho-oncology by examining the ethical/clinical issues that were most commonly documented within a randomized-controlled trial of a novel intervention for young people with cancer. Through an examination of existing international practice standards for psychologists delivering e-mental health interventions, this research provides a platform for the development of ethically and clinically sound protocols in future online interventions research in psycho-oncology.

Practice Implications: The rapid expansion of e-mental health interventions in psycho-oncology holds promise for services and clinicians to meet the needs of individuals with cancer and their families/carers in new and more flexible ways. This research provides critical insights for clinicians in understanding the types of ethical and clinical issues that commonly arise within e-mental health interventions specific to cancer patients/survivors and further provides psychologists with an evidence-based framework for addressing these kinds of ethical and clinical quandaries.

Acknowledgement of Funding: National Health and Medical Research Council of Australia (APP1067501), Cancer Institute of NSW (ID: 11/ECF/3-43), Cancer Australia and Beyond Blue (APP1022868), and Kids with Cancer Foundation.

S7-4

The development of a pediatric screen: next generation distress thermometer?

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BACKGROUND/PURPOSE: The National Comprehensive Cancer Network designated emotional distress as a sixth vital sign to be recognized, documented, and treated during every patient visit. This led to the adaptation of a Distress Thermometer (DT) and problem checklist to study the DT's validity in a pediatric outpatient setting. **METHODS:** 289 patient–caregiver dyads, with youth aged 7–21 years with cancer and other chronic illnesses, completed the DT and measures of depression (CDI/BSI), anxiety (STAI), pain (FACES), and fatigue (CCFS). **RESULTS:** For patients and caregivers, the DT is significantly correlated with standardized measures of depression ($r=.40$ and $r=.53$, respectively, $p<.001$), anxiety ($r=.52$, $r=.54$, $p<.001$), pain ($r=.25$ and $r=.28$, $p<.001$), and fatigue ($r=.41$ and $r=.47$, $p<.001$). Although inter-rater reliability between DT raters demonstrated significant intra-class correlations between the caregiver, patient, and provider overall ($.55$, $p<.001$), and between each pair of raters (range $.44$ – $.45$), patients and caregivers identified different distress symptoms. ROC analysis revealed limited sensitivity and specificity of the DT when compared to standardized measures, including depression (area under the curve = $.54$, $p=.36$ for patients, $.56$, $p=.19$ for caregivers). **CONCLUSIONS:** Substantial discrepancy between parent- and child-specific distress symptoms indicates that parent input alone is not sufficient to identify child distress or guide provider resource allocation. Given the lack of specificity in current assessments of pediatric distress, and the need to implement screening in cancer centers, these findings suggest that the development of a new, clinically meaningful scale is needed. **Research Implications:** The findings from this study will be used to guide a multi-phase development and validation study of a new electronic screen. Instrument development will include cognitive interviews to ensure that wording of questions is appropriate, pilot testing of the newly developed screen, and then validation of the finalized measure. Alongside this new study, a research survey has been conducted with oncology providers to facilitate the creation of a physician summary report that will provide a summary of the child's screening results and referral recommendations. Longitudinal data are needed to determine whether distress changes over time and whether linkages with appropriate resources result in better psychosocial outcomes.

Practice Implications: Further refined distress screening and provision of summary report for physicians can provide quick identification of those in need of further evaluation, triage appropriate services, and potentially enhance patient care and quality of life in a pediatric population. A new e-screen, *Checking In*, is currently being developed, and the process will be described.

Acknowledgement of Funding: This work was supported in part by the intramural programs of the

National Cancer Institute and the National Institute of Mental Health.

S8-1

Risk perception in women at high risk of breast cancer: intuitive versus cognitive

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BACKGROUND/PURPOSE: Risk comprehension in individuals at increased familial risk of cancer is suboptimal, and little is known about how risk is understood and managed by at-risk individuals who do not undergo genetic testing. **METHODS:** We qualitatively studied these issues in 36 unaffected women from high-risk breast cancer families, including both women who had and had not undergone genetic testing. Data were collected through semi-structured interviews. Data analysis of transcribed interviews was guided by Grounded Theory. Two coders read through the transcripts and identified themes and higher order themes through discussion and consensus. **Results:** Participants were on average 46 years old, mostly with children (83%), and a third (33%) had completed university education. 39% and 59% had more than one first- or second-degree relative with breast or ovarian cancer, respectively. 16 had been genetically tested, 20 had not. Risk comprehension and management were largely influenced by the experience of coming from a high-risk family; both tested and untested women relied heavily on intuition. Intuition included feelings of expectation, affective understanding of risk, theories about cancer and heredity, and assumptions about carrier status. Only a minority of women had a cognitive understanding of risk, largely derived from genetic counseling. Although women's cognitive understanding of their risk appeared generally accurate, this objective risk information was considered of secondary value. **CONCLUSIONS:** These findings suggest that exploration of women's intuitive feelings of risk is essential during genetic counseling. Strategies to reinforce cognitive understanding are needed.

Research Implications: These findings suggest that intervention studies to support women's decision making about and adjustment to high risk of breast cancer should target intuitive as well as cognitive perception of risk. Future studies should explore the impact of genetic counselling on intuitive as well as cognitive conceptualisation of risk.

Practice Implications: Genetic counsellors, and those assisting women to make decisions about risk management, need to explore women's intuitive as well as cognitive understanding of risk. Exploring with women,

the family, and personal experiences which shaped their intuitions about risk may be helpful.

Acknowledgement of Funding: The National Health and Medical Research Council of Australia funded the larger study of which this is a part for 12 years.

S8-2

Does stress cause cancer? A 15-year prospective study of women at high risk of breast cancer

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BACKGROUND/PURPOSE: Stress is a potential risk factor for breast cancer, but studies have been retrospective or utilised very basic measures of stress. This study aimed to overcome these limitations in a prospective study. **METHODS:** Adult, unaffected women from an Australian registry of high risk breast cancer families (kConFab) were invited to complete gold-standard stressful life event (SLE) interviews (LEDS) and patient-reported outcomes (PROs) assessing anger, anxiety, depression (HADS), optimism (LOT), anti-emotion (AES) and social support (Duke) three-yearly for 12 years.

A time-to-event analysis using Cox proportional hazards regression with a random family effect specified, and adjusted for age at study entry, history of breast cancer and mutation status, was performed. Total, total by severity, and at least one severe event or chronic difficulty (CD) were evaluated as time-varying covariates.

RESULTS: Psychosocial data were available for 2978 women in 1016 families. 55 women were censored at time of having a risk reducing mastectomy. 78 women (2.6%) in 75 families were diagnosed with breast cancer. No CD variable predicted outcome. Total events (HR=0.648, $p < 0.001$), total events by low severity (level 1: HR=0.677, $p < 0.001$; level 2: HR=0.565, $p < 0.001$) and having at least one severe event (HR=0.322, $p < 0.001$) predicted lower likelihood of being diagnosed with breast cancer. None of the PROs were significant, nor were their interactions with total number of CDs and total number of events. **CONCLUSIONS:** Our results suggest that stress does not cause breast cancer and may even be protective.

Research Implications: This study is the first truly prospective study with detailed stress data and PROs exploring a comprehensive model of the role of stress in breast cancer, to be carried out internationally. The finding that mild to moderate stress can be protective against breast cancer is surprising and needs further exploration.

Practice Implications: The finding that stress does not appear to cause cancer and may even be protective is in many ways good news for women. This message needs to be clearly presented to the community, to alleviate worry about stress.

Acknowledgement of Funding: This study was funded by the National Health and Medical Research Council of Australia for 12 years.

S8-3

Factors associated with the decision to have risk reducing mastectomy or oophorectomy

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BACKGROUND/PURPOSE: Risk reducing surgery uptake rates are variable. This study explored factors associated with risk-reducing mastectomy (RRM), or oophorectomy (RRO) uptake in women who knew or did not know they had a mutation. **METHODS:** Adult, unaffected women who had not had RRM or RRO from an Australian registry of high risk breast cancer families (kConFab) completed patient reported outcomes three-yearly for 12 years.

Within each strata (known mutation or not), predictors with $p < 0.20$ were included in a multivariable multinomial logistic regression using stepwise regression with backward elimination.

RESULTS: 2099 women participated. In the carrier stratum ($n = 109$), 17 and 25 had a RRM and RRO, respectively. Age, marital status, parity, total first degree relatives with breast cancer, total second degree relatives with ovarian cancer and breast cancer risk were entered into the model. Parous women were more likely to have an RRO (OR=10.146, 2.206–46.667, $p = 0.008$). In the no mutation stratum ($n = 1990$), 11 and 40 had a RRM and RRO, respectively. Age, parity, cancer anxiety (IES), total first degree relatives with ovarian cancer, total second degree relatives with ovarian cancer, breast cancer risk, relative risk and youngest BC were investigated. Women younger than 41 years were more likely to have an RRM (OR=10.404, 2.171–49.845), parous women to have an RRO (OR=14.324, 1.893–108.405) and RRM (OR=4.275, 0.890–20.532), and those with moderate to severe IES to have RRM (OR=3.219, 0.970–10.684) and RRO (OR=2.080, 1.055–4.100). **CONCLUSIONS:** Cancer anxiety, age and parity predict RRM and RRO uptake.

Research Implications: The degree to which age, parity and cancer anxiety, versus other factors, influence risk-reducing surgery decisions may vary cross-culturally,

and this should be investigated. The impact of genetic counseling on cancer anxiety and thus decision-making should be further investigated.

Practice Implications: The fact that cancer anxiety, which is known not to be closely related to objective risk, influences decision making about risk-reducing surgery has important implications for clinical practice. Clinicians need to explore cancer-related anxiety with women, and other alternatives to manage this anxiety, before a surgical solution is adopted.

Acknowledgement of Funding: This study was funded by the National Health and Medical Research Council of Australia for 12 years.

S8-4

Prophylactic mastectomy decision-making: what help do women need?

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BACKGROUND/PURPOSE: Women who carry a *BRCA1/2* mutation are advised to consider prophylactic mastectomy (PM), which has the potential impact of reducing their high inherited risk of breast cancer by over 90%. Little guides women about how to make such a monumental, body- and life-altering decision. We review the major issues which confound women and provide advice for mental health professionals supporting women of various ages making this important decision. **METHODS:** Analysis of coded narratives from women interviewed retrospectively because they had undergone PM and review of clinical consultation notes from >25 sessions with women who carry *BRCA1/2* mutations seen for psychological consultation as part of their decision making revealed categories of concern in several areas. **RESULTS:** Consultation/concern focused on discussion of family history of breast cancer and especially deaths from breast cancer, trust in/fears about the efficacy of screening and levels of anxiety experienced in relation to screening, concern about survival to raise young children, level of psychological investment of the woman in her breasts, anticipated sexual impact, body image, and/or family coercion. Angelina Jolie's revelations had varied but significant effects on women's thinking about prophylactic mastectomy. **CONCLUSIONS:** Professional consultation helps women with decision making about and preparation for prophylactic mastectomy. Peer consultation can be useful if matching parameters are carefully considered.

Research Implications: Longitudinal study of decision making and subsequent psychological outcomes would be advantageous.

Practice Implications: While discussion of the underlying research about survival advantages of PM is important for some women, equanimity about the decision being one which is medically respected regardless of what is chosen is also important to convey.

Acknowledgement of Funding: None.

S9-1

'How can we support you, let us count the ways': the challenges faced and resources available to ECPPs in limited-resource countries

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BACKGROUND/PURPOSE: Psycho-oncology is gradually being recognized as a scientific discipline with career opportunities becoming available in limited-resource countries. However, ECPPs are often faced with negative sociocultural perceptions of cancer and psychological aspects of care. Consequently, ECPPs in these countries must create new paths sometimes without adequate or appropriate skills, making it difficult for them to have a clear career trajectory. **METHODS:** Given this, the IPOS Board is invested in identifying strategies to support ECPPs in limited-resource countries through initiatives such as the IPOS Academy. This presentation will describe the challenges and opportunities presented to ECPPs in these countries. The need for building the profession through academia and training programmes will also be discussed. **RESULTS:** Key supportive needs of ECPPs in limited-resource countries include, but are not limited to, obtaining additional training and skill development in their chosen specialty, accessing funding, and identifying opportunities to develop positive mentoring and peer relationships. **CONCLUSIONS:** This symposium will provide a platform to share and discuss opportunities available to ECPPs in limited-resource countries as well as reflect on innovative paths one can create as ECPPs in these countries.

Research Implications: By promoting the needs of ECPPs in limited-resource countries, the profession has an opportunity to maintain the momentum of developing and disseminating high-quality research and clinical services in psycho-oncology from a wider global community.

Practice Implications: The development of well-supported and skilful ECPPs in limited-resource countries will help address the vast psychosocial needs of cancer patients, survivors, and family members of these countries.

Acknowledgement of Funding: None.

S9-2

Surviving the early years in psycho-oncology: fakin' it 'til you make it

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BACKGROUND/PURPOSE: Early career professionals in psycho-oncology (ECPPs) have available to them significant opportunities for innovation and impact. However, they also may face challenges as they advance their career. To achieve success, ECPPs need to manage difficult feelings around success (and failure) to ultimately develop a professional identity. **METHODS:** This presentation will focus on the challenges of being an ECPP. Two ECPPs will discuss lessons learned about how to survive in a growing, demanding, but also very gratifying field. **RESULTS:** The presenters will describe strategies for developing a professional identity and career narrative and for building expertise in specialty areas while maintaining skills as a psycho-oncology generalist. They will also explore how to cope with difficult feelings related to the career development process and how to sustain a sense of meaning in the long haul. Different roles, including researcher, clinician, and educator, will be considered, as will international perspectives on building programs and one's personal career. **CONCLUSIONS:** The planned presentation is part of a symposium that will provide a much-needed opportunity for early career professionals to learn from peers and experts about developing a successful career in psycho-oncology. This presentation will provide participants with strategies to develop and sustain a career in psycho-oncology from the perspectives of other ECPPs.

Research Implications: By supporting ECPPs, the profession has an opportunity to maintain the momentum of developing and disseminating high-quality research and clinical services in psycho-oncology.

Practice Implications: The development of well-supported and skilful ECPPs will help address the vast psychosocial clinical needs of cancer patients, survivors, and family members.

Acknowledgement of Funding: Dr. Lichtenthal is supported by National Cancer Institute K07 CA172216. Dr. Peate is supported by an Early Career Fellowship from the National Breast Cancer Foundation (ECF-15-005).

S9-3

Securing funding for your research

Julia Rowland

National Cancer Institute

BACKGROUND/PURPOSE: The purpose of this presentation is to describe strategies for obtaining NCI/NIH research funding, with a focus on how early career researchers can maximize their funding success. **METHODS:** Strategies for developing ideas, writing grants, and increasing programmatic relevance will be described, including those relevant to international researchers. Common barriers to obtaining funding will be considered. **RESULTS:** Early career researchers may face challenges in obtaining funding, but there are also numerous opportunities to build a successful program of research using federal and foundation grants. **CONCLUSIONS:** This presentation will conclude with a discussion of current research trends in psycho-oncology and future directions.

Research Implications: Assisting early career researchers to obtain competitive funding will help advance the science of psycho-oncology.

Practice Implications: Early career researchers are the future of evidence-based care, as advances in psycho-oncology research lead to advances in clinical care for cancer patients and their families.

Acknowledgement of Funding: None.

S11-1

Surviving cancer but succumbing to suicide: what explains the risk in long-term survivors?

Christopher Recklitis

Dana-Farber Cancer Institute

BACKGROUND/PURPOSE: Cancer is a known risk factor for suicide, but research in this area focuses largely on patients during treatment or at end of life. Recent studies have highlighted suicide risk in long-term cancer survivors, raising questions about how cancer confers risk for suicide even in survivors cured of their disease. **METHODS:** Epidemiological studies are selectively reviewed, and data from cohort studies of long-term survivors and clinical cases from our center are presented. **RESULTS:** Survivors demonstrate a significant increase in suicide ideation and completed suicide compared to normative groups. While suicide risk generally decreases over time, this decrease is not consistent across cancer sites. Moreover, risk remains elevated even decades after diagnosis. Registry studies of suicide risk factors in survivors have emphasized treatment variables including cancer site, gender and age, but several cohort studies have now examined the relationship of survivor health outcomes with suicidality. Studies of adult and pediatric cancer survivors find suicide ideation is associated with physical health functioning and late-effects of treatment, demonstrating suicidality is driven by physical as well as emotional health outcomes. Of note, as many as 30–45%

of survivors with suicidal ideation report no significant symptoms of depression, so emotional distress screening alone will fail to identify their suicide risk. **CONCLUSIONS:** Cancer survivors are at increased risk for suicide even decades after completion of therapy. Studies indicate that physical health and medical late effects of cancer treatment are significant risk factors that may account for the increased risk of suicide in this population.

Research Implications: The increased risk for suicide in cancer survivors is not well understood, but recent studies indicate medical late effects of treatment may explain the excess suicide risk in survivors. Future research on the nature of the relationship between medical late effects and the development of suicidal ideation is needed in order to identify survivors at high risk for suicide and to develop effective interventions to treat them. In addition, research to develop better ways of identifying cancer survivors at risk for suicide will benefit from attending to medical morbidities.

Practice Implications: Healthcare providers need to be aware of the increased risk for suicide ideation and completions in cancer survivors. In particular, it is important for providers to recognize high-risk groups and to understand the potential for medical as well as emotional functioning to contribute to the development of suicidality in these survivors.

Acknowledgement of Funding: American Foundation for the Prevention of Suicide.

S11-2

Desire for death, suicidal ideation, and interest in physician-assisted suicide in palliative cancer care

Keith Wilson
The Ottawa Hospital

BACKGROUND/PURPOSE: Studies in palliative care have examined suicidal concerns in three different ways: investigations of (1) desire for death, (2) suicidal ideation, and (3) interest in receiving euthanasia or physician-assisted suicide. All three areas were addressed in the Canadian National Palliative Care Survey. **METHODS:** Interviews were conducted with 381 patients with advanced cancer. Participants were asked about the desire for death, suicidal thoughts, and the interest in receiving a physician-hastened death. A diagnostic interview for common mental disorders was also administered. **RESULTS:** Transient wishes for death were acknowledged by 30.5% of respondents, but only 12.2% had a genuine desire to die. Some degree of suicidal ideation was reported by 16.3%, but only 4.0% 'often' thought of suicide or had formulated a plan. Only 5.8% of respondents would have

requested physician-assisted suicide at the time of the interview. There was overlap across the categories but also important differences. The prevalence of depression and/or anxiety disorders among participants with a desire for death, serious suicidal ideation, and an interest in receiving assisted suicide was 52.2%, 53.3%, and 40.1%, respectively. **CONCLUSIONS:** Occasional wishes for death are common in patients with advanced cancer. More serious concerns are often, but not always, associated with depression or anxiety disorders.

Research Implications: Qualitative research is needed into reasons underlying the desire for death in patients with or without mental disorders.

Practice Implications: The expression of a desire for death or suicide by a terminally ill patient should raise a suspicion about mental health problems but is not in itself clearly indicative of one.

Acknowledgement of Funding: Canadian Institutes of Health Research.

S12-1

A prospective study of health-related quality of life among Chinese-American breast cancer survivors

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City of Hope

BACKGROUND/PURPOSE: This prospective study examined health-related quality of life (HRQOL) of Chinese-American breast cancer survivors (BCS). **METHODS:** Participants completed mailed questionnaires at baseline and 12 months. Recruitments were conducted in Los Angeles through hospital-based cancer registries and community organizations. HRQOL was measured using the Functional Assessment of Cancer Therapy-General. Paired-samples *t*-test, correlation matrix and linear regression analyses adjusted for change score were performed. **RESULTS:** Participants ($N=73$) were middle aged ($M=54.6$, $SD=9.2$), were educated (92% >high school), have lower income (63% <45 K), were diagnosed with stage I–II breast cancer (83%) and have 1–5 years post-diagnosis. Over 12 months, family communication declined ($p=0.005$); however, there were no significant changes in distress (BSI=12, $p=0.206$). Overall, 32% experienced improvement, 43% minimal change and 25% deterioration in HRQOL. BCS who experienced HRQOL improvements had positive change scores in social support (+7.9 points), family communication (+5.5 points) and general-health perception (+5.8 points). BCS who experienced deterioration showed negative changes in general-health perception (–14.4 points) and social support (–12.4 points). Regression analyses showed

general-health perception ($p < 0.001$), quality of care ($p < 0.001$), life stress ($p = 0.001$) and improvement in general-health perception (change score) significantly predict HRQOL and accounted for 72% of the variance. **CONCLUSIONS:** Our findings suggest that social support, family communication and general health perception are reliable indicators of HRQOL, and their significance in predicting shifts in HRQOL is stable over time. Additionally, research is needed to examine the contributions of medical, physical, familial and social dimensions on HRQOL outcomes to better understand the survivorship experience and inform effective culturally and clinically responsive interventions to protect well-being and improve HRQOL within the Chinese BCS population.

Research Implications: Chinese Americans are the largest Asian subgroup in the world and the USA, and BC is the most common type of cancer and the leading cause of cancer death among Chinese immigrants globally. Therefore, psychooncology research and practice can benefit from new knowledge based on rigorous research to identify risk factors for distress, as well as characteristics and factors that promote HRQOL and optimal survivorship outcomes. The findings are based on a prospective study that also contributes to filling the gaps of knowledge derived from longitudinal data.

Practice Implications: Our results suggest that lower-income status and the effects of acculturative stress due to differences in living situation, family structure and culture, as well as language barriers and inadequate social network and support due to living in the USA, seem to negatively impact HRQOL. This finding necessitates urgent attention from healthcare providers and community-based supportive networks to conduct culturally and linguistically appropriate assessments to identify those at risk and services to provide relief for Chinese-American BCS.

Acknowledgement of Funding: Susan G. Komen Grant number: POP0601091.

S12-2

Having cancer in a country not your own: the Chinese immigrant story in Australia

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BACKGROUND/PURPOSE: Internationally, immigration is increasing. In Australia, 24% of the population were born overseas and 3% speak English poorly. We explored disparities in patient-reported outcomes in Chinese immigrants with breast cancer. **METHODS:** We

recruited first-generation Chinese-speaking immigrants and Anglo-Australians aged >18 years diagnosed with cancer within 5 years, through three cancer registries and 16 hospitals. Quality of life (FACT-G), anxiety and depression (HADS), unmet needs (SCNS), and illness perceptions (IPQ) were assessed cross-sectionally. **RESULTS:** 982 people participated. Of these, 185 Anglo-Australians (AA) participants (68 patients and 117 survivors) and 130 Chinese (CH) participants (83 patients and 47 survivors) had breast cancer. On FACT-G, *survivor* mean scores were 81.1 (AA) versus 77.3 (CH), and for *patients*, they were 71.8 (AA) versus 66.1 (CH) (both $p = 0.002$). *Survivor* depression mean scores were 2.9 (AA) versus 4.4 (CH); for *patients*, mean depression was 4.7 (AA) versus 6.9 (CH) (both $p = 0.0001$). *Survivor* prevalence of clinical depression was 2% (AA) versus 9% (CH); *patients'* prevalence was 21% (CH) versus 7% (AA) (both $p < 0.0001$). There were no group differences in anxiety, but CH reported greater threat on the IPQ. 79% (CH) versus 38% (AA) reported at least one unmet need. Lack of English and not understanding the health system mediated outcomes; having an interpreter did not. **CONCLUSIONS:** Chinese-speaking first-generation cancer patients in Australia have poorer patient-reported outcomes than their Anglo-Australian-born peers, not mitigated by the presence of an interpreter.

Research Implications: Longitudinal studies to determine persistence of disparity, and intervention studies to reduce disparities in outcomes are now needed.

Practice Implications: We need strategies such as health professional cross-cultural education, and for patients: translated materials, peer navigators, audiotapes of important consultations, health coaching, and culturally and linguistically appropriate screening and supportive care approaches, to reduce disparities.

Acknowledgement of Funding: Cancer Australia and NHMRC.

S12-3

Cancer survivorship: Chinese women in Hong Kong

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BACKGROUND/PURPOSE: Earlier detection and treatment advancement improve survival, leading to the importance of addressing cancer survivorship issues. This study examined supportive care needs, psychological distress, health-related quality of life (HQoL), and physical symptom distress among Hong Kong Chinese women who survived from BC. **METHODS:** 371/383 Chinese women who had completed BC treatment within 6 months completed an interview. Participants were assessed for

unmet needs (health system and information (HSI) and physical and daily living (PDL)), psychological distress (HADS), HQoL (SF-12), illness perception (IPQ), and physical symptom distress (MSAS). RESULTS: Mean scores indicated moderate levels of HSI needs (mean 40.44) and low levels of PDL needs (16.10); 86% of women identified at least one unmet HSI needs, and 22% identified at least one unmet PDL needs. HADS mean scores indicated low distress (3.05 depression; 2.92 anxiety). The prevalence of clinical depression and anxiety was 4.3% and 4.1%, respectively. SF-12 physical health (46.11) and mental health (45.54) mean scores were comparable with the population norm; IPQ mean scores (34.20) indicated little negative BC impacts. A significant proportion of women reported having pain (62%), numbness (54%), fatigue (47%), and difficulty sleeping (41%), with about 30% to 40% reporting these symptoms being at least 'somewhat distressing'. CONCLUSIONS: Hong Kong Chinese women who survived from BC demonstrated low distress, with minimal HQoL impacts and negative illness cognition. However, many women experienced residual physical symptoms, reflecting need for improved symptom assessment and management. Furthermore, these women expressed needs for continuity of care and information support.

Research Implications: This report is the one of the few studies describing supportive care need, physical symptom and psychological distress, and QoL among Chinese survivors of BC.

Practice Implications: The type, targeting, and provision of support services for Chinese women with BC depend on anticipating need. In particular, the information components are currently poorly addressed in parts of Asia, which in turn increase other unmet needs, impairing coping.

Acknowledgement of Funding: This work was supported by Hong Kong Cancer Fund.

S13-1

Understanding patient experiences to inform treatment decision-making: implications for the use of a patient-powered registry

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BACKGROUND/PURPOSE: As the number of cancer survivors grows exponentially in the next 10 years (ACS, 2014), there is an increased emphasis on quality of life (QOL). Understanding patient experience is

essential to designing tools to support treatment decision-making around how best to balance therapeutic effectiveness with QOL. In 2013, the Cancer Experience Registry was established to engage patients online to improve understanding of the psychosocial needs of cancer survivors over time. METHODS: As of January 2015, the Cancer Experience Registry had over 7500 participants based on outreach across advocacy organizations and through social and traditional media. A subset of participants ($N=1195$) who joined between March 2013 and September 2014 and live in the USA were analyzed. These participants completed a survey related to QOL. RESULTS: Among the registrants (83% female, median age 56 years, 88% Caucasian, 58% with a college degree), a high proportion reported they were not prepared for treatment decision-making. 26% reported they were 'not at all' or 'a little bit knowledgeable' about treatment choices, and over half (52%) were 'not at all' or 'a little bit' prepared to discuss treatment options with a doctor. CONCLUSIONS: Patient knowledge, values and goals can have a profound impact on treatment decisions especially in an era of patient-centered care. These results are discussed in the context of a unique collaboration with the Duke Clinical Research Institute and the Cancer Support Community, which leverages the Registry to quantify patient value preferences for treatments to inform treatment decision-making and regulatory processes.

Research Implications: Collecting patient preferences for treatment is a vital step in developing effective treatment decision-making tools with an overarching goal of enhancing patient care.

Practice Implications: Being mindful of patient preferences for treatment and related outcomes can result in care that is patient centered and will positively impact patients through better QOL.

Acknowledgement of Funding: Celgene Corporation, Pfizer Oncology, Onyx Pharmaceuticals, Pharmacyclics, Janssen, Genentech, Bristol-Myers Squibb, Millennium: The Takeda Oncology Co, and Lilly Oncology.

S13-2

A database of patient experience: moving beyond anecdote

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BACKGROUND/PURPOSE: For patients, caregivers and clinicians facing or treating an illness, other people's experiences of diagnosis, treatments and life impact have high value. Web-based health information has now greatly increased the influence of patient experience. But how can advocates for the importance of patient experience

avoid the pitfalls of anecdotal accounts, while retaining narrative power unavailable through quantitative surveys? **METHODS:** The Database of Individual Patient Experience ('DIPEX') methodology, originally developed at Oxford University, combines rigorous qualitative patient experience studies with web-based presentation of collected data. Each study systematically produces engaging summaries presented through multimedia clips using patients' own voices. These summaries, accessible online at 'healthtalk.org' and related sites, are set in the context of clinical best practice and the current evidence base. Interviewees are intentionally recruited for diversity of perspectives. **RESULTS:** Conceptual review concludes that patient experience is a critical feature of e-health and influential for information, support, relationships, behavior, experience with services, learning to tell a story and visualizing disease. The UK's 'healthtalk.org' website is widely recognized for its high quality, and usage has increased from 50,000 average monthly visits in 2011 to a current high of 450,000. Interest in cancer information is high; 4 of the top 10 most visited pages focus on cancer. Teams in 10 countries are now implementing DIPEX; presenters will share emerging data from the first full study in the USA. **CONCLUSIONS:** DIPEX and its implementation tool 'Healthtalk.org' offer diverse, rich, accessible accounts of patient experience that complement quantitative data and offer a research-based alternative to anecdotal patient stories.

Research Implications: The DIPEX methodology has contributed robust data to the patient experience research base, as illustrated by more than 100 peer-reviewed publications emerging from work to date, and 38 qualitative studies related to cancer conducted between 2002 and 2014.

Practice Implications: 'Healthtalk.org' is already being used by 75% of medical schools in the UK. Independent research about the impact of 'healthtalk' modules found that these data helped patients identify new issues to discuss with clinicians, and was viewed as an important way for clinicians to understand what a particular illness is really like for patients. Currently, the site has more visitors from the USA (41%) than from the UK (37%). Presenters will discuss additional practical implications in the US context.

Acknowledgement of Funding: The US-based DIPEX study described in this session was supported by the UW School of Medicine and Public Health Wisconsin Partnership Program, the UW School of Medicine and Public Health Department of Family Medicine, and the Clinical and Translational Science Award (CTSA) program, through the NIH National Center for Advancing Translational Sciences (NCATS), grant UL1TR000427. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

Additional financial support was provided from the Health Innovation Program, the University of Wisconsin Medical Foundation, and the Center for Patient Partnerships.

S13-3

Including the patient's perspectives in patient-reported outcomes: assessment of quality of life appraisal in bladder cancer

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BACKGROUND/PURPOSE: Although health-related quality of life (QOL) can only be understood from the individual's perspective, almost all studies rely on comparisons of numerical ratings across people and over time. This approach has significant problems: Research on response shift and cognitive factors has demonstrated individual differences in criteria used to rate QOL, as well as individual changes over time, especially due to the burdens and uncertainty of cancer. **METHODS:** In order to explicitly measure personal criteria, we developed the QOL Appraisal Profile (QOL-AP), a structured interview that assesses personal goals, experiences and standards of comparison patients consider when rating QOL. We administered the QOL-AP, the EORTC-QLQC30 and disease-specific QOL measures to 280 muscle-invasive bladder cancer patients, followed pre-cystectomy to 2 years after surgery. **RESULTS:** We hypothesized that criteria for QOL, such as standards of comparison, would be associated with baseline demographics and health. For example, younger patients rated themselves against their own goals as well as discussions with doctors. Unmarried patients compared themselves to others with cancer, particularly family. Appraisal was also associated with QOL ratings. For example, global QOL was greater among those whose criteria involved positive events, accomplishments and problem avoidance. Urinary distress was related to a focus on personal priorities and goals as well as recent difficulties. **CONCLUSIONS:** Appraisal measures are needed to improve the validity and interpretability of QOL research. Appraisal measures bring to light differences in the meaning of QOL that are usually ignored. Consideration of these differences is necessary if research is to amplify patients' voices.

Research Implications: QOL appraisal has been shown to moderate the relationship of health status changes and patient-reported outcomes. Changes in criteria that people consider important to QOL are also important intervention outcomes in their own right, related to making meaning, coping and optimization of time and energy through selective disengagement.

Practice Implications: Measures of quality of life appraisal can be used by clinicians to better understand patients' perspective, priorities and concerns. Assessment often helps patients to organize and clarify their own concerns. This provides a common language for further discussion. For example, we have used the appraisal measure as a prelude to discussion to help patients and clinicians anticipate and plan for personal goals and priorities that may interfere with adherence to radiotherapy appointments.

Acknowledgement of Funding: This study has been supported by the Patient Centered Outcomes Research Institute and the Memorial Sloan Kettering Division of Urological Oncology.

S14-1

Bereavement services in European palliative care: a descriptive study by the bereavement taskforce of the European Association for Palliative Care

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BACKGROUND/PURPOSE: An integral part of supportive care in cancer care and palliative care is bereavement care. Yet, surveys of bereavement services in palliative care show that bereavement programs struggle with best-practice models. The aim of this study was to survey hospice and palliative care bereavement services in order to describe the bereavement care provided in the European Association for Palliative Care (EAPC). **METHODS:** A questionnaire was developed based on previous studies and piloted. A link to the online questionnaire was distributed to services via the national associations of the 32 countries in the EAPC. The questionnaire consisted of 54 questions and was structured into background information, activities, personnel, access, community links and funding. **RESULTS:** There were 370 responses from 25 countries (78%), and 302 (82%) provided bereavement service.

A wide range of activities were provided such as providing telephone support (84%) and counselling (81%). In 110 (36%) of services, management was based on multidisciplinary team decisions, and 122 (34%) were not aware of any recommendations or guidelines of service provision in their country.

CONCLUSIONS: This study presents the first overall picture of bereavement support in cancer and palliative care services in the EAPC. Results indicate a range of activities; however, up to two thirds of services did not employ a designated bereavement coordinator or use formal standards to inform service provision. The extent to which bereavement services are prioritised in supportive and palliative care is questioned.

Research Implications: Large descriptive studies like the current provide a necessary foundation for future research into provision of supportive care and bereavement care and expose areas in need of improvement. This study will form the basis for further research into service provision to develop models of care.

Practice Implications: This is the first study to describe bereavement services in palliative care in the EAPC, and it provides valuable information to form a basis for the development of standards for bereavement care and secure quality of care.

Acknowledgement of Funding: The EAPC is gratefully acknowledged for supporting the work of the bereavement taskforce. The EAPC is gratefully acknowledged for supporting the work of the bereavement taskforce. The EAPC is gratefully acknowledged for supporting the work of the bereavement taskforce. The EAPC is gratefully acknowledged for supporting the work of the bereavement taskforce.

S14-2

Transitional social support: a developing framework for hospital-based bereavement care following the death of a child from cancer

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BACKGROUND/PURPOSE: Following the death of a child from cancer, families often describe feeling 'abandoned' and 'isolated' by healthcare professionals with whom they had built a trusting relationship throughout their child's extended care trajectory. Social support theory may inform the development of transitional psycho-social care for families which begins early in a child's care trajectory and continues in the early stages of bereavement, allowing families' time to simultaneously process their loss while rebuilding relationships in their local communities. **METHODS:** This paper (a) reviews the literature describing social support theory, (b) creates linkages between the functions of social support and bereavement interventions described in a mixed study review using PRISMA guidelines, and (c) proposes a

new theoretical model for hospital-based bereavement interventions drawing on existing models of grief and bereavement to support families as they endeavor to find meaning in their personal and social worlds. **RESULTS:** The mixed study review identified 19 interventions/services which were then categorized under four functions of social support including emotional, appraisal, instrumental, and informational support. Aligning the functions of social support and the dual process model of grief, a new theoretical framework is proposed for transitional hospital-based bereavement care following the death of a child. **CONCLUSIONS:** This paper acknowledges the individual and the collective as central to transforming our response to the bereaved. Drawing on a post-modern approach, our emerging theoretical framework may inform the development of transitional psycho-social care guidelines for palliative, end of life, and bereavement care in the pediatric oncology setting.

Research Implications: We believe our emerging theoretical model for hospital-based bereavement care may provide a foundation for further research into how bereaved families describe the impact of transitional bereavement support which sits within a framework of emotional, instrumental, informational, and appraisal functions of social support.

Practice Implications: This developing theoretical model may facilitate an evidence-based approach to development and evaluation of bereavement support programs and their composite services/interventions by encouraging standardized metrics and outcome measures, eventually creating an evidence base.

Acknowledgement of Funding: Ms Donovan is supported by a Kids Cancer Centre, Sydney Children's Hospital PhD scholarship and Kids Cancer Alliance PhD Top Up Scholarship.

S14-4

Delivering bereavement support using telemental health: preliminary findings from an open trial of meaning-centered grief therapy delivered through videoconferencing

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BACKGROUND/PURPOSE: While parents who lose a child to cancer often desire a continued connection to their child's treating institution, they may face numerous emotional and logistical barriers to accessing bereavement support. Telemental health approaches have the potential to address these barriers and to reduce the sense of secondary losses related to disconnecting with the treating institution after their child's death. The purpose of this

presentation is to describe an evaluation of Meaning-Centered Grief Therapy (MCGT), an intervention for bereaved parents adapted from Meaning-Centered Psychotherapy, delivered through videoconferencing. **METHODS:** We will describe two phases of a multiphase National Cancer Institute-funded intervention development study of MCGT: an open trial of MCGT delivered in person and an open trial of MCGT delivered through videoconferencing. Each trial recruited five parents with elevated prolonged grief symptoms who lost a child to cancer between 6 months and 6 years ago. Participants received 16 sessions of MCGT and completed weekly session evaluations and prolonged grief and meaning assessments. Issues with the technology and related feedback were also recorded. **RESULTS:** We will present descriptive data on weekly ratings of perceived support and technical challenges. Changes in outcomes over time and participant satisfaction will also be described. Findings from the videoconferencing open trial will be compared to those from the in-person open trial. **CONCLUSIONS:** Delivering interventions through videoconferencing can assist bereaved parents with maintaining a connection to their child's treating institution while reducing barriers to accessing care. Study findings will be used to optimize the intervention for a larger randomized controlled trial. Advantages and disadvantages of telemental health will be discussed.

Research Implications: This study may contribute to our understanding of how to best evaluate telemental health interventions, advancing the science in this area.

Practice Implications: Findings from this study may improve continuity of care for bereaved families, facilitating access to specialized grief support and preventing secondary losses related to the institution.

Acknowledgement of Funding: This research is supported by National Cancer Institute K07 CA172216 (Lichtenthal).

S15-1

The Integrated Cancer Care Access Network (ICCAN) addressing social and economic barriers to receipt of optimal cancer care among underserved immigrant and other minorities in New York City

Francesca Gany
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BACKGROUND/PURPOSE: Many of the challenges that prevent patients from accessing adequate health care are especially prevalent for immigrants, exacerbated by language barriers and unfamiliarity with resources and care systems. Over 33 million individuals in the USA are foreign born. NYC is home to nearly 3 million immigrants. This

study examines the optimal cancer care and survivorship impediments among underserved, minority, and immigrant cancer patients. **METHODS:** 2300 patients were recruited at 10 NYC cancer clinics between January 2011 and December 2014. Bilingual Access Facilitators administered a needs assessment survey in the patient's preferred languages. Descriptive statistics, cross-tabulations, and tests of proportions were used to examine sociodemographic characteristics and assistance needs. An additional 75 pediatric underserved cancer patients/families were studied. **RESULTS:** Patients had a mean age of 55 years, 62% females, 40% with breast cancer, and 81% born outside of the USA or in Puerto Rico. 50% preferred to speak a non-English language. 21% were uninsured. Patients most commonly requested financial support (74%), transportation assistance (45%), food support (36%), help with health insurance issues (11%), housing issues (9%), and legal services (7%). Non-US-born patients were significantly more likely to request financial assistance compared to US-born patients (93% vs 86%, $p < .01$). The pediatric patients and their families indicated academic services (80%), educational programs and summer meal programs (65%), therapy/counseling for the caregiver (45%), therapy/counseling for siblings (20%), and child care (15%) needs. **CONCLUSIONS:** In this study of largely immigrant minority cancer patients, we found that a large proportion of patients needed economic and logistical support.

Research Implications: Future research should further explore the impact of multi-disciplinary interventions addressing social and economic barriers to cancer care for vulnerable populations.

Practice Implications: Providers should ascertain and address socioeconomic impediments to cancer treatment and survivorship care.

Acknowledgement of Funding: This research was supported by the New York Community Trust, the New York State Health Foundation, the Laurie Tisch Illumination Fund, and by grants from the National Cancer Institute # U54-13778804-S2 CCNY/MSKCC Partnership and T32CA009461 Institutional Training Grant. The contents of this article are solely the responsibility of the authors and do not necessarily represent the views of the awarding agencies.

S15-2

Developing a clinically, linguistically and culturally relevant survivorship care plan

Kimlin Ashing

City of Hope

BACKGROUND/PURPOSE: As we make strides in quality oncology care via the implementation of treatment summary and survivorship care plan (TSSCP), we have

the unique opportunity to attend to health equity and reduce health disparities. Despite increasing representation among cancer survivors and documented poorer outcomes, ethnic minorities are understudied in cancer survivorship research. **METHODS:** Built on survivor input ($n=58$), consensus review ($n=36$), and diverse stakeholder evaluation ($N=80$), the COH treatment summary and survivorship care plan (TSSCP) templates were structured to enhance clinical, cultural and linguistic responsiveness. We employed a patient-navigation model to implement patient education on the utility of TSSCP. **RESULTS:** Survivor input and consensus review required the inclusion of integrative, patient-centered care; a preamble to increase knowledge and usability; health history elements (e.g., chronic conditions and medications); health advisories (vaccines, nutrition and physical activity); symptom management and self-care; HRQOL (identifying sources of distress and spirituality); and local community and national resources into the TSSCP.

This TSSCP patient navigation intervention included 99 African-Americans and 68 Latinas. Knowledge of guidelines for appropriate cancer surveillance increased from 13.1% at pretest to 31.2% at posttest. Specifically, >60% of the BCS indicated 'strongly agree' to increased confidence in (1) ability to make healthy lifestyle changes, (2) knowledge about treatment and follow-up care, (3) communication between providers, (4) adherence to my follow-up care appointments and tests, (5) improving quality of care, (6) improving quality of life, and (7) communication with oncology and non-oncology providers.

CONCLUSIONS: Our intervention showed improvements in knowledge and confidence in engaging in the medical and self-care. We are pending follow-up data measuring impact on surveillance practice and survivorship outcomes.

Research Implications: Our clinical, linguistically and culturally relevant TSSCP templates, made available in English and bi-lingual English-Spanish, can be utilized in research targeting ethnically diverse populations.

Practice Implications: Our integrative template can be use to (1) educate and activate survivors into their medical care and self-care. (2) Inform survivors about their treatment and potential negative treatment effects to increase adherence to surveillance for side effects, second cancers and metastasis, and follow-up care. (3) Assist in symptom management and self care. (4) Bring awareness and engagement in health advisories and quality of life enhancements. (5) Facilitate provider-provider interaction and patient-provider communication for enhanced integrative and quality care for all.

Acknowledgement of Funding: California Breast Cancer Research Program and the City of Hope Excellence Program.

S15-3

Ethnic variations in physical symptoms explained by different follow-up care communication and socioeconomic well-being between Chinese and Caucasian breast cancer survivors

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BACKGROUND/PURPOSE: Chinese American breast cancer survivors, especially low acculturated, have been reported to have more unresolved physical symptoms than Caucasian survivors. This study tested whether poor physical outcomes among Chinese versus Caucasian survivors are explained by lower communication with physicians and less socioeconomic well-being (SWB). **METHODS:** Using California's 2008–2011 population-based cancer registry data, 220 Chinese and 216 Caucasians were enrolled to participate in a cross-sectional Chinese or English language telephone interview. They were aged over 20 years, diagnosed with stage 0–III breast cancer, had completed primary treatment within 1–5 years, and had no recurrence. Physical symptoms were measured by the number of self-reported side effects from treatment and the Charlson comorbidity index. Chinese were categorized by acculturation: low acculturation refers to <25-year US residency and limited English ability. Survivors' perception of communication quality with physicians and SWB (e.g., ability to afford care costs and access healthcare information) were assessed by validated questionnaires. Descriptive and logistic regression analyses were conducted. **RESULTS:** Low-acculturated Chinese had higher number of side effects (OR = 1.6, 95% CI 0.98–2.62, $p = .06$) and comorbidities (OR = 1.85, 95% CI = 1.19–2.86, $p < .01$) than Caucasians, controlling for age, cancer stage, time since diagnosis, and treatment type. There were no significant differences in outcomes between high-acculturated Chinese and Caucasians. Ethnic differences in physical symptoms were attenuated after adjusting for communication and SWB. Low-acculturated Chinese had poorer communication and SWB than high-acculturated Chinese and Caucasians (all $p < .0001$). **CONCLUSIONS:** Improving survivor–physician communication among low-acculturated Chinese breast cancer survivors and enabling them to access healthcare resources could improve their physical symptoms.

Research Implications: Cancer is the leading cause of death in Asian Americans. Breast cancer is the most common cancer in Chinese American women, who consist of the largest Asian survivor population in the

USA. Although most Chinese survivors are immigrants and meet cultural and linguistic challenges in accessing mainstream healthcare resources, little is known about their survivorship care process and physical outcomes. Therefore, this cross-cultural investigation of the relationship between Chinese and Caucasian breast cancer survivors' physical symptoms and care resources provides empirical evidence and specific implications on how to promote survivorship care and improve physical symptoms in this fast growing and underserved population.

Practice Implications: Our results suggest that Chinese survivors may experience poorer coordination of care due to the lack of quality communication with their follow-up care physicians and socioeconomic resources to access quality care in the mainstream systems. Therefore, assisting Chinese survivors with culturally competent care in clinical settings and providing them with culturally and linguistically relevant information about cancer and health care will be useful in reducing their physical problems and promote their quality of life.

Acknowledgement of Funding: Lance Armstrong Foundation Young Investigator Award and National Cancer Institute R21 Award (grant number: CA139408).

S15-4

Where is the science of culture in cross-cultural cancer survivorship? Native American cancer education for survivors: using technology for greater reach and benefit

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BACKGROUND/PURPOSE: 'Native American Cancer Education for Survivors (NACES)' is an online education program designed to improve the quality of life (QOL) of American Indian cancer survivors by increasing knowledge and informed choice through innovative, customized web-based technology. The website includes an extensive QOL survey, cancer- and survivorship-related content based on the Medicine Wheel (physical, mental-emotional, social, and spiritual health), video excerpts from about 90 Native survivors, sample questions for providers, and other interactive information. Survivor Navigators assist patient's completion of the QOL survey and learn to use the website effectively. Since 2003, the QOL survey has been revised four times to assess the changing facets of QOL, and in 2013, the project team added 75 new items, primarily from the

NIH PROMIS® measures as well as from physical activity surveys. About 1000 American Indian cancer patients have completed the survey, of which 75 patients' surveys included the new PROMIS items. These data document continuing health disparities, gaps in long-term and late effects of cancer, and other access issues that differ from those seen in non-Hispanic White survivors, such as less than 10% are able to access cancer care through Indian Health Service and more than 1/3 travel 200 miles or more ONE WAY to get to cancer services. Less than 1/4 of the survivors take part in moderate physical activity at least three times each week, and most of the long-term survivors continue to have issues with fatigue, unmanaged pain, and cognitive dysfunction. Survivorship Navigators provide services to address such inequities.

Research Implications: American Indian cancer survivors who have access to well-trained, Indigenous Native Patient Navigators are able to address many factors that impact QOL. Survivorship Native Patient Navigators need to be included with research intervention protocols to help address cancer health disparities.

Practice Implications: Healthcare facilities can provide financial support for well-trained Survivorship Native Patient Navigators to reduce barriers and improve access to services that can positively impact American Indian patients' QOL.

Acknowledgement of Funding: None.

S15-5

Developing a clinically, linguistically and culturally relevant survivorship care plan

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BACKGROUND/PURPOSE: Despite the recognition that culture is fundamental to human existence and provides meaning for life, surprisingly little focus on defining culture exists in health research, nor have standards been developed to guide the integration or application of this concept in health research. The goal of this presentation is to highlight a new, more scientifically grounded approach to and application of the use of the concept of culture in cancer care called the Cultural Framework for Health (CFH). **METHODS:** Two studies will be used to illustrate the six steps of the FCHR. The first is a study of social support needs among Vietnamese-, Chinese-, and Japanese-American breast cancer survivors in San Francisco and Los Angeles, California and Houston, Texas. The second study involved members and leaders of Pilipino,

Samoan, and Chinese- and Korean-American breast cancer support groups in Los Angeles. **RESULTS:** Both studies utilized a mixed methods design. The results demonstrate the value of utilizing the FCHR to uncover unique cultural influences on breast cancer survivorship. We found that both the goals of survivorship and the means to achieve them differed from the goals and values that are emphasized in non-Hispanic White cancer support programs. These differences are cultural and may also indicate why Asian American and Pacific Islanders rarely use mainstream breast cancer support groups and services. **CONCLUSIONS:** Culture is currently poorly conceptualized and operationalized in cancer care. This Framework of Culture in Health Research provides a solid basis upon which to build a science for cross-cultural psycho-oncology.

Research Implications: Health disparities have not been eliminated despite 40 years of research funding. We propose that accurate use of 'culture' as a lens to view health and health behavior in both research and practice is the missing link that would provide more useful insights into how culture impacts well-being.

Practice Implications: Our model provides a practical framework to expand our understanding of what diversity actually means and how to better apply this understanding to support better quality care for a multicultural patient population as well as a diverse health professional workforce.

Acknowledgement of Funding: 1R01CA158314-01 R01 NIH/National Cancer Institute Administrative Supplement: Operationalizing culture for Health Behavior and Social Science Research (PI).

S16-1

Dissemination and implementation (DI) of a biobehavioral intervention

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BACKGROUND/PURPOSE: Multiple reports from the US Institute of Medicine and other nations view psychosocial care for cancer patients to have poor availability, and even when offered, it is not evidence based. The failure to focus on DI of empirically supported treatments (ESTs) for cancer patients was recognized only recently. In the context of ongoing DI efforts, mental health professionals completed a 3-day training institute in an empirically supported biobehavioral intervention (BBI) for cancer patients, and efficacy and outcome was assessed.

Summarize data on the components and efficacy of the BBI education and training model of providers in addition to discussion of modeling predictors of BBI. **METHODS:** Mental health providers ($N=92$) attended 3-day BBI Institutes, which used multi-method instruction including lectures (40%; didactics), role play and discussion (20–35%; experiential), and BBI usage (25%; practice). Trainees were licensed providers (50% psychologists) from medical or community centers. Post-institute trainees reported BBI usage. **RESULTS:** Trainees' BBI knowledge and clinical skill, attitudes toward ESTs, and their self-efficacy increased from pre- to post-training ($ps < .01$). Also, using the Theory of Planned Behavior BBI-specific attitudes and self-efficacy predicted intent to use the BBI ($ps < .05$). Post-institute, attitudes toward the BBI (2 months) predicted intent to use (4 months) which then predicted BBI usage (6 months) ($ps < .01$). **CONCLUSIONS:** The BBI training model evidences effective dissemination and moreover results in EST usage, the key outcome of implementation.

Research Implications: Funding is needed for empirically supported training models that educate and support providers' usage of ESTs.

Practice Implications: Providers need be selective in choosing continuing education opportunities that are multicomponent and teach ESTs.

Acknowledgement of Funding: Research supported by the NIH/NCI (CA163197; CA098133).

S16-2

Disseminating methods for implementing comprehensive biopsychosocial screening: a national and international perspective

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BACKGROUND/PURPOSE: National and international organizations have recommended that distress be assessed as part of routine cancer care. Considering the importance of these endorsements, an NCI R25-E training program was developed to teach healthcare professionals to implement biopsychosocial screening programs. The purpose of our presentation is to introduce this unique training program. A past trainee will share her experiences of implementing the program in Brazil. **METHODS:** The training program is offered nine times during the 5-year tenure of the award and trains 360 cancer healthcare professionals in how to implement biopsychosocial screening programs. The program includes eight

pre-workshop webinars, a 2-day skills-based workshop incorporating faculty-led interactive clinical experiences, and supervised participation in the clinical implementation of a biopsychosocial screening program, including follow-up support of four post-workshop webinars, eight post-workshop faculty–trainee conference calls, and a web-based Discussion Board. **RESULTS:** The training program began in April 2013. Two of the nine planned workshops have been successfully conducted. The interest from healthcare professionals has been much higher than anticipated. To date, 87 healthcare professionals have been trained from institutions and community cancer settings across the United States as well as Brazil and China. 96% of the participants *agreed* or *strongly agreed* they were satisfied with the workshop. In addition, this training program allowed a Brazilian Cancer Center to improve their existing screening program. **CONCLUSIONS:** Dissemination of effective biopsychosocial screening implementation strategies has impacted institutions' ability to meet the distress screening guidelines and standards. Overall, this training program has successfully impacted cancer care nationally and internationally.

Research Implications: The research implications of this training program are to increase the number of biopsychosocial screening programs implemented in institutions and community settings, thus providing screening data to further understand the biopsychosocial needs of cancer patients globally.

Practice Implications: This training directly impacts the quality of clinical care provided in the trainees' institutions and community settings. Additionally, the great diversity in trainees, national and international, physician, nurses, social workers, chaplains, and psychologists creates unique and innovative opportunities to fine tune biopsychosocial screening to specific populations linked to tailored interventions.

Acknowledgement of Funding: Funded by NCI Grant # 1R25CA174444-01.

S16-3

From theory to practice: disseminating what we know to what we actually do

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BACKGROUND/PURPOSE: The 2008 IOM Report concluded that although there is substantial scientific evidence that supportive care interventions yield robust benefits, delivery of such services is rarely coordinated or integrated with ongoing cancer care. According to the

NCCN, high quality, comprehensive supportive care programs at cancer treatment centers are the exception rather than the rule. To address this pressing need, an NCI R25E training program was developed to teach cancer healthcare professionals and administrators to build, implement and evaluate supportive care programs. **METHODS:** Ten 3-day workshops for a total of 500 healthcare professionals are offered across 5 years of the award. The workshops occur twice yearly, alternating between California and NYC. The goal of the training program is for competitively selected trainees to implement comprehensive supportive care programs. A systematic multi-modal approach (with ongoing faculty/peer support) focuses on proven strategies for culture change. **RESULTS:** The training program began in September 2012. Four of the 10 planned workshops have been successfully conducted. The interest has been much higher than anticipated. To date, 252 healthcare professionals from a total of 62 settings across 30 states, Italy and Australia have been trained. 98% reported the training *was timely and will influence my practice*, and 97% reported the training *will assist me in improving patient care*. At 6 months following the workshop, there was a significant *increase* in the number of business plans developed and staff. **CONCLUSIONS:** Sustained ongoing multi-modal professional education programs have the potential to translate evidence-based cancer care into clinical practice.

Research Implications: In 1847 in Hungary, Ignaz Semmelweis documented the disastrous effects on pregnant women when evidence-based knowledge was not translated into clinical practice. In 2015, it is still a challenge to get healthcare workers to wash their hands in between patients. Dissemination of evidence-based practice continues to be a major challenge in every country. There is a growing body of evidence that highly interactive, multi-modal, sustained, problem-based learning leads to changes in clinical behaviors and as significantly—improved performance outcomes. It is now time to apply these same techniques to subpopulations and to evaluate health promoting behaviors.

Practice Implications: The Medical Model is steeped in tradition, hierarchy and resistance to change. Crossing the chasm from evidence to clinical practice has been challenging and precarious. Clinicians can greatly benefit from highly focused skills-related programs that are immediately applicable to their home settings. Within this professional-friendly and safe setting, the quality gap between what the data teach us and what is done in clinical practice can be bridged with compassionate expertise.

Acknowledgement of Funding: Funded by NCI Grant # 1R25CA160049-01A1.

S17-1

The Psychosocial Services Program of The Children's Hospital of Philadelphia (CHOP) Cancer Center: translating research into practice

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BACKGROUND/PURPOSE: The Psychosocial Services Program of the CHOP Cancer Center provides services based on the Children's Oncology Group Blueprint and the Preventive Pediatric Psychosocial Health Model (PPPHM). **METHODS:** Services (PPPHM universal, targeted, clinical levels), utilization, and effectiveness are described. **RESULTS:** Services reach over 500 newly diagnosed children/families each year, along with those in active treatment or survivorship. The team includes social workers, child life specialists, art and music therapists, psychologists, chaplain, teachers, and a patient/family educator. Evidence-based approaches are incorporated throughout, and research and quality improvement initiatives are translated into practice. *Universal interventions* strengthen resources, address distress, and promote resilience: educational materials, child life interventions, social work services, Hospital School Program, support groups, and web-based resources. Patient/family education partners oncology nurses with the psychosocial team; program evaluation indicates its feasibility and value. At all stages of care, psychosocial screening and social work assessment identify needs/strengths allowing for targeted interventions, and a navigator provides resources to over 150 families yearly. *Targeted programs*, provided to patients/families at risk for difficulties and documented as helpful, involve medical play/procedure preparation (child life), supportive counseling (social work), spiritual care (chaplain), creative arts therapies, school reintegration/education liaison, and neuropsychological evaluation. *Clinical interventions* address significant psychosocial challenges, unmanaged symptoms, or adherence issues through psychology consultation/intervention and care conferences initiated by referral for ~200 patients yearly. **CONCLUSIONS:** By matching evidence-based services to need and advancing care through quality improvement initiatives, our care model optimizes medical care, reduces distress, and promotes positive adaptation throughout treatment and survivorship.

Research Implications: Evaluation of barriers to and effectiveness of implementation of evidence-based

psychosocial assessments and interventions in pediatric cancer centers is indicated.

Practice Implications: Application of this clinical care model can guide allocation of resources in clinical practice in pediatric cancer centers. By using key programs at each level of the preventive pediatric psychosocial health model, clinicians can improve psychosocial care for children with cancer and their families at each stage of cancer treatment through survivorship.

Acknowledgement of Funding: None.

S17-2

Pediatric psychosocial care in oncology

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BACKGROUND/PURPOSE: The need for psychosocial care of pediatric oncology and BMT patients is well documented. No guidelines exist for ideal care provision in pediatric oncology. This presentation will describe psychosocial care delivery where patients are screened and triaged to varying intensities of care. **METHODS:** Newly diagnosed patients are assigned a social worker who screens the patient and family using the Psychosocial Assessment Tool 2.0 and clinical interview. A child life specialist meets newly diagnosed patients to prepare them for the medical setting, procedures, provide age-appropriate activities and education about diagnosis. The pediatric psychologist serves as a consultant inpatient and outpatient. Automatic consults are sent to the psychologist for clinical risk groups on the PAT and/or disease prognosis less than 30% survival. The psychologist also receives consults from providers based on their perception of patient needs. **RESULTS:** N/A. **CONCLUSIONS:** This presentation describes the implementation of a psychosocial model from a children's hospital with 130 newly diagnosed cancer patients a year. The psychosocial team consists of four clinical social workers, 1.5 child life specialists, and one psychologist who manages the team. Primary reasons for referrals from medical providers will be reported. Examination and comparison of provider referrals and PAT screen referrals will also be provided. Percentage of time spent in clinical and administrative activities will be reported for the multidisciplinary team members.

Research Implications: Data on implementation of risk screening and triage of psychosocial needs in a pediatric practice setting will be helpful to inform new research.

Practice Implications: Implementation of a triage and needs-based model of psychosocial care can inform clinical practices at other institutions.

Acknowledgement of Funding: None.

S17-3

Promoting positive adjustment for sibling donors of bone marrow: a psychosocial model of care at a single institution

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BACKGROUND/PURPOSE: Research on psychosocial functioning and care of pediatric sibling donors of bone marrow is limited. Extant literature suggests that sibling donors can be adversely impacted by their experience—particularly when their role in decision making is limited—and therefore would benefit from more comprehensive assessment, developmentally appropriate education, and intervention. **METHODS:** Children's National Health System, a large Mid-Atlantic urban hospital, conducts over 40 allogeneic bone marrow transplants annually, with half involving matched sibling donors. Team members developed a protocol to recognize donor rights and optimize psychosocial care of siblings before and after donation. An initial pre-transplant evaluation, conducted by the psychology team, assesses siblings' understanding of transplant, attitudes toward donation, and general psychosocial functioning. Follow-up evaluations are conducted 1- and 3-month post-transplant to monitor ongoing adjustment and provide support and brief intervention as needed. If transplant outcome is poor, additional support and services are provided. **RESULTS:** Data on anxiety and health-related functioning are collected at assessment points using evidence-based measures [e.g., Screen for Child Anxiety Related Disorders (SCARED); Patient Health Questionnaire-9 (PHQ-9)]. Satisfaction levels and feedback from patients and caregivers are gathered and used to improve the process and quality of care. **CONCLUSIONS:** Using this model, we have increased attention to the rights and needs of sibling donors, in line with calls from the National Marrow Donor Program and American Academy of Pediatrics. This protocol enhances and standardizes support and ethical care of sibling donors throughout transplant and may serve as a model of family-centered care for other transplant centers.

Research Implications: Satisfaction levels and feedback from patients and caregivers may provide support for the efficacy of current protocol, as well as better inform future directions in methods of delivering appropriate assessment and care. In addition, prospective, longitudinal data on the adjustment of sibling donors throughout the transplant process is lacking; data from this protocol of care may inform larger scale studies with this vulnerable population.

Practice Implications: This protocol of care aims to recognize the psychological needs of sibling donors

of bone marrow by identifying any early risks or ongoing psychosocial concerns through the transplant process, as well as to provide any intervention and support as needed. Furthermore, this model of care may serve as a guide for other pediatric transplant centers in providing comprehensive assessment and care for sibling donors.

Acknowledgement of Funding: None.

S17-4

Model of care at Nationwide Children's Hospital (NCH)

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BACKGROUND/PURPOSE: NCH is the third busiest pediatric children's hospital nationally. The division of Hematology/Oncology and Bone Marrow Transplant at NCH is one of the largest in the country. The success of psychosocial services at NCH is due to its comprehensive, coordinated, and integrated psychosocial services program with an emphasis on empirically supported clinical care. **METHODS:** At NCH, all newly diagnosed patients are provided with psychosocial services throughout the treatment trajectory. Services that are available to patients and families include pediatric psychology and neuropsychology, social work, child life, therapeutic recreation, music, art, and massage therapy, pastoral care, academic support while inpatient, and school liaison services. The Psychosocial team is actively involved in quality improvement projects, program development, most recently in the areas of Adolescent and Young Adult social support, wellness/positive self-image promotion, and a newly developed assessment protocol and treatment intervention for patients eligible for MIBG. Psychologists and social workers serve as psychosocial liaisons to disease specific teams within Oncology and, as such, regularly attend disease-specific huddles and working groups. **RESULTS:** There were 180 new cancer diagnoses in 2014 and 61 BMT patients treated at NCH. Additional patient demographics, number of patient interactions, assessment and intervention methods, and program evaluation will be discussed. **CONCLUSIONS:** There is benefit for patients and families in receiving comprehensive psychosocial care.

Research Implications: Program data will be discussed.

Practice Implications: Benefits and challenges of working within a large hem/onc/bmt psychosocial structure will be discussed.

Acknowledgement of Funding: None.

S17-5

Standard of psychosocial care for pediatric BMT/HSCT admissions

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BACKGROUND/PURPOSE: Children undergoing BMT/HSCT are at increased risk for depression, anxiety, and psychological distress. They often experience pain, nausea, long hospitalizations, and non-adherence, and suffer the impact of previous illnesses, making them prime candidates for psychological intervention. We aim to describe our standard of care psychosocial service model for all admitted BMT/HSCT patients. **METHODS:** All admitted BMT/HSCT patients receive a standard of care psychology consult assessing readiness for transplant and areas of need, and develop rapport in anticipation of further intervention needs. We attend family centered bedside rounds and provide targeted intervention at least weekly. Data regarding our consult service are gathered for QI purposes. **RESULTS:** Between October 2011 and November 2014, there were 154 BMT consults (*M* age=12.6 years (2 months–31 years); 56% male; 79% Caucasian). 68% were seen by psychology attending and 32% by psychology trainee. Length of stay varied from 1 to 196 days (*M*=27.4). Mean number of contacts=3.3 visits (range 0–16) with 53% seen once or twice (34% were repeat consults). Interventions included problem-focused coping (23%), support (19%), assessment only (19%), CBT (15%), and relaxation (8%). Outpatient therapy was recommended for 1/3 of patients. **CONCLUSIONS:** Our data suggest that psychological care during admission for BMT/HSCT needs to quickly and effectively address problems. Psychologists need to be able to meet the needs of a diverse range of developmental needs.

Research Implications: Future research is needed exploring outcomes of this and other models of BMT/HSCT psychology intervention.

Practice Implications: Intervention strategies targeting the diverse needs of the pediatric BMT/HSCT population will be discussed. We will advocate for this model as the standard of care for youth admitted for BMT/HSCT.

Acknowledgement of Funding: None.

S18-1

Psychosocial similarities between coping with cancer and aging

Mindy Greenstein
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BACKGROUND/PURPOSE: As elders are the fastest growing population of cancer patients, it is incumbent on clinicians to understand how their needs might be similar to and different from younger cancer patients, who have been the focus of much psycho-oncology research. Elders face the ‘double whammy’ of dealing with aging, as well as cancer, and learn to cope with their illness within that context. This talk focuses on the similarities and differences between coping with issues related to aging and those related to cancer. **METHODS:** This talk is a theoretical discussion of clinical observations of cancer patients of all ages at Memorial Sloan Kettering Cancer Center, as well as observations of older adults without cancer diagnoses. **RESULTS:** Similarities between coping with cancer and the negative aspects of aging include the following: Coping with the sword of Damocles while living a normal daily life; Uncertainty and vulnerability; Learning to make the most of the ‘now’; Focusing on what is most meaningful in life; Reinforcing character strengths and virtues that are most adaptive.

Differences: Younger cancer patients are aware of how uncommon their experience is compared to others their age, while those coping with aging alone are aware that their experiences are common among others their age; People dealing with issues of aging have had long life experiences dealing with crises of one sort or another and can use what they have learned to help them cope with negative aspects of aging. Younger cancer patients, by contrast, will have had fewer experiences of dealing with life crises. **CONCLUSIONS:** Learning to cope with cancer and the negative aspects of aging have much in common and can reinforce each other; learning to cope with one can help people learn to cope with the other.

Research Implications: Inspiring further research on how older populations cope with cancer illness and treatment, and different ways clinicians might approach them.

Practice Implications: Clinicians treating older cancer patients can help them take the coping skills that have been developed through dealing with losses and infirmities due to age and apply them to coping with their cancer illness and treatment.

Acknowledgement of Funding: None.

S19-1

Incorporating evidence-based smoking cessation into community oncology practices: feasibility and preliminary efficacy of an enhanced quitline-based smoking cessation intervention for cancer survivors

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BACKGROUND/PURPOSE: Cancer patients who smoke after diagnosis risk adverse psychosocial and treatment outcomes. We tested the feasibility and preliminary efficacy of a treatment approach combining brief in-person counseling, quitline telephone counseling, and 6 weeks of nicotine replacement. **METHODS:** We trained 46 oncology nurses and research associates at 13 National Cancer Institute Community Clinical Oncology Program (CCOP) sites and enrolled 146 cancer survivors who had smoked in the last 7 days. Survivors were randomized to enhanced quitline intervention ($n=98$) or usual care ($n=48$). We assessed self-reported smoking status at 12 and 24 weeks. Secondary outcomes included perceived stress (10-item Perceived Stress Scale), depression (CESD-10), and quality of life (FACT-G). Intervention differences in these outcomes were assessed using mixed effects repeated measures models, controlling for baseline values. **RESULTS:** Participants were predominately female (75%) and non-Hispanic White (79%), with lung (53%) or breast (34%) cancer. Participants and study staff reported high levels of satisfaction with the intervention. At 24 weeks, self-reported 7-day point prevalence cessation was 31% in the quitline group and 21% in the usual care arm ($p=.34$), but dropped to 15% and 13% if non-completers were assumed to be smoking ($p=.65$). At 24 weeks, perceived stress was slightly higher in the quitline group (LS mean=20.2) compared to usual care (LS mean=16.4, $p<.01$), but there were no significant differences for the CESD-10 or the FACT-G. **CONCLUSIONS:** This intervention approach utilizing oncology professionals and existing quit resources appears feasible in community practices but may need to be augmented to achieve higher quit rates.

Research Implications: Low-moderate intensity smoking cessation interventions appear feasible to deliver in community oncology practices, but stepped care approaches tailored on smoking or psychosocial factors and/or higher intensity interventions may be needed to improve quit rates for cancer survivors.

Practice Implications: Oncology clinic staff can be trained to deliver brief smoking cessation interventions to enhance non-oncology specific counseling available through state tobacco quit lines. Psychosocial concerns may be common among smoking survivors and should be monitored during treatment.

Acknowledgement of Funding: This study was supported by the Wake Forest CCOP Research Base (5U10 CA081851).

S19-2

Smoking relapse prevention intervention for cancer patients

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BACKGROUND/PURPOSE: Cancer patients who continue to smoke are at risk for several negative outcomes including a reduction in treatment efficacy and poorer survival. Many cancer patients spontaneously quit smoking after diagnosis; however, high smoking relapse rates underscore the need for implementing smoking relapse-prevention interventions in the oncology setting. Prior qualitative and quantitative work conducted by our group has identified several intervention targets including patient-provider communication, patient intervention preferences, and predictors of smoking relapse among cancer patients (Simmons et al., 2009; 2012; 2013). We will summarize prior work related to smoking relapse among cancer patients and describe the methodology for developing and testing the first smoking relapse-prevention intervention for cancer patients. **METHODS:** A series of systematic and iterative steps, including learner verification, were used to create a multi-pronged intervention designed for cancer patients. This multimodal intervention includes a series of booklets and a DVD entitled *Surviving SmokeFree*. **RESULTS:** Previous research informed the DVD content including benefits of staying smoke free, coping with smoking urges, and overcoming emotional and physical challenges of a cancer diagnosis. Patient testimonials, provider interviews, and smoking expert interviews are included. Baseline data from an ongoing randomized clinical trial testing this intervention ($N=414$) will be presented, with an emphasis on comparing smoking-related and nonsmoking-related cancer patients. **CONCLUSIONS:** Given the clinical implications of continued smoking, greater provider awareness and understanding of smoking relapse among cancer patients is paramount. Smoking-relapse prevention interventions that are self-administered can extend the reach of interventions in the oncology setting.

Research Implications: To date, few studies have examined smoking relapse among cancer patients. Our work advances research by developing and testing the first relapse-prevention intervention for cancer patients in a randomized clinical trial.

Practice Implications: Given the significant clinical implications of continued smoking, greater provider awareness and understanding of smoking relapse among cancer patients is paramount.

Acknowledgement of Funding: NCI R01CA154596.

S19-3

Integrating tobacco treatment into Cancer Care: details of implementation

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BACKGROUND/PURPOSE: Despite the American Society of Clinical Oncology's call for tobacco to be addressed with all cancer patients who smoke, 10–30% of cancer patients are smokers around the time of diagnosis; most of these patients will not receive treatment for their tobacco use. To improve the cancer treatment experience and cancer treatment outcomes of cancer patients who smoke, it is critical to intervene upon smoking around the time of diagnosis. However, patient barriers (e.g., being too overwhelmed), system barriers (e.g., lack of smoking status documentation and no referral sources), and clinician barriers (e.g., lack of tobacco treatment knowledge) can contribute to cancer patients' lack of tobacco treatment access. We will present our lessons learned in the unique challenges and opportunities in intervening with cancer patients. **METHODS:** We are currently conducting a randomized trial to compare the differential effectiveness of delivering an Intensive Treatment (11 motivational counseling sessions plus 12 weeks of cessation medication) versus Standard Care (motivational counseling sessions plus medication advice) with 300 patients at two academic medical centers in Boston and New York; to date, we have recruited 73 patients. **RESULTS:** We will describe our recommended tobacco counselor training that is specialized for cancer patients. We will detail how to identify smokers and integrate into a cancer care setting. We will describe our system of outreach to patients (about 50% of eligible patients have enrolled) and the patient population (e.g., among enrollees, the median distress scale on the NCCN thermometer=8). Finally, we will give an in-depth overview of the content of our intervention treatment, including counseling topics (e.g., depression: one-third of enrollees endorsed a PHQ-9 of >10 and pain: 31% endorsed having 'moderate-extreme' pain) and medication selection and adherence. **CONCLUSIONS:** We will close with recommendations for implementing this work into other cancer care settings.

Research Implications: This work will demonstrate how psycho-oncology researchers and integrate evidence-based treatments into the critical time of diagnosis for patients. We will detail intervention, measurement, and implementation mechanisms.

Practice Implications: Psycho-oncology clinicians will know about the characteristics and challenges of their cancer patients who smoke. They will learn the content and delivery of tobacco counseling, targeted for the specific needs of their cancer patients.

Acknowledgement of Funding: NIH/NCI 5R01CA166147.

S20-1

A lack of training for the supervisor: supervisee-focused supervision in psychosocial oncology

Nicole Taylor
University of Denver

BACKGROUND/PURPOSE: Supervision is one of the most commonly endorsed practice activities and ‘signature pedagogy of the mental health professions’ that clinicians report engaging in throughout their careers (Barnett et al, 2007); however, there has been very little written about how to train supervisors. We will discuss the limited existing international literature on supervision in oncology and health settings as well as the results from our survey. **METHODS:** A brief online, descriptive survey of APOS members was conducted to determine the type, amount, and content of training that current supervisors of trainees in oncology settings have received. **RESULTS:** The results of the study indicate widely varying levels of supervision training for supervisors in the field. A discussion of the varying theories of supervision endorsed including developmental, psychodynamic, existential, and supervisee-focused theories of supervision will be contrasted. **CONCLUSIONS:** Our recommendations for psychosocial oncology supervisors include integrating competency-based supervision training in graduate programs, developing robust continuing education courses around supervision, and integrating shadowing and interactive supervision as well as supervision-of-supervision into training.

Research Implications: Next steps for research directions include a qualitative study of supervisors and an intervention study to determine the efficacy of proposed supervision training guidelines.

Practice Implications: We will share sample training frameworks including how to design an effective shadowing orientation, how to develop a Cancer 101 boot camp for new trainees, how to screen applicants for fit in an oncology setting, and how to effectively and appropriately support emotionally distressed supervisees that participants can immediately implement in their clinical settings.

Acknowledgement of Funding: None.

S20-2

Wearing the tri-cornered hat: a supervision case study

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BACKGROUND/PURPOSE: This presentation will demonstrate the importance of integrating the three different roles in supervision: consultant, educator, and counselor. **METHODS:** This supervisee is a post-doctoral fellow in a bone marrow transplant program. No assessment data or diagnosis is relevant for this case.

The consultation role was utilized to help this supervisee conceptualize how treatment side effects affected cognitive changes in a particular patient and how to utilize brief therapy interventions with patients and caregivers in couple’s therapy.

Education was provided around how to navigate communication on an interprofessional team as conflicts arose. The education role also encompassed professional development as she was navigating her preferences for research or clinical practice in her future career.

Though counseling is not directly provided in supervision, emotional support is particularly important for psychosocial oncology trainees. In this case, a patient who was a young father was encouraged to seek additional chemotherapy when the physician estimated a low possibility that it would help. Subsequently, his disease progressed quickly, and he was told he had less than a week to live. Discussing the supervisee’s reactions and encouraging emotional processing and self-care were critical parts of supervision around this case.

RESULTS: The specific interventions used included case consultation and conceptualization discussion, psychoeducation, and counseling for countertransference reactions. The supervisee’s direct feedback about what was helpful about her supervision experiences will demonstrate the mechanisms of change in this case. **CONCLUSIONS:** Supervision in psychosocial oncology is most effective when it is developmentally appropriate and integrates consultation, education, and counseling.

Research Implications: Ideas for future research on supervision in psychosocial oncology will be suggested and discussed as they relate to this case.

Practice Implications: Suggestions for improving the training of supervisors will be integrated into this case presentation.

Acknowledgement of Funding: None.

S20-3

Setting goals in supervision: clarifying what psycho-oncology supervisees need to know and experience

Mark Moore

Moore Psychotherapy Care LLC

BACKGROUND/PURPOSE: As part of a symposium on developing standards for the training of supervisors within the field of psycho-oncology, this paper will develop a framework for that discussion by clarifying what specific factors are unique to such supervision and what core competencies must be conveyed to supervisees. **METHODS:** A brief online, descriptive survey of APOS members was conducted to determine the how supervision is provided and what the most common goals of supervision are. **RESULTS:** Issues that are unique to supervision in psycho-oncology include (i) a need for familiarity with relevant medical information and how to incorporate it into the treatment of the patient; (ii) how reality factors such as physical weakness, interruptions due to medical treatment, and financial concerns can impact the frame of psychotherapy; (iii) the necessity of working well with professionals from different disciplines; (iv) addressing supervisee concerns about working with cancer patients; and (v) attention to common countertransference reactions to patients. **CONCLUSIONS:** The creation of standards for supervision requires clarity about the necessary knowledge, core competencies, and professional and emotional issues that are unique to supervisees working with cancer patients.

Research Implications: There is a marked absence of research on the topic of training needs for supervisors and supervisees within the field of psycho-oncology. Results of an online pilot study on this topic will be used to outline the form that supervision currently takes and to formulate future research topics.

Practice Implications: Clinicians who currently supervise professionals providing therapy to cancer patients will recognize themes and concerns that arise in such supervision and learn how to address common problems.

Acknowledgement of Funding: None.

S20-4

Perceived importance of psycho-oncology clinical guidelines for Chinese cancer patients and health professionals

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BACKGROUND/PURPOSE: Chinese Psycho-Oncology Society (CPOS) will develop Chinese Psycho-Oncology Clinical Guideline to assist health professionals to provide optimal and evidence-based psycho-oncological care to Chinese cancer patients. The purpose of this study is to assess the perceived importance of psycho-oncology clinical guidelines for cancer patients and health professionals in China. **METHODS:** A multi-centered, cross-sectional survey was investigated by CPOS in 31 hospitals in 20 provinces all over China. The assessment instrument consists of 54 items including 33 'repeatable' and 21 'once-only' items. The questionnaires were mailed to the co-investigators in each hospital and posted back after completion. **RESULTS:** Overall, there were 513 of 550 (93%) cancer patients and 539 of 550 (98%) health professionals who completed the questionnaires. The top three 'repeatable' and 'once-only' items rated by the patients as very essential were both focus on disease and treatment-related information provision. Six for 'repeatable' items and three for 'once-only' items of the patients' 10 top-ranked items were not ranked in the top 10 by health professionals. The female patients rated eight items significantly more essential but one item less essential than male patients. The younger patients rated significantly more essential on some disease and treatment-related information provision. **CONCLUSIONS:** The Chinese cancer patients' preference for information highlights the need for health professionals caring for cancer patients to respond, which should be considered when the clinical guideline is developed. Some issues perceived both essential by patients and health professions but thought to be hard to implement should be explored as the barriers on the implementation in the near future.

Research Implications: This study is the first to assess psycho-oncological preferences in Chinese cancer patients and health professionals, which provide some evidence for the development of Chinese clinical guideline on psycho-oncological practice.

Practice Implications: The clinical guideline has very important meaning on psycho-oncological practice in China, which should be a milestone on the development of psycho-oncology in China. The guideline should make it realistic to integrate the psycho-oncological care into routine cancer care in China. More cancer patients and families should benefit from the clinical guideline.

Acknowledgement of Funding: High-end Foreign Experts Recruitment Program (GDJ20141100011).

S20-5

Competency-based clinical supervision: new developments in the United States

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BACKGROUND/PURPOSE: Many mental health professionals working in psycho-oncology offer clinical supervision to trainees. Importantly, there has been a shift in the last decade to conceptualize clinical supervision as a professional competency for therapists in the United States. As such, in 2014, the American Psychological Association approved the *Guidelines for Clinical Supervision in Health Service Psychology*; the document outlined the meta-theoretical approach of competency-based supervision by addressing seven domains of supervision. Therefore, the focus of this presentation will be how these seven domains translate into practice for clinical supervisors working in cancer care. **METHODS:** Drawing on the research literature and professional guidelines, this talk will address optimal performance expectations for clinicians who supervise in psycho-oncology. Issues such as Supervisor Competence, Diversity, Supervisory Relationship, Professionalism, Assessment/Evaluation/ Feedback, Problems of Professional Competence, and Ethical, Legal, and Regulatory Considerations will be discussed. Clinical examples will be provided to illustrate the concepts presented. **RESULTS:** This presentation will provide clinical supervisors who practice in psycho-oncology with an introduction to the meta-theoretical approach of competency-based supervision, as well as an overview of performance expectations as recently determined by the American Psychological Association. **CONCLUSIONS:** Clinical supervision is critical for trainees who are new to the field of psych-oncology, and it is important for supervisors to be competent and responsive to students' training needs. Therefore, a review of competency-based supervision and its implications can support participants to continue delivering quality supervision in cancer care.

Research Implications: There is a lack of research regarding clinical supervision; thus, the efficacy of the *Guidelines for Clinical Supervision in Health Service Psychology* needs evaluation. Additionally, as there is no known published research into clinical supervision in psychosocial oncology, the field will benefit from studying how this distinct professional activity is delivered.

Practice Implications: Clinical supervision is critical to ensure that students are getting good training in the field of psychosocial oncology and, even more importantly, to ensure that our patients are receiving excellent, ethical care.

Acknowledgement of Funding: None.

S21-1

Finding My Way: uptake and satisfaction with an Internet self-help program for cancer-related distress

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BACKGROUND/PURPOSE: Online self-help holds promise for overcoming access barriers to conventional therapist-administered psychosocial interventions. We have undertaken a multi-site RCT of a six-module Internet Cognitive Behaviour Therapy-based support program aiming to reduce cancer-related distress and improve coping ('Finding My Way'), with the primary objective of evaluating the program's efficacy and secondary objectives of examining program uptake, satisfaction, and adherence. This presentation focuses on the latter objective. **METHODS:** Cancer patients treated with curative intent (target $n=188$) are randomized to receive either the *Finding My Way* intervention or an attention control. Measures include uptake, reasons for decline, and indices of adherence and post-treatment satisfaction. **RESULTS:** As of 31st January 2015, of 317 approached eligible patients, 124 (39%) had enrolled and 120 (38%) had declined. Most common reasons for decline included the patient coping well enough (23%) or not having time (17%). Enrolled participants (mean age 54.2 years) were predominantly female (85%), married (76%), breast cancer patients (65%), and predominantly employed (63%). In participants who had received all modules ($N=113$), adherence was high with 63% accessing four or more modules. Post-treatment, 63% intervention and 75% control respondents rated program content 'quite' or 'very' helpful. Challenges of multi-site recruitment include IT challenges and representation across sex and cancer types. **CONCLUSIONS:** Satisfaction with content is moderate to high; while uptake has been biased toward female breast cancer patients, representation of males and other cancer types has increased.

Research Implications: This presentation will be relevant to researchers interested in innovative approaches to challenges in the provision of psychosocial care to cancer patients, as it gives an overview of uptake, adherence, and satisfaction data and reports challenges in recruiting to one of the only large RCTs assessing a psychological therapeutic intervention aimed at patients with any curatively treated cancer type and implemented in the immediate post-diagnosis period.

Practice Implications: Information on patient uptake, adherence, and satisfaction with the Finding My Way intervention will give an indication as to the potential future usefulness of the Finding My Way intervention being offered to patients newly diagnosed with cancer as a means of reducing patient distress and improving coping

while overcoming access barriers to traditional face-to-face psychological therapy.

Acknowledgement of Funding: This work was funded by NHMRC Project Grant #1042942.

S21-2

The impact of an online psychological support program for men with prostate cancer on sexual satisfaction: RCT results from My Road Ahead

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BACKGROUND/PURPOSE: This study aimed to develop and assess the efficacy of a unique online psychological intervention that is accessible, user friendly and engaging to men with prostate cancer and that includes a large component focussed on the impact of prostate cancer treatment on sexual outcomes including sexual satisfaction, masculine self-esteem and relationship intimacy. **METHODS:** My Road Ahead is an online CBT-based self-directed intervention delivered over six modules. Participants were randomly assigned to one of three (3) intervention arms. Group 1: online intervention; Group 2: online intervention plus access to the moderated forum; Group 3: moderated forum only. Participants completed the DASS-21 (Lovibond & Lovibond, 1995), the Prostate Cancer-Related Quality of Life scale (PCa-QoL; Clark et al., 2003), the IIEF (Rosen et al., 1997), the Dyadic Sexual Communication Scale—short form (Catania, 1998), the Communication Pattern Questionnaire—Short Form (CPQ-SF; Christensen & Heavy, 1990) and the Kansas Martial Satisfaction Survey (Schumm, Nichols, Schectman & Grigsby, 1985). **RESULTS:** This paper presents preliminary results from 142 participants who were randomly assigned to the three groups. The majority of men had undergone a radical prostatectomy (88%). Sexual satisfaction levels at baseline were low across groups. Participants who received access to the program plus the forum showed a significant improvement in sexual satisfaction ($t(34)=3.61$, $p=.001$), and regression analyses indicated that this improvement was associated with improvements in participant sexual confidence and masculine self-esteem. Structural equation modelling was also undertaken, and this analysis indicated that participants with low levels of sexual confidence, orgasm function and masculine self esteem are likely to benefit the most from the program. **CONCLUSIONS:** This is the first randomized controlled trial to assess the efficacy

of a self-directed online psychological intervention for men with prostate cancer that we are aware of. These preliminary results indicate that the intervention in combination with access to a moderated forum provides an effective intervention in improving sexual satisfaction, sexual confidence and masculine self-esteem. The anonymity of the online medium could also provide a forum for men to access appropriate support without fear of stigma associated with sexual and emotional difficulties.

Research Implications: This project evaluated an online self-directed psychological intervention using a randomized controlled trial methodology. This is the first such evaluation to our knowledge and provides preliminary evidence to support the delivery of psychological support using the online environment.

Practice Implications: This project provides preliminary evidence for the benefit of using this online self-directed psychological intervention to improve the sexual satisfaction of men following treatment for localized prostate cancer. This program could provide access to much needed psychological support for men who may otherwise not have access to such care. Further clinical translation work of this intervention will allow us to evaluate the clinical applicability of such an intervention.

Acknowledgement of Funding: This research project made possible by joint funding received from beyondblue and the Prostate Cancer Foundation of Australia (PCFA).

S21-3

Feasibility and pilot testing of an online psychological support intervention for partners of men with prostate cancer

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BACKGROUND/PURPOSE: Partners of men diagnosed with prostate cancer face many psychological, relationship and social challenges, and many partners report high levels of psychological distress. Tailored psychosocial support for partners of men with prostate cancer is limited. The provision of a structured psychological support intervention for partners of men with prostate cancer using the online environment could overcome access issues faced by partners and provide much needed support. This study aimed to establish the support needs of partners and pilot test a new self-directed online psychological intervention specifically developed to support partners of

and tailoring of seven modules for *Rekindle*, addressing the reported sexual concerns and unmet needs. **CONCLUSIONS:** *Rekindle* has been designed to address significant sexual concerns amongst cancer survivors and their partners by offering accessible, private and cost-effective support. *Rekindle* uses information technology to create a tailored supportive care service to patients and their partners to address sexual well-being after cancer.

Research Implications: Results highlight the unmet psychosexual needs and preferences of cancer survivors and their partners. Future work needs to examine the efficacy and cost-effectiveness of *Rekindle* and similar interventions.

Practice Implications: *Rekindle* may serve as a model for service delivery and integration of support services into standard care in a private, cost-efficient modality that has broad reach with specific tailoring. Discussion regarding lessons learned in designing and implementing *Rekindle* will be discussed.

Acknowledgement of Funding: Australian Research Council LP130100441 (Lawsin PI).

S21-5

e-TC: development and pilot testing of an online psychosocial intervention to reduce anxiety and depression in testicular cancer survivors

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BACKGROUND/PURPOSE: Despite a good prognosis, many testicular cancer (TC) survivors report long-term psychological morbidity. Online interventions may help overcome barriers to seeking psychological support (e.g. stigma, inconvenience, and cost). This study aimed to develop and pilot 'e-TC', a tailored, online psychosocial intervention targeting anxiety and depression in TC survivors. **METHODS:** e-TC was developed using iterative feedback from an expert advisory panel, including consumers and clinicians, and incorporates clinical therapies and cancer-specific psychosocial interventions across five modules delivered over 10 weeks. e-TC was piloted in a convenience sample of TC survivors (0.5–5 years

post-treatment) with varying psychological profiles. Participants provided feedback on aspects of acceptability (e.g. comprehensiveness, relevance, and utility). Potential efficacy was assessed using pre-post measures of anxiety/depression (HADS) and TC-specific quality of life (EORTC QLQ-TC26) amongst others. Six men with varying usage levels of e-TC were interviewed. **RESULTS:** Fifty-one men were invited to participate, 43 (84%) consented, 27 (53%) signed up to e-TC, and 2 (4%) withdrew. The 25 e-TC users were mostly young ($M=37.6$, $SD=8.0$), well educated (80% tertiary), partnered (88%), and diagnosed with Stage I TC (60%). 28% completed all five intervention modules, 28% completed four, 12% completed two, 4% completed one, and 28% completed none. The acceptability of e-TC was rated highly ($\geq 8/10$ on all aspects), but two-thirds of men thought e-TC was too long. Interview feedback was also mostly positive, but greater tailoring and interactivity was desired. Potential efficacy will be reported. **CONCLUSIONS:** e-TC was favourably rated and may provide a useful treatment option for TC survivors' anxiety and depression.

Research Implications: The acceptability of e-TC has been demonstrated. Further research is needed to evaluate its feasibility and efficacy in TC survivors with clinical anxiety/depression.

Practice Implications: e-TC may provide a useful adjunct to conventional treatment options for psychological morbidity in TC survivors.

Acknowledgement of Funding: This project was jointly funded by Cancer Council Australia and Sydney Catalyst, the Translational Cancer Research Centre of Central Sydney and Regional NSW.

S22-1

Supportive care for adolescents and young adults with cancer

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BACKGROUND/PURPOSE: Cancer patients of all ages typically experience stressors and life disruptions in five domains: (1) interpersonal relationships, (2) dependence–independence, (3) achievement, (4) body-sexual image and integrity, and (5) existential issues. While universal in nature, patients' experiences of these life disruptions vary depending upon the time in life when cancer occurs. As part of a symposium on AYAs with cancer, this opening presentation sets a context for understanding AYAs' supportive care needs as they relate to significant life disruptions and reviews current institutional and community-based initiatives that respond to these needs

in a developmentally appropriate manner. **METHODS:** Older adolescents and young adults (AYA) face distinct developmental tasks that are challenged by cancer. Emerging models of AYA oncology care in the USA, Australia, and the UK have been designed to assess and address developmental concerns for AYAs, including body image, economic and emotional independence/dependence, social involvement, identity formation, sex and sexuality, academics, and employment. **RESULTS:** Research studies suggest that supportive care resources promote coping capabilities (e.g., symptom management, making sense of medical information, and maintaining emotional well-being). Some link coping capability to quality of life (QOL). Clinical care programs that enhance social support and coping capabilities can improve QOL, reduce cancer-related distress, and perhaps improve adherence to therapy. **CONCLUSIONS:** Models of oncology care designed specifically for AYAs (e.g., AYA@USC in the USA, CanTeen in Australia, and Teenage Cancer Trust in the UK) cultivate awareness and sensitivity to the tasks for this age and help AYAs achieve a sense of normalcy and healthy maturation throughout the cancer experience.

Research Implications: Future research is needed to evaluate and compare the effects of AYA-specific models of clinical care to standard pediatric and adult oncology care units where most AYAs now receive treatment.

Practice Implications: Adolescent medicine and psychoncology are central to age-appropriate care for AYAs. Training in these areas will enable the ability of healthcare providers to offer age-appropriate care.

Acknowledgement of Funding: None.

S22-2

Building resilience in adolescents and young adults with cancer: theoretical and patient-reported rationale for positive psychological interventions

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BACKGROUND/PURPOSE: Adolescents and Young Adults (AYAs) with cancer have disproportionately poor health and psychosocial outcomes, perhaps because they have yet to develop the personal resources needed to cope with the demands of illness. The construct of resilience describes an individual's capacity to maintain psychological and/or physical well-being in the face of stress, and is a good candidate to buffer the impact of cancer among AYAs. **METHODS:** Using the example of our center's 'Promoting Resilience in Stress Management' (PRISM) intervention, this talk will (a) review multiple cultural

perspectives regarding the theoretical and patient-reported rationale for positive psychological interventions in AYA oncology and (b) describe how we have integrated both to develop a novel patient-centered intervention. **RESULTS:** The PRISM intervention was developed through adaptation of evidence-based interventions, qualitative research, and iterative pilot testing. It consists of skills-based modules targeting stress management, goal setting, cognitive restructuring, and meaning-making. Pilot testing in multiple populations has demonstrated that the intervention is feasible and highly valuable to AYA patients, parents, and healthcare providers, alike. It may be administered by graduate-level nonclinical professionals, suggesting it has potential for inexpensive dissemination. Future studies are formally testing the efficacy of the intervention as well as adaptations for other clinical populations including AYAs with Type 1 Diabetes, Cystic Fibrosis, and Chronic Renal Failure. **CONCLUSIONS:** Promoting resilience may provide a platform for improving outcomes among AYAs with serious illness.

Research Implications: Integrating positive psychological theory and patient-centered psychosocial care may provide opportunities to develop novel interventions for AYA patients and their families.

Practice Implications: Integrating positive psychological theory and patient-centered psychosocial care may provide opportunities to improve outcomes during and after cancer care.

Acknowledgement of Funding: CureSearch for Children's Cancer; Seattle Children's Research Institute Center for Clinical and Translational Research.

S22-3

Assessing and managing the distress and psychosocial needs of AYA cancer patients

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BACKGROUND/PURPOSE: Distress and unmet needs are common issues in cancer settings; however, developmentally appropriate assessment tools for AYAs with cancer are lacking. Given this, *The Adolescent and Young Adult Oncology Psychosocial Care Manual* was developed as an important national guideline for Australian health professionals supporting young people with cancer. **METHODS:** Using the NCCN's Distress Thermometer and the HEADSS Assessment as a foundation, the Manual's tools were developed in consultation with (i) clinicians working with AYA cancer patients and (ii) AYAs living with cancer, through a process of discussion groups and clinical interviews. **RESULTS:** This manual includes psychosocial screening, assessment, and care

planning tools developed specifically for AYAs with cancer to be administered at key time points along the outlined AYA psychosocial care pathway. **CONCLUSIONS:** Representing an important milestone in the provision of age-appropriate supportive care and supported by the establishment of the Australian Youth Cancer Service, the tools and accompanying manual aim to improve the current psychosocial outcomes of young people with cancer. This presentation will also discuss work that is currently underway to validate the Manual's AYA screening tool with international partners from the UK, US, and Canada. This study will provide important validation and clinical utility information for screening distress among AYA cancer patients, and it will generate greater understanding of the prevalence and predictors of distress amongst this population.

Research Implications: Through ongoing validation work, the AYA screening tool will provide researchers with a robust instrument to use when measuring the distress and needs of young people with cancer.

Practice Implications: The manual and accompanying instruments provide clinicians with the tools to provide age-appropriate care in psychosocial screening, assessment, and care planning with AYA cancer patients. The current validation project will also generate greater understanding of the prevalence and predictors of distress amongst this population, providing important information for the development of interventions.

Acknowledgement of Funding: Australian Department of Health.

A-1

Body image in irradiated head and neck cancer patients: the impact of surgical procedures

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BACKGROUND/PURPOSE: To investigate the body image in head and neck cancer patients treated with radiotherapy. **METHODS:** In a cross-sectional survey of 150 patients with head and neck cancer, 60 patients were with nasopharyngeal cancer (NPC) treated by definite radiotherapy without surgery and 90 patients were with oral cavity cancer (OCC) treated by radical surgery plus adjuvant radiotherapy. All participants completed a 10-item Body Image Scale (BIS) to assess the body image dissatisfaction. In all patients, the clinical and socio-demographic variables were cancer type, age, gender, partnership, education, and employment. In OCC patients, the socio-demographic variables were the same, and

clinical variables were facial skin sacrificed, mouth angle sacrificed, glossectomy, maxillectomy, and mandibulectomy. ANOVA, *t*-test, and multiple regression were used to evaluate the relationships between these variables and BIS. **RESULTS:** In all patients, the cancer type (NPC vs. OCC) was the strongest independent predictor of BIS. The nonsurgically treated NPC patients had significantly better body image than the surgically treated OCC patients. Education was also an independent factor for BIS. In OCC patients, facial skin sacrificed, mouth angle sacrificed, maxillectomy, and mandibulectomy were significantly associated with BIS. Using multivariate analysis, inferior maxillectomy and segmental mandibulectomy were the independent poor prognosticators of body image outcome in OCC patients. **CONCLUSIONS:** The radical surgery for head and neck cancer patients has a significant impact on body image, especially those with facial bone destruction. These findings could be used to guide psychosocial interventions targeting body image disturbance for patients with head and neck cancer.

Research Implications: The radical surgery has a significant impact on the body image of the head and neck cancer patients treated with radiotherapy. Besides, the surgical procedures of inferior maxillectomy and segmental mandibulectomy are the independently poor prognosticators of body image outcome in the patients who received surgical treatment. These findings could help in selecting high risk patients of body image disturbance to test psychosocial interventions for the head and neck cancer patients.

Practice Implications: In the irradiated head and neck cancer patients, those who have received radical surgery have significantly poor body image. Besides, the patients treated with facial bone destructive surgery have even worse body image outcome. These findings could be used to select the head and neck cancer patients with high risk of body image disturbance to receive psychosocial interventions.

Acknowledgement of Funding: None.

A-2

A longitudinal examination of the protective effects of hope and optimism on body image distress in a mixed-cancer population

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BACKGROUND/PURPOSE: Much research in psycho-oncology has focused on the psychopathology of body

image distress in cancer patients without referencing their effects across the cancer journey or the protective effects of psychological resources. Such resources, like hope and optimism, have also been shown to improve distress, depression, and anxiety. This prospective study thus sought to explore the dynamics between trajectories of body image distress (BID) and hope and optimism across time. Much research in psycho-oncology has focused on the psychopathology of body image distress in cancer patients without referencing their effects across the cancer journey or the protective effects of psychological resources. Such resources, like hope and optimism, have also been shown to improve distress, depression, and anxiety. This prospective study thus sought to explore the dynamics between trajectories of BID and hope and optimism across time. **METHODS:** 111 cancer patients receiving outpatient treatment at a cancer center in Singapore completed self-reported measures of BID (Body Image Scale), hope (Adult Hope Scale), and optimism (Revised Life Orientation Test) at baseline (within 3 months of their cancer diagnosis) and follow-up (6 months post-baseline). Trajectories of intra-individual change (improved, stable, and declined) for BID were calculated based on the minimal clinically important difference (± 0.5 baseline SD). **RESULTS:** There was a significant increase in BID at follow-up; hope and optimism remained stable. Rank-transformed mixed-factor repeated measures analyses of variance revealed significant interactions between BID trajectory groups and time on hope, but not optimism, suggesting that patients experiencing improvements in BID reported higher levels of hope than those who had stable or deteriorating levels of BID ($F[2, 108]=3.25, p < .05$). **CONCLUSIONS:** The findings of this exploratory study suggest that psychosocial coping resources like hope may also reduce body image distress across time in a sample of Asian cancer patients, although the mechanisms of interaction require further examination. Supportive care could perhaps lend greater focus to improving patients' hope to alleviating consequent psychiatric sequelae.

Research Implications: Future research should examine specific hope pathways to identify possible moderation or mediation effects with body image distress and other psychosocial variables over time.

Practice Implications: Cognitive behavioral treatment for body image distress should include hope interventions to enhance an individual's level of hope to act as a psychological protective mechanism against body image distress.

Acknowledgement of Funding: National University of Singapore Seed Grant.

A-3

Identifying sociocultural influences and psychological processes that influence the body image of women with breast cancer

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BACKGROUND/PURPOSE: There is greater recognition that treatment for breast cancer can impose a long lasting and adverse impact on women's body image, due to its associated alterations to appearance. This study sought to identify key influences on body image among women with a history of breast cancer, in order to inform the future development of effective body image interventions for this population. We tested the 'Tripartite Influence Model', which postulates that body image is shaped by three sociocultural influences: media, family, and peers, through mediating psychological processes of internalisation of appearance ideals and appearance comparisons. **METHODS:** 169 women with a history of breast cancer (M age = 49.9 years), completed an online questionnaire assessing media, partner, family, and peer influences, internalisation of media ideals, appearance comparison, and body image. **RESULTS:** Structural equation modelling showed the Tripartite Influence Model was a good fit to the data (Chi-square (47) = 86.993, $p = .00$, RMSEA = .042, CFI = .983). Media had direct and indirect effects on body image, through internalisation and comparisons, as did family but through internalisation only. Partners indirectly affected body image through appearance comparison. Friends were not a significant influence. **CONCLUSIONS:** The 'Tripartite Influence Model' provides a useful framework for understanding the role of sociocultural influences and psychological influences in the development of body image concerns among women with a history of breast cancer. These identified targets can be used to inform intervention development, of which would benefit from further consultation of existing interventions within the body image field.

Research Implications: These findings present previously unexplored risk factors for body image concerns among women with breast cancer. Replication of these results would be beneficial to firmly establish key influences on body image, which could serve as targets within an intervention for this population.

Practice Implications: Media, family, partners, and psychological processes of internalisation and comparison affect women's body image and may provide fruitful targets for interventions aiming to improve body image among women with breast cancer. Existing programmes that target these factors could usefully be evaluated for

their acceptability and effectiveness among women with breast cancer.

Acknowledgement of Funding: PhD Bursary provided by the Faculty of Health and Applied Sciences at the University of the West of England, Bristol, UK.

A-4

A longitudinal perspective of body image in head and neck cancer patients undergoing reconstructive surgery

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BACKGROUND/PURPOSE: Head and neck cancer (HNC) patients undergoing reconstructive surgery are at risk for experiencing significant appearance and functional changes that negatively affect psychosocial well-being. In order to advance psychosocial care for HNC patients struggling with body image changes, a better understanding of body image adjustment in this patient population is needed. This study examined body image adjustment of HNC patients over time and investigated appearance investment as a risk factor. **METHODS:** 150 HNC patients were assessed at pre-surgery and at 1M, 3M, 6M, and 12M post-surgery. Participants completed self-reported measures of body image satisfaction (Body Image Scale) and appearance investment (Appearance Schemas Inventory—Revised). A linear mixed modeling approach was used to compare body image satisfaction scores over time and to examine the extent pre-surgical appearance investment moderated body image satisfaction levels over time. **RESULTS:** Body image satisfaction scores significantly changed over time ($p=.003$), with highest dissatisfaction at 1M and 3M post-surgery. Appearance investment significantly moderated the relationship between time and body image dissatisfaction; patients with higher appearance investment reported higher dissatisfaction ($p<.001$). **CONCLUSIONS:** HNC patients undergoing reconstructive surgery appear to be the most vulnerable to body image changes in the acute stage of recovery; interventions targeting body image should ideally be offered within 3 months of commencing reconstructive surgery. Further, efforts should be made to identify patients with high appearance investment and refer them to appropriate psychosocial resources. Future clinical studies should investigate whether targeting appearance investment affects body image and other psychosocial outcomes.

Research Implications: Future clinical studies should investigate whether targeting appearance investment affects body image and other psychosocial outcomes.

Practice Implications: (1) Interventions targeting body image adjustment should be offered within 3 months of commencing reconstructive surgery. (2) Efforts should be made to identify HNC patients with high appearance investment and to refer them to appropriate resources.

Acknowledgement of Funding: American Cancer Society, RSG-PB-09-157-01-CPPB.

B-1

Prostate cancer decision-making: a national survey on treatment and research

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BACKGROUND/PURPOSE: There is a paucity of information on why prostate cancer patients choose proton RT over other treatment options. Additionally, it is unknown whether recruitment for randomized controlled trials (RCTs) with proton RT is feasible. Therefore, we designed and conducted a survey on prostate cancer treatment and research decision-making. **METHODS:** A 28-question online and paper survey was distributed nationally to men aged 50+ years, covering patient preferences, and treatment and research trial decision-making. **RESULTS:** Respondents ($N=1060$) were primarily White (91%), 60+ years (49%), employed (54%), married (73%), and 89% had greater than a HS education. 7% of respondents had a history of prostate cancer. Regarding treatment decision-making, respondents ranked survival as most important. For research decision-making, 39% responded they would never participate in an RCT under any circumstance, and 36% responded they would not participate in an RCT comparing two different types of radiation treatment. However, 36% said they would agree to participate in an RCT of two different lengths of treatment. After viewing descriptions, dosimetric modeling pictures, and side effect profiles of both proton and conventional RT, 39% still said they would not participate in the RCT of those two treatments, and just 14% said yes. Black men were more likely to say no to participation in an RCT. **CONCLUSIONS:** Our data from this national survey were consistent with our clinical experience that patients are hesitant to enroll in an RCT comparing proton RT and conventional RT. Dosimetric images and descriptions of each RT only increased the no responses.

Research Implications: Our findings may inform the design of future comparative effectiveness trials. Additionally, although we had a small group of black men in our sample, there were significant differences in clinical and research decision-making responses, warranting further investigation.

Practice Implications: These data suggest that survival was most important to men in considering treatment decisions and the impact of various symptoms/side effects on lifestyle, rather than the actual burden of the symptoms themselves.

Acknowledgement of Funding: None.

B-2

Psychological distress, age and salience of physical appearance: mediator and moderator effects of the BRECONDA web-based decision aid for women considering breast reconstruction following mastectomy

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BACKGROUND/PURPOSE: Women requiring mastectomy for breast cancer are faced with difficult decisions regarding whether, and how, to restore breast shape after surgery. We developed a web-based interactive decision aid, *BRECONDA*, to assist women with this decision making. Using data from the *BRECONDA* randomized controlled trial (RCT), this study examined moderators and mediators of decisional conflict and decisional regret. **METHODS:** Women diagnosed with breast cancer ($N=265$) were recruited into the web-based RCT. Participants completed baseline questionnaires and were randomly assigned to either the *BRECONDA* Intervention (INT) or Usual Care (CONT) conditions. Age and psychological distress at study entry were assessed as moderators, and values about minimizing additional surgical intervention and physical appearance-related concerns were assessed as mediators of *BRECONDA*. Decisional conflict and decisional regret were assessed at 1- and 6-month follow-up. **RESULTS:** Linear mixed effects models demonstrated a moderating effect of age and cancer-specific distress on decisional conflict: INT participants who were older and more distressed demonstrated the greatest reduction in decisional conflict at 1- and 6-month follow-up. Mediation bootstrapping analysis revealed that participant values about physical appearance-related concerns at 1-month follow-up mediated the impact of *BRECONDA* on decisional conflict and regret at 6-month follow-up. **CONCLUSIONS:** This is the first RCT to assess a fully integrated online decision aid that incorporates values clarification exercises in the breast reconstruction context. These findings delineate the characteristics of individuals most likely to benefit from the *BRECONDA* decision aid and a mechanism by which the intervention demonstrates decisional process benefits to women considering breast reconstruction.

Research Implications: Prior research has identified the efficacy of the *BRECONDA* intervention in reducing decisional conflict and decisional regret in women faced with the breast reconstruction decision. These findings delineate the characteristics of individuals most likely to benefit from the *BRECONDA* decision aid and a mechanism by which the intervention facilitates the decision-making process. Older women, who are typically less extensive users of the Internet, and those experiencing greater levels of cancer-specific distress at the point of study entry, have particularly benefitted from the provision of quality, structured information concerning breast reconstruction options. The mediating effect of attitudinal change regarding the relative importance of physical appearance-related values when considering breast reconstruction highlights the key role of these views when making these surgical decisions.

Practice Implications: Online patient resources such as *BRECONDA* have the advantage of easy accessibility, particularly with increasing Internet access across the broad population. These data support the use of this decisional support resource in oncological surgery practice and identify individuals for whom provision of this resource should be highly recommended and emphasized.

The easy-to-use self-guided format of the intervention will allow surgeons to refer their patients to this resource as an adjunct to medical consultations and to facilitate the decision-making process concerning both immediate and delayed breast reconstruction surgery following mastectomy.

Acknowledgement of Funding: This project was co-funded by the National Breast Cancer Foundation and Cancer Australia—ID 543400.

B-3

Use of perceptual mapping and vector modeling to develop message strategies to encourage informed decision making for clinical trial participation among African American cancer patients

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BACKGROUND/PURPOSE: African Americans participate in clinical research at lower rates than Caucasians, despite carrying a disproportionately high cancer burden. While studies on barriers to participation among these patients have occurred, limited research has focused on the unique perceptions of clinical trials and facilitators to participation compared between those who have and have not participated. **METHODS:** We used perceptual

mapping (multidimensional scaling) and vector modeling methods to compare barriers and facilitators to participation in African American cancer patients who had and had not participated in two Philadelphia hospitals. RESULTS: Forty-one patients completed the study (51.2% female; 53.7% had not participated in a clinical trial; mean age 60 years). Perceptual maps show clear conceptual differences about the worth and barriers to clinical trial participation. Vector modeling indicates key message strategies for those who have not participated should focus on understanding of the clinical trial process and encouraging patients and doctors to talk about the benefits of participation. Patients who had participated understood the clinical trial process and felt their doctor had given them enough information, compared to their counterparts. Mistrust was not found to be a significant barrier to those who had not participated. CONCLUSIONS: Perceptual mapping and vector modeling methods can elucidate message strategies to encourage clinical trial participation and clearly show how to effectively address barriers to clinical trial participation.

Research Implications: Using these methods to compare barriers in African American patients in those who have and have not participated is novel and provides a more targeted strategy to develop interventions.

Practice Implications: Spending time discussing the clinical trial process, addressing negative perceptions of clinical trials and promoting their benefits would be more beneficial for African American patients to make an informed decision about participation, rather than interventions focusing on mistrust.

Acknowledgement of Funding: This study was funded by an internal NODAL grant to encourage collaboration between researchers at different institutions.

B-4

Group medical consultations (GMCs) in combination with tablet-based video GMCs as an alternative for individual breast cancer follow-up visits: results from a randomized controlled trial

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BACKGROUND/PURPOSE: Group medical consultations (GMCs) provide individual medical visits in the presence of ≤ 7 peer patients. In the follow-up of breast

cancer, we evaluated the efficacy of a GMC combined with an online application, consisting of three tablet-based video GMCs and additional information ('My-GMC'). METHODS: This randomized controlled trial compared the effect of 'My-GMC' ($n=59$) with one individual medical visit ($n=50$). Between-group differences on the outcomes distress and empowerment were analyzed 1 week, 3 and 6 months after the visit. RESULTS: The participation rate was 36%. Study participants reported higher information needs, higher distress and lower empowerment scores compared to non-participants. No between-group differences were found for the primary outcomes. More themes were discussed in GMCs compared to individual visits ($t=4.7, p<.001$). Significantly more patients experienced peer support in GMCs (78%) than via the online application (47%). Patients reported equal satisfaction for GMCs and individual visits. Satisfaction with and usage of the online application was low. Most frequently reported barriers were technical issues with the tablet, heterogeneity of medical treatments of participants, highly accessible standard follow-up care and lack of bonding between participants. CONCLUSIONS: Although patients received more information and experienced peer support, 'My-GMC' did not result in improvements in distress or empowerment. Usage data of the online application will be discussed.

Research Implications: Future research should focus on the process of GMCs and peer support, particularly the group process during online GMCs. A selection bias of patients can be prevented by using a preference trial design, in which the preferred intervention is provided to those patients with strong preferences for either intervention arm. Only patients without strong preferences are randomly assigned.

Practice Implications: Since the number of breast cancer survivors is increasing, there is a high need for efficient and high-quality follow-up alternatives. 'My-GMC' provides an innovative alternative, combining face-to-face and online video GMCs. Although 'My-GMC' thus far did not lead to improvements in distress or empowerment, patients may prefer this kind of follow-up for additional information and peer support. Suggestions for improvement of 'My-GMC' include technical support and more homogeneous groups.

Acknowledgement of Funding: Pink Ribbon, The Netherlands.

C-1

ProsCan Partners Study: predicting distress and quality of life for partners of men with prostate cancer up to 5 years after treatment

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BACKGROUND/PURPOSE: The diagnosis and treatment for prostate cancer have well-described negative impacts on men; however, the distress of partners and how this evolves over time are not well understood. The present study describes prevalence and predictors of psychological and quality-of-life outcomes from 2 to 4 years post-treatment to 12-month follow-up. **METHODS:** 462 partners ($M_{\text{age}}=62.7$ years) of men with prostate cancer were recruited from an existing longitudinal study and completed surveys assessing psychological distress (Distress Thermometer and HADS) and QOL (SF-36) at baseline, 6, and 12 months. Sociodemographics and clinical variables, caregiver burden (general strain, isolation, disappointment, emotional involvement, and environment), self-efficacy, and stress appraisal (challenge and threat) were assessed as predictors. **RESULTS:** Distress Thermometer (≥ 4 : 23–22%), physical-QOL ($M=47.9$ –48.1), and mental-QOL ($M=49.3$ –48.8) scores remained consistent over time. At 12 months following the first assessment, increased depression was predicted by increased disappointment and threat, and less emotional involvement and self-efficacy (35% variance explained). Increased anxiety was predicted by increased general strain and threat, and lower self-efficacy, which together explained 32% total variance. Better physical-QOL was predicted by being younger in age, married for less time, having less disappointment and problems with environment, and increased self-efficacy (19% variance explained). Better mental-QOL was predicted by increased marital satisfaction and less general strain and disappointment (36% variance explained). All predictors were significant at $p < .05$. **CONCLUSIONS:** Resolving practical issues related to caregiver burden (e.g. arranging additional support) and coping and cognitive behavioral interventions to build self-efficacy and reduce negative threat appraisals appear warranted.

Research Implications: This prospective study provides novel data that address a gap in our understanding about the difficulties experienced by partners of men diagnosed with prostate cancer and possible mechanisms that contribute to distress.

Practice Implications: This research may inform development of psychosocial support programs for partners of men with prostate cancer. Specifically, results suggest helping partners to feel less threatened and view the situation as more of a challenge, coupled with building partner's confidence in their ability to support men with symptoms and side effects, may reduce partner distress and improve QOL.

Acknowledgement of Funding: Funding for this study was provided by Cancer Council Queensland.

C-2

Cancer healthcare professionals providing quality care to family caregivers

Jo Hanson, Betty Ferrell, Marcia Grant
City of Hope

BACKGROUND/PURPOSE: While quality patient care is the ultimate goal for healthcare professionals (HCP), most lack an understanding of the important role family caregivers (FCG) play in achieving this quality care. The purpose of this presentation is to discuss changes following an educational program to raise cancer HCPs' awareness of FCG needs, their lack of support, and how to initiate efforts to address the gaps. **METHODS:** Two-person interdisciplinary oncology HCP teams from across the country attended a 3-day comprehensive course focused on understanding the responsibilities and distress cancer FCGs face as they care for their loved one. Course content included the most current FCG research findings and presented examples of successful FCG support efforts from nationwide cancer centers. Teams completed a longitudinal survey at pre-course and 6, 12, and 18 months post-course to ask about FCG-focused educational programs offered to HCPs in their institution. The 10-item survey included questions on program content pertaining to FCGs' psychological, social, spiritual, and physical well-being across the cancer trajectory. **RESULTS:** Surveys completed by 185 teams pre-course and 160 teams at 18 months revealed a 90% increase in HCP educational offerings. The vast majority of these programs offered to HCPs focused on FCG psychological, social, spiritual, and physical well-being. As a result of the training, respondents reported HCPs were more aware of the important role of FCGs. **CONCLUSIONS:** The cancer FCGs' role cannot be overestimated. Having a better understanding of this role, HCPs can provide essential support for FCGs' needs and help fortify their well-being throughout the caregiving journey.

Research Implications: These data will add to the family caregiver research by identifying the importance and the stress of the fast paced, dynamic nature of the cancer FCG role. In future planning, consideration to the role issues can help clinicians build support systems as FCGs are integrated into routine cancer care plans.

Practice Implications: For quality patient outcomes, supporting cancer FCGs needs must be addressed to improve the FCG's quality of life and for FCGs to have the tools to provide optimum patient care.

Acknowledgement of Funding: National Cancer Institute (NCI) Training Grant R25 CA132664-01A2.

C-3

Coping, optimism, and quality of life in couples managing prostate cancerLixin Song¹, Laurel Northouse²¹UNC-Chapel Hill, ²University of Michigan

BACKGROUND/PURPOSE: Most prior research has examined the relationship between active and avoidant coping and QOL from an individual perspective even though patients and partners have an interdependent effect on one another's response to illness. More research needs to examine coping and QOL from a couple (i.e., dyad) perspective. Although optimism/pessimism can affect an individual's coping and QOL, little research has examined the role of optimism/pessimism in the relationships between coping and QOL, especially in patient-partner dyads. This study examined the interdependent relationship between coping and QOL in prostate cancer patients and their partners, and the extent to which each person's optimism/pessimism moderated the relationship between coping and QOL in these couples. **METHODS:** Using the Actor-Partner Interdependence Model, we analyzed the baseline data obtained from a randomized clinical trial with prostate cancer patients and their partners ($N=263$ patient-partner dyads). Patients and partners independently completed measures that assessed their optimism/pessimism, avoidance and active coping, and QOL at baseline. **RESULTS:** Patients' active ($p=.05$) and avoidant ($p<.01$) coping affected only patient QOL. However, partners' avoidance coping negatively affected both their own and the patient's QOL ($ps<.05$). Partners' optimism also moderated the negative relationship between avoidance coping and QOL in both patients ($p<.01$) and partners ($p<.05$). **CONCLUSIONS:** The type of coping used by partners can affect the patients' QOL. Furthermore, the extent to which partners were optimistic moderated the relationship between patients' and partners' avoidance coping and QOL. Because partners can influence patients' QOL, the needs of partners and the strategies they use to cope with the stress of illness need further assessment.

Research Implications: More dyadic research is needed to examine these results using a diverse population to detect the moderation effects of optimism/pessimism on the interdependent relationships between coping and QOL in cancer patients and their partners.

Practice Implications: The needs of both patients and their partners need to be addressed in practice settings. Reducing avoidance coping in both patients and their partners may be an effective strategy for improving QOL for patients with prostate cancer and their partners, especially among those who are more pessimistic.

Acknowledgement of Funding: From National Cancer Institute (R01CA10738, PI: Northouse) and by an individual NRSA (F31NR010990, PI: Song). Dr. Song's work is currently sponsored by the Clinical and Translational Sciences Award (CTSA), University of North Carolina-Chapel Hill KL2TR001109 and UL1TR001111.

C-4

Salivary cortisol as individual and dyadic markers of stress and health among colorectal cancer patients and their caregiversYoungmee Kim¹, Charles Carver¹, Kelly Shaffer¹¹University of Miami

BACKGROUND/PURPOSE: Salivary cortisol has been acknowledged as a key biomarker of disease prognosis and survival among cancer patients and of general stress and endocrine dysfunction among healthy aging populations. Sociocultural and interpersonal correlates of salivary cortisol among cancer patients and their family caregivers, however, remained understudied. **METHODS:** This study investigated such correlates among cancer patients who are newly and recently diagnosed with colorectal cancer (53 years old; 55% female; 59% Hispanic) and their adult family caregivers (47 years old; 75% female; 65% Hispanic). Participants (both patients and caregivers) collected saliva at wake-up for two consecutive days, which served as the primary outcome. Perceived stress from cancer (Perceived Stress Appraisal) and family obligation (Familism Scale) were measured individually as primary predictors of one's own (as patient or caregiver) and of the family member's levels of salivary cortisol. Age and gender served as covariates. **RESULTS:** Hierarchical regression analyses revealed that patients' lower levels of wake-up cortisol were predicted by their own perception of heightened family obligation ($B=-7.37, p<.04$) but not by those of their family caregivers; caregivers' wake-up cortisol levels were not significantly predicted by their own or the patients' characteristics studied. Family caregivers' difference in salivary cortisol levels between wake-up and night, however, was marginally predicted by their patients' perception of family obligation ($B=5.78, p<.07$). **CONCLUSIONS:** Findings suggest that the primary stressor of having cancer in the family may stem from the interpersonal/family context, as cancer is an illness not just of an individual but of a family. Investigation of additional sociocultural and interpersonal predictors of flattened cortisol (smaller difference between morning and night levels) or lower wake-up cortisol will shed light on the long-term implication of the role of salivary cortisol among cancer patients and their family caregivers during the early phase of survivorship.

Research Implications: Findings highlight the significant role of sociocultural factors, specifically interpersonal and family characteristics, in biological health indicator among cancer patients and their family caregivers. Future studies are needed to examine the long-term implication of such role of sociocultural factors and other biobehavioral pathways.

Practice Implications: Findings suggest healthcare professionals be cognizant about the impact of sociocultural and interpersonal characteristics of the patients and their family caregivers in the interpersonal and family context on their own physical health outcomes. The findings should also be incorporated in developing cancer survivorship programs that are socioculturally tailored and sensitive.

Acknowledgement of Funding: This study was funded by the American Cancer Society National Home Office, intramural research. Writing of this abstract was supported by American Cancer Society Research Scholar Grants (121909-RSG-12-042-01-CPPB) and the Sylvester Comprehensive Cancer Center, University of Miami, FL, to the first author.

D-1

Does group social skills intervention for children with brain tumors improve quality of life? A randomized controlled trial

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BACKGROUND/PURPOSE: Children treated for brain tumours are at risk for social competence deficits and reduced quality of life (QOL). Interventions targeting social competence deficits have received little empirical attention. Objective was to determine for pediatric brain tumour patients (PBTP), whether a manualized group social skills training intervention program (SSIP; Experimental Group (EG)) will improve QOL compared to a Control Group (CG). **METHODS:** PBTP 8–16 years of age, in stable condition on treatment or follow-up, and attending school regularly were randomly assigned to SSIP EG or CG. Both groups underwent eight 2-h weekly group sessions. EG received manualized social skills training sessions through games and crafts, while CG received games and crafts only. Self and parent-reported

QOL was assessed using PedsQL4.0 Generic Core Scales performed at baseline, end of intervention and 6 months later. ANCOVA was conducted to control for baseline scores. Alpha levels and effect sizes are reported. **RESULTS:** Eighty-two PBTP (EG=40; CG=42) participated. When evaluating interactions between group and time by self-report, total PedsQL ($p < 0.025$; Eta-squared=0.06) and emotional PedsQL ($p < 0.003$, Eta-squared=0.10) were significant; improvements in overall QOL and feelings in the EG versus CG were sustained post-intervention. Both groups reported improved physical QOL over time ($p < 0.04$, Eta-squared=0.05). Parent report ratings showed trends of higher scores in the EG. **CONCLUSIONS:** Based on self-reports, this study demonstrated that the SSIP is an efficacious intervention that contributes to the improvement of PBTP's QOL.

Research Implications: This RCT represents a major advancement in validating evidence-based psychosocial treatments for this population.

Practice Implications: The findings of this study suggest that implementation of the SSIP in the clinical setting or the community would contribute to better social reintegration and hence better QOL for these patients in their community.

Acknowledgement of Funding: This study is funded by the Canadian Cancer Society Research Institute.

D-2

Differential effect of brain radiation on social skills and quality of life of children affected by brain tumors

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BACKGROUND/PURPOSE: Pediatric brain tumor patients (PBTP) who require brain radiation therapy are at increased risk for neurocognitive deficits. Less is known about the impact of various brain radiation volumes on the social competence and quality of life (QOL) of these patients. **OBJECTIVE:** To determine whether treatment radiation volumes (whole brain [WBR], focal [FBR], and no radiation [NR]) differentially impact PBTP' social skills and QOL. **METHODS:** 89 PBTP (8 to 16 years) in stable condition while on treatment or in follow-up, and attending school regularly participated. Each PBTP and one caregiver completed questionnaires assessing social skills (Social Skills Rating System [SSRS]), and QOL

(PedsQL4.0). One-way ANOVAs were conducted for each outcome measure using WBR, FBR, and NR as a factor. Bonferroni-corrected alphas and effect sizes are reported. **RESULTS: Social Skills.** PBTP who received WBR reported significantly lower assertive behavior scores than other PBTP ($p=0.057$; $\eta^2=0.07$). No significant differences were found on parental reports. **QOL.** PBTP with WBR and FBR reported significantly lower school QOL compared to PBTP with no brain radiation ($p=0.01$; $\eta^2=0.10$). Parent-reported physical QOL was significantly lower in PBTP with WBR than in those with focal or no radiation ($p=0.019$; $\eta^2=0.09$). **CONCLUSIONS:** Findings suggest that WBR is associated with more adverse effects on QOL than focal or no radiation. PBTP who received WBR saw themselves as less assertive and with poorer school-related QOL than other PBTP, while their parents reported lower physical QOL.

Research Implications: These findings identify WBR as a risk factor for poor social assertiveness and QOL in the school context. If PBTP are not able to speak up for their needs, particularly in the school setting, greater efforts need to be made to help them and their caregivers to re-integrate in their community successfully.

Practice Implications: Future research needs to explore effective school re-integration programs targeted to the subgroup of PBTP with the greatest social deficits.

Acknowledgement of Funding: This study is funded by the Canadian Cancer Society Research Institute.

D-3

Neurofeedback not effective in pediatric brain tumor survivors: results of a double-blind randomized sham-controlled trial

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BACKGROUND/PURPOSE: Many pediatric brain tumor survivors suffer from neurocognitive impairments. Promising effects of neurofeedback on neurocognition have been reported. A double-blind randomized sham-controlled trial with a parallel-group design investigated the effects of neurofeedback on neurocognitive functioning in pediatric brain tumor survivors (PRISMA study). **METHODS:** Eligible were children in the Netherlands,

aged 8–18 years, >2 years post-treatment of a brain tumor, and with neurocognitive complaints. A randomization table assigned participants to either neurofeedback (nf) or sham-feedback (sf) training (ratio 1:1); participants, parents, trainers, and researchers handling the data were blinded to group assignment. Participants were assessed pre-, post-, and 6 months post-training to evaluate whether neurofeedback training would lead to improved functioning as compared to sham-feedback training. Primary outcomes were attention, processing speed, memory, visuomotor integration, executive functioning, and intelligence. Secondary outcomes were self-, parent-, and teacher-reported questionnaires. Linear mixed models analysis was used to test differences between neurofeedback and sham-feedback training over time. For secondary outcomes, the p -value was set on <0.01 due to the large number of outcomes. **RESULTS:** A total of 82 children enrolled (mean age 13.9 years, $SD=3.2$, 49% males); 80 participants were randomized (40nf:40sf); 71 participants (34nf:37sf) completed the training and were included in the effect analysis. 68 participants (33nf:35sf) completed the follow-up assessment. Scores of both groups improved over time, but neurofeedback and sham-feedback training did not differ on any of the primary ($ps > 0.15$) or secondary ($ps > 0.01$) outcomes. **CONCLUSIONS:** Results indicate no positive effect of neurofeedback on neurocognitive functioning of pediatric brain tumor survivors.

Research Implications: Future research could aim at finding an effective intervention for neurocognitive functioning of PBTS, as neurofeedback has not proven to be effective.

Practice Implications: Based on the results of our study, we cannot advise neurofeedback as an intervention for neurocognitive difficulties in pediatric brain tumor survivors.

Acknowledgement of Funding: The Dutch Cancer Society (KWF Kankerbestrijding, Grant# UVA2008-4013) and The Tom Voûte Fund (Part of the Dutch Children Cancer Free Foundation, KiKa, Grant# SKK-PRISMA).

D-4

Deficits in executive functioning and effortful control: explaining emotional adjustment in pediatric brain tumor survivors (PBTS)

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BACKGROUND/PURPOSE: PBTS are at risk for internalizing symptoms, but variability within and between samples shows that this outcome is far from universal. This risk could be partially explained by executive dysfunction; however, the mechanism by which these variables could be related requires examination. We hypothesized that deficits in executive functioning would account for internalizing symptoms and that this would be partially explained by deficits in effortful control, i.e. self-regulation involving activation or inhibition of attention or behavior. **METHODS:** PBTS ($n=73$) were recruited from two cancer centers, and classmate controls matched for gender, race, and age ($n=68$) were identified. PBTS were aged 8–16 years ($M=11.2$, $SD=2.4$), 58% male, and 1–6 years post-treatment for an intracranial tumor. Children completed the WISC-IV Processing Speed Index, subtests from the Test of Everyday Attention for Children, and the Children's Depression Inventory. Parents completed the Early Adolescent Temperament Questionnaire—Revised (Effortful Control) and the Child Behavior Checklist (Internalizing Behavior). Data were analyzed using multiple regression and post-hoc bootstrapping. **RESULTS:** PBTS were significantly different from controls in the expected directions for executive functioning, effortful control, and internalizing symptoms. The hypothesized indirect effect was significant ($\beta=.03$, 95% $CI=.005-.07$) with a residual group difference in internalizing symptoms ($p=.0015$). **CONCLUSIONS:** These findings suggest that PBTS may be at risk for a diminished capacity for effortful control due to neurocognitive dysfunction following treatment. Furthermore, effortful control partially accounts for the relationship between executive functioning and emotional outcomes in PBTS.

Research Implications: This research presents a novel mechanism by which neurocognitive dysfunction in pediatric brain tumor survivors could impact emotional outcomes. Future research should investigate the directionality of these relationships using a longitudinal study design.

Practice Implications: Deficits in executive functioning may contribute to subsequent internalizing symptoms in pediatric brain tumor survivors in part due to shifts in temperamental emotion regulation. Clinicians might choose to explore neurocognitive remediation in order to optimize emotional outcomes for PBTS.

Acknowledgement of Funding: Funded by the American Cancer Society (RSGPB-03-098-01-PBP) and the National Cancer Institute (R03 CA138122-02).

E-1

Tailoring tobacco cessation interventions for special populations served by federally qualified health centers

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BACKGROUND/PURPOSE: This evaluation was designed to assist a federally qualified health center (FQHC) translate evidence into practice improvements for tobacco cessation due to limited class retention and sustained quit attempts. **METHODS:** Methods included a review of existing evidence and a focus group with HIV+, LGBT-Q, homeless and African American individuals who participated in the American Lung Association Freedom from Smoking® intervention. A focus group guide was crafted from themes in the literature using the Health Belief Model. Data were transcribed and analyzed deductively using NVivo 10. Parent nodes were benefits of changing, cost of smoking, cues to action, efficacy to quit, impact of no-smoking policies, reasons to smoke, resources used to quit and feedback to improve intervention. **RESULTS:** Population-specific recommendations included need to (1) advocate for tobacco cessation to reduce HIV symptoms, (2) address smoking in bars and incorporate culturally specific content for LGBT-Q clients, (3) engage homeless clients in person, (4) address the additive effect of menthol for African American smokers and (5) combine self-help, counseling and pharmacotherapies to increase effectiveness of quit attempts. Focus group findings supported the literature and conveyed rich feedback on additional cues to action for special populations, including improved hygiene, money saved and a sense of accomplishment. Most participants indicated they had not heard of the tobacco cessation quit line. **CONCLUSIONS:** This evaluation supports findings in existing literature on special needs of these target populations and yields additional data regarding cues to action, reasons for unsuccessful quit attempts and retention. Feedback from FQHC clients was critical to the evaluation.

Research Implications: Next steps involve conducting matrix analyses across two additional cohorts. While not generalizable, these data will add to the evidence base for tobacco cessation interventions for HIV+, LGBT-Q, homeless and African American populations—currently sparse in the literature. This evaluation provides rich data for hypothesis generation.

Practice Implications: Given insufficient data in randomized control trials for tobacco cessation approaches that benefit HIV+, LGBT-Q, homeless and African American smokers, this evaluation provides important data to directly inform practice change in community clinics serving these populations.

Acknowledgement of Funding: Funding for this program evaluation was provided through grant no. CHA.PHBG.WWC.072014 through an award from HHS/Centers for Disease Control and Prevention funded by Preventive Health Block Grant, Part A, Title XIX, Grant #2B01DP009009-14, CFDA 93.991.

E-2

Managing women's uncertainty during genetic counseling sessions for BRCA testing

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BACKGROUND/PURPOSE: Women with elevated breast cancer risk struggle with uncertainty about their future well-being. For women with daughters, the distressing nature of this uncertainty is extended to how this impacts their daughter's future health. Managing women's uncertainty is a complex task for genetic counselors (GCs) and practitioners. While genetic counseling and testing is meant to reduce uncertainty about risk, it can result in more uncertainty and contribute to heightened anxiety, confusion, or ruminating about one's health. It can be challenging for GCs and practitioners to manage women's uncertainty about risk in a way that minimizes distress, maximizes understanding, and enhances coping with 'psychological chronic risk'. We sought to explore uncertainty management strategies GCs and practitioners enact using Brashers' Uncertainty Management Theory. From this theoretical perspective, talking with practitioners about disease risk is a context of 'managing uncertainty management' and, thus, especially complex. For instance, women and practitioners are attempting to manage information from different (and contrasting sources) and deal with information that is available or not. They are also tackling layers of uncertainty for more than just the individual receiving counseling (i.e., the daughter's disease risk and future health). Our aim was to uncover not only the strategies GCs and practitioners enact during counseling sessions but to also capture the context of the diverse uncertainty issues they encounter during such consultations. **METHODS:** We examined transcripts from 16 videotaped genetic counseling sessions. The sample included 16 women, 3 genetic counselors, and 5 physicians. Fourteen were pre-testing consultations and 2 were post-testing consultations with women having a positive BRCA 1/2 result. We used the constant comparative method to analyze for themes that illustrate practitioners' communication strategies employed to manage women's uncertainty about their (and their daughter's) disease risk. The context in which these strategies were used was also captured to illustrate the numerous, diverse uncertainty issues practitioners must respond to. **RESULTS:** Five themes illustrate how

practitioners manage clients' uncertainty about various issues: (1) *giving more information* (e.g., about the daughter's risk or genetics); (2) *reaffirming or validating a previous decision or behavior* (e.g., about what a mother has told her daughter prior to the consultation); (3) *minimizing risk* (e.g., about daughter's potential for developing the disease); (4) *dispelling myths or misunderstandings* (e.g., about risk in general or related to family history); and (5) *optimizing the future of medicine* (e.g., science will get better in time in screening for or curing the disease). **CONCLUSIONS:** These findings help highlight the complex nature of a genetic counseling interaction and variety of uncertainty issues elevated or high-risk women are faced with managing, not only for themselves but also their offspring. This study helps identify the many communication strategies practitioners must collectively engage in to attend to a diverse array of issues facing women. The study extends the theoretical utility of Uncertainty Management Theory in a context of provider-patient interaction about risk. This study also enhances the potential for enhanced practice by illustrating the important role practitioners play as both a source of emotional and informational support for women in this healthcare context.

Research Implications: This study is theoretically grounded and extends both scholarship and theory. This study builds on our understanding of strategic communication approaches to managing women's uncertainty during genetic counseling sessions and brings a communication theory (UMT) to the forefront as a useful theory to make sense of difficult conversations in psycho-oncology research. The methodological approach is also insightful given we captured provider-patient conversational data. Our results help illustrate the need to examine uncertainty management through actual recorded conversations between women and genetic counselors/practitioners. In doing so, we were able to see how issues of uncertainty are fluid and changing in that they can expand, manifest, or be managed throughout the consultation.

Practice Implications: Collectively, the findings demonstrate the many issues of uncertainty facing women and families and the complex nature in which GCs and practitioners must manage these concerns. These narratives also illustrate how practitioners use different communication strategies in response to the issue of uncertainty at hand (e.g., what type of screening do I do and what about my daughter's screening needs?). By capturing strategic communication in context, we help illustrate how women's uncertainty issues extend beyond just their own personal risk and often largely focus on concerns for their daughter (e.g., how much should I tell my daughter?). Additionally, findings collectively represent communication strategies enacted as support (e.g., informational and emotional support), thereby illuminating the supportive role of the practitioner in managing women's uncertainty.

Given the narrative focus in both capturing (videotaped conversations) and presenting findings (conversational quotes), the results of this study could be easily be utilized in intervention-making, resource development for families/clients, or provider communication training.

Acknowledgement of Funding: Funding for this study was provided by Oki-Data America.

E-3

Acceptance patterns and decision making for human papillomavirus vaccination among Canadian parents: stages of change model

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BACKGROUND/PURPOSE: To date, no study has examined the decision-making trajectory of parents concerning vaccinating their sons with the human papillomavirus (HPV) vaccine. Using the Precaution Adoption Process Model (PAPM), a stage theory of health behaviour, this study examines the changes and patterns of parents' HPV vaccine decision-making status. **METHODS:** 3209 Canadian parents of 9–16 year old boys completed a web-based survey at baseline (Time 1) and 1390 completed the survey 8 months later (Time 2). Quantitative and qualitative data were collected assessing: PAPM stage, HPV-related attitudes, beliefs, and behaviours. Parents were classified according to the six stages of the PAPM: *unaware that their son could receive the HPV vaccine, unengaged, undecided, decided not to vaccinate, decided to vaccinate, or vaccinated.* **RESULTS:** At Time 2, half the parents (47.4%) moved towards vaccine acceptance. Some parents (38.1%) remained in the same stage as baseline, and some parents (14.6%) regressed in terms of their decision-making stage. The most immobile group was those who had decided not to vaccinate, with no parent in this stage moving towards vaccine uptake. Some parents (9.1%) also moved towards deciding not to vaccinate their sons. Logistic regressions of the factors that differentiate between those who 'progressed', 'regressed', and 'non-movers' will be explained. **CONCLUSIONS:** Between T1 and T2, parents predominantly progressed towards HPV vaccine acceptance or stayed in their stage of decision making. It is particularly problematic that some parents moved to deciding not to act, as parents in this stage tend to remain there. Stage-specific interventions are needed to move parents along the vaccine decision-making trajectory.

Research Implications: HPV vaccination is an increasingly important public health issue and a key to cancer prevention. The results of this study will be applied more broadly to improve our understanding of the HPV vaccine decision-making trajectories. Using a prospective, longitudinal design, and theoretical model to examine whether individuals pass through the sequence of stages as proposed by a stage theory has proven to be more informative than single wave cross-sectional designs.

Practice Implications: Prevention offers the most logical and cost-effective long-term strategy for cancer control. Receipt of the HPV vaccine is an important cancer prevention priority. Future health campaigns should address the question of how to push parents along the decision-making continuum towards HPV vaccine uptake. Moreover, examining the potential underlying reasons for why an increasing number of parents are actively against the HPV vaccine is important. Innovative stage-specific interventions that promote vaccine acceptance should be targeted.

Acknowledgement of Funding: This study was supported by Grant #288295 from the Canadian Institutes of Health Research and the Vanier Canada Graduate Scholarships (Vanier CGS).

E-4

Media representation of the HPV vaccine: a content analysis of Canadian newspapers

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BACKGROUND/PURPOSE: Although the HPV vaccine has largely been promoted as preventing cervical cancer, HPV infection can also cause cancers in males. The vaccine has been recommended for males in Canada, yet uptake rates remain extremely low. This study examined *what* information about the HPV vaccine was disseminated to the public and *how* this content was depicted. **METHODS:** We conducted a content analysis of Canadian newspaper articles ($n=232$) published between 1 January 2012 and 1 September 2014. Articles were coded on a number of dimensions related to HPV vaccination. **RESULTS:** Most articles reported female eligibility for the HPV vaccine (93%), but only half (49%) reported male eligibility. A greater proportion of articles discussed male eligibility each year, $\chi^2(2)=22.635$, $p<0.001$, Cramer's $V=0.312$. Many articles (85%) linked HPV to cervical cancer, while fewer noted the link to male cancers (59%) or genital warts (52%). Publication year was also associated with overall tone, indicating an increase in

positive articles as time progressed, $\chi^2(4)=12.471$, $p < 0.01$, Cramer's $V=0.164$. **CONCLUSIONS:** Although articles were generally positive towards the HPV vaccine, approximately half did not discuss male eligibility for the vaccine. Articles also more commonly stated HPV's link to cervical cancer than other cancers that affect males. As a result, many Canadians may not be aware of the importance of male vaccination, which could adversely affect uptake rates. Nevertheless, more frequent mentions of male eligibility each year suggest that male vaccination is beginning to receive more attention in the press.

Research Implications: The media is an important source of information about cancer prevention behaviours. Assessing the content of Canadian media reporting is essential to revealing potential knowledge gaps of the Canadian public regarding HPV. Furthermore, the coding scheme was adapted and revised in an iterative process with frequent discussion of the coding categories between all three coders, resulting in substantially high inter-rater reliability agreement.

Practice Implications: Media communications may strongly influence public awareness, perceptions and acceptance of health technologies. It is important that people receive complete and accurate information in order to make informed decisions regarding the vaccine for themselves and their children. Educational interventions and physician communication may be particularly important in addressing this gap and improving knowledge of HPV in males and debunking common myths and misconceptions about the vaccine. Researchers can also aid this process by clearly disseminating empirical findings to the public through the media.

Acknowledgement of Funding: None.

F-1

Finding My Way: a mixed-methods interim analysis of predictors of adherence to an online psychological intervention for cancer-related distress

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BACKGROUND/PURPOSE: Online psychological interventions hold promise for overcoming access barriers to conventional psychotherapy for cancer distress. However, a key limitation of online interventions is low adherence, with few clear predictors identified in the literature. This presentation reports on a mixed-methods interim analysis of predictors of adherence to treatment and attention-control conditions being trialled, as part of a larger RCT.

METHODS: Data from curatively treated cancer patients who completed the Finding My Way programme before July 2014 ($n=60$) were analysed according to predictors of adherence. Adherence measures included activity level, frequency and duration indices; potential predictors evaluated included baseline demographic, illness and psychosocial variables. A subset of participants ($n=13$) provided qualitative interview feedback on motivators and barriers to adherence, which underwent thematic analysis. **RESULTS:** Adherence was high, with 43 participants (72%) accessing four or more of six modules. Group comparisons revealed high adherers were significantly more likely to be control-group members and had higher levels of social support than low adherers. Multivariate analyses indicated higher adherence was predicted by control group membership, higher social support, higher health service use and less endorsement of blunting coping style. Qualitative analysis suggested adherence motivators fell into three broad categories: intervention, personal and psychological factors, while barriers included illness-related, personal, intervention-related, computer-related and psychological factors; these will be discussed in detail. **CONCLUSIONS:** This study successfully identified several predictors of, and motivators and barriers to, cancer patients' adherence to an online intervention for cancer distress.

Research Implications: This presentation will help to fill a gap in the literature on adherence to online interventions by providing information on potential predictors of, and motivators and barriers to, adherence to an online intervention for cancer-related distress and by making recommendations for future research on potential predictors of adherence to such interventions.

Practice Implications: Information provided in this presentation will help clinicians to identify potential predictors of adherence to online interventions for cancer-related distress, thereby helping to assess the potential future usefulness of referring individual patients to such an intervention with regard to who is likely to adhere to and benefit from the intervention.

Acknowledgement of Funding: This work was funded by NHMRC Project Grant #1042942.

F-2

Assessing institutional capacity to implement psychosocial support services: the National Cancer Institute Psychosocial Care Matrix

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BACKGROUND/PURPOSE: This paper presents results from *A Project to Assure Quality Cancer Care (APAQCC)*, a multi-site study that examined institutional capacity to provide psychosocial services as a function of patient, provider, and/or institutional characteristics. **METHODS:** Oncology social workers at 61 cancer programs across North America administered the 10-item National Cancer Institute (NCI) Psychosocial Matrix to a convenience sample of providers at their respective institutions; 2475 questionnaires were completed. The matrix assesses capacity, ranging from (1) minimal systematic procedures in-place to (5) well-established and coordinated procedures in-place. Within- and between-group comparisons using bivariate analyses were examined for items across types and sizes of cancer programs, providers, and ratio of social workers to institution size. **RESULTS:** NCI-designated Cancer Programs (NCIP) consistently reported significantly lower levels of capacity. In particular, the implementation of systematic procedures for psychosocial screening, assessment, and follow-up was reported by a significantly higher percentage of respondents in Community Cancer Programs (36.4%) than NCIPs (20.9%). Capacity was significantly lower among cancer programs serving a disproportionate percentage of racial minority patients. There were no significant differences in capacity scores by institution size and social work staffing ratios. **CONCLUSIONS:** Capacity was greater for community cancer programs but was not necessarily a function of institution size or social work staffing.

Research Implications: Further investigation is needed to identify characteristics of cancer programs that may be associated with capacity to deliver high quality psychosocial support services.

Practice Implications: Improving implementation of psychosocial oncology support services requires assessing institutional capacity and monitoring changes in service delivery and patient outcomes.

Acknowledgement of Funding: This project is supported by the Association of Oncology Social Work, with an educational grant from Takeda Oncology.

F-3

Cancer patients' reasons for acceptance or decline of psychological intervention: an interview study

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BACKGROUND/PURPOSE: Although cancer care guidelines recommend offering patients psychological care where indicated, only approximately one third of cancer patients report interest in such support. We interviewed cancer survivors accepting and declining psychological intervention, to investigate barriers to and facilitators of engagement. **METHODS:** Semi-structured interviews were conducted with 24 adult survivors of early stage breast or colorectal cancer, who had either accepted or declined psychological care. Half the participants had been offered psychological care during the course of medical treatment, and half had been offered a five-session intervention designed to address fear of cancer recurrence (FCR) in a randomised controlled trial. **RESULTS:** Close to diagnosis and ending hospital-based treatments were identified as ideal times to be offered psychological care, and breast care nurses were considered ideal people to introduce the idea. Reasons for declining psychological care included patients' confidence in their ability to cope without intervention and belief that distress or level of FCR was not sufficiently high to merit intervention. Concern about stigma did not feature as a barrier. Learning strategies for coping and having the opportunity to speak 'without the mask on' to a psychologist rather than to friends or family members who may be emotionally vulnerable were highly valued by those engaged in psychological intervention. **CONCLUSIONS:** Amongst cancer survivors both accepting and declining psychological care, there is a strong belief that psychological intervention should be readily available. A desire to be self-sufficient was a disincentive to accepting psychological care, suggesting self-empowerment strategies may be optimal for many.

Research Implications: Stigma may not play a prominent role in decisions to decline psychological care in a cancer setting. Further research into the type of psychosocial care or support that may appeal to those declining individual psychological support is merited.

Practice Implications: Psychological care offered close to diagnosis or at the end of hospital-based medical treatment and by breast care nurses may be most appealing to cancer patients.

Acknowledgement of Funding: The authors acknowledge the support of Register4 and Psycho-Oncology Co-operative Research Group.

F-4

The Psychosocial Matrix: longitudinal study of use within the NCI Community Cancer Centers Program (NCCCP)

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BACKGROUND/PURPOSE: The Institute of Medicine (IOM) and Commission on Cancer (CoC) have called for the adoption of standards for psychosocial care, including screening for psychosocial distress, as an important component of cancer care. However, there is limited research available to guide implementation. The Psychosocial Matrix was developed as part of NCCCP to self-assess capacity to deliver high quality care. **METHODS:** This tool covers seven domains of psychosocial cancer care. Previously published data presented baseline self-assessment and 2-year follow-up data completed by 14 sites entering the program in 2007, and baseline self-assessment data for 16 sites entering in 2010. The present study ($n=21$) examined 3- and 6-year follow-up data to determine the utility of the measure to advance care. Site comments regarding internal use of the results were also collected. **RESULTS:** While analyses illustrate enhanced capacity over time, sites reported varying patterns of growth by domain. Most sites identified communication of the importance of psychosocial needs and care as the domain most readily achieved (Level 5 performance attained by 57%). However, challenges persisted over time in sites' capacity to identify psychosocial health needs and conduct follow-up and re-evaluation (33% Level 5 in each). Sites reported that the matrix was useful in self-assessment, in strategic planning, and as an internal communication tool. **CONCLUSIONS:** The Psychosocial Matrix shows utility in enabling clinicians to track and address programmatic capacity to deliver psychosocial care over time. Findings also shed light on key domains that can pose challenges to the development and delivery of whole person care.

Research Implications: The Psychosocial Matrix provides researchers with a tool for classifying and monitoring participant programs that can be used to evaluate the impact that structures of care delivery may have on cancer survivors' psychosocial outcomes. This tool may also be useful in tracking uptake of new psychosocial care standards nationally.

Practice Implications: The Psychosocial Matrix has the potential to provide clinical oncology settings with a useful tool to assess and address their capacity to deliver psychosocial care. Further use of information from the self-assessments conducted can benefit program planning and development.

Acknowledgement of Funding: This project has been funded in whole or in part with Federal funds from the National Cancer Institute, National Institutes of Health, under Contract No. HHSN261200800001E.

G-1

Information and its impact on co-survivors of cancer patients

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BACKGROUND/PURPOSE: Head and neck cancer (HNC) is the eighth most common cancer in the world; receiving its diagnosis is extremely distressing for patients and their partners. **OBJECTIVES:** To investigate and compare levels of anxiety, depression, satisfaction with information provision and cancer-related knowledge in partners of patients with HNC receiving a Multimode Comprehensive Tailored Information Package (MCTIP) and partners of patients with HNC receiving ad hoc information provision. **METHODS:** A non-randomized, controlled trial was conducted with partners of HNC patients. Participants were partners of HNC patients recruited at two academic hospitals in Montreal. The test participants received the MCTIP, while the control participants received normal information provision. All participants were evaluated using the Hospital Anxiety and Depression Scale (HADS), Satisfaction with Cancer Information Profile (SCIP) and a cancer knowledge questionnaire at baseline, and 3 and 6 months later. Data were analyzed using descriptive statistics to describe the general characteristics of the sample, *T* test and chi-square test to compare group differences, and mixed model analysis to test the impact of the intervention. **RESULTS:** A total of 31 partners of HNC patients participated in this study and completed all the evaluations. The partners in the test group experienced significantly lower levels of anxiety ($p=0.001$) and depression ($p=0.003$) and were more satisfied ($p=0.002$) with cancer information than partners in the control group. **CONCLUSIONS:** Providing tailored information seems to have positive outcomes regarding anxiety, depression and satisfaction in partners of HNC patients.

Research Implications: Larger randomized studies are warranted to validate these effects.

Practice Implications: Co-survivors' role is very important in cancer care. Therefore, the concerns of the co-survivors and their well-being should be considered while providing care to cancer patients.

Acknowledgement of Funding: None.

G-2

Contradictions of morality in mother–daughter breast cancer coping: a dialectical perspective of the 'right' way to cope

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BACKGROUND/PURPOSE: When women are diagnosed with a serious illness like breast cancer, mother–daughter communication is often prioritized as family members learn to adapt to such a crisis. While these pairs must alter their behavior to cope in a resilient manner, one that maximizes each individual’s well-being, many women have described not knowing how to cope in ways that fulfill each other’s needs. Given that each member is of variant ages or developmental phases of life (and thus on some level, possibly prioritizing divergent belief systems, social histories, and life goals), their coping behaviors may not be congruent. This is further complicated by family belief systems that depict supportive behaviors as right or wrong. Rarely do we consider how a family’s moral commitments to behave in expected right or wrong ways enables and constrains individuals’ coping processes. Additionally, individual and familial conceptualizations of coping may not be compatible with other societal and health recommendations for cancer coping. As a result, women may well be navigating competing and conflicting forms of coping done the ‘right’ way. Their inferences of right or wrong behavior, stemming from divergent personal, familial, societal, and health discourses, carry real consequences for their health outcomes. This study helps to illuminate the tensions that women encounter as they negotiate varying and, perhaps conflicting, moral commitments to cope in healthy and ‘correct’ ways. **METHODS:** Framed by relational dialectics theory (RDT) (Baxter & Montgomery, 1996), we examined several data sets composed of over 100 interviews with female breast cancer patients and their mothers or daughters about how they coped across the disease course. Using a blend of thematic and discourse analytic techniques, we analyzed thousands of pages of data to examine how mother–daughter coping is often fraught with tensions about the ‘right’ ways to cope. Data were coded deductively for depictions of coping associated with three typical communicative pairs of contradictions identified per RDT (i.e., Integration–Separation; Stability–Change; Expression–Nonexpression). Findings are reported thematically for each contradictory pair and represent issues of morality (right or wrong behavior) participants negotiate, tensions they encounter related to each, and how their perceptions tie to health coping or resilience. **RESULTS:** Results demonstrate that women experience each of these conflicting communicative tensions as they cope with cancer. For example, mother and daughter attempts to cope communally (i.e., Integration) by prioritizing time spent together, sharing emotions, etc. were described as simultaneously problematic for each women’s need for space and privacy (i.e., Separation). Likewise, women reported feeling as though they should consistently maintain attitudinal and communicative positivity (i.e., Stability; Expression), to the relative neglect of their needs to express fears, doubts, and negative

emotions (i.e., Change; Nonexpression). **CONCLUSIONS:** Findings appreciate the dialectical nature of right and wrong communication as families negotiate their moral commitments to one another in the face of cancer. This study identifies key contradictions in coping behaviors and processes among mothers and daughters, drawing conclusions about how those tensions may help or hinder their respective health outcomes.

Research Implications: While the role of morality (right or wrong behavior) has been considered in relational research, rarely is it addressed in our understanding of the psychosocial behavior of patients and their families as they cope across the disease trajectory. Growing research in positive psychology and relational resilience suggests certain types of morally tinged communication are associated with healthier relationships. In turn, women and families can perceive certain coping approaches to cancer as right or wrong and tie that behavior to their ability to fight the disease and emerge resilient. We aim to demonstrate the important role morality has specific to cancer coping.

Practice Implications: Patient and family members may frame coping behavior as right or wrong, or good or bad, thereby inferring appropriate or moral behavior with regard to fighting cancer. While families’ belief systems may influence a shared approach to coping, the inference of right or wrong behavior may also create complicated expectations, pressures, and tensions, particularly for patients, that families need to negotiate. Findings presented heighten the role morality plays in family coping and how clinicians may aid families in learning to adjust to the disease in a healthy, communal manner.

Acknowledgement of Funding: National Institute on Aging (NIA) Training Grant T32 AG00048, Juran Center for Leadership in Quality, Penn State University, and University of Iowa.

G-3

Evaluation of truce: an acceptance and commitment therapy (ACT) program for young people who have a parent with cancer

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BACKGROUND/PURPOSE: Young people who have a parent diagnosed with cancer experience significant unmet needs and elevated levels of distress compared with other young people. Few interventions exist to provide support and coping skills to this vulnerable group. ACT was

considered to be an appropriate theoretical framework for such an intervention, as its aim is to help create a full and meaningful life while accepting the pain that life inevitably brings. **METHODS:** A manualized seven-session weekly face-to-face group program called *Truce* for adolescents and young adults (AYAs; 14–22 years) impacted by parental cancer was developed, with parents invited to participate in the sixth session of the *Truce* program. *Truce* is currently being evaluated with young people completing pre-, post-, and 2-month follow-up questionnaires assessing psychological flexibility, mindfulness, distress, unmet needs, coping, and family functioning. Measures of participant satisfaction, engagement, and program fidelity are also collected. **RESULTS:** Results consistently indicate very high satisfaction amongst both young people and their parents. Across the seven sessions, the average level of interest in the program was 8.7 (10 point scale). Additionally, there are promising preliminary results for outcome data focusing on core ACT processes such as psychological flexibility and mindfulness, and these improvements are maintained at follow-up. **CONCLUSIONS:** The *Truce* program for AYAs with a parent with cancer has high acceptability and promise as an effective intervention to improve psychological outcomes for this vulnerable group.

Research Implications: Controlled intervention trials are essential to identify programs that are effective, increasing confidence in their use.

Practice Implications: *Truce* provides clinicians with a much needed program that equips young people impacted by parental cancer with appropriate psychological tools to cope with their experience.

Acknowledgement of Funding: Australian Rotary Mental Health Grant nib foundation.

G-4

The association between family caregiver burden and the survival of advanced cancer patients

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BACKGROUND/PURPOSE: In a randomized controlled trial (RCT), an early palliative care intervention for

persons with advanced cancer and their family caregivers (FCGs) was found to improve patient survival. We hypothesized that the presence of an FCG, higher FCG quality of life (QOL), and lower FCG depression and burden would be associated with higher odds of patient survival. **METHODS:** In total, 123 dyads of persons with advanced cancer and their FCGs and 84 persons with advanced cancer without an FCG participated in an early versus delayed (12 weeks later) RCT of an early palliative care intervention. Caregiver measures of QOL, depression, and burden (objective [OB], stress [SB], and demand [DB]) were collected every 6 weeks for 24 weeks and every 3 months thereafter until the patient's death or study completion. We conducted survival analyses using log-rank and Cox proportional hazards models. **RESULTS:** Although there was no association between having versus not having an FCG and patient QOL, depression, and symptom impact scores, patients with an FCG had a significantly shorter survival ($\chi^2(1)=5.604, p=.018$). Survival in patients with a FCG was not associated with FCG QOL, depression, and SB, but was significantly related to higher FCG OB ($\chi^2(1)=6.894, p=.009$) and DB ($\chi^2(1)=5.799, p=.016$). **CONCLUSIONS:** Contrary to our hypothesis, advanced cancer patients with a FCG had lower survival despite them not appearing sicker than patients without an FCG. Higher FCG OB and SB were associated with decreased patient survival.

Research Implications: These findings should be validated in other studies and the mechanisms further examined.

Practice Implications: Clinicians should find ways to assess and support FCGs and the tasks demanded of them by care recipients nearing end of life.

Acknowledgement of Funding: The parent study was supported by National Institute for Nursing Research (R01NR011871-01), Cancer and Leukemia Group B Foundation Clinical Scholar Award, Foundation for Informed Medical Decision-Making, the Norris Cotton Cancer Center pilot funding, and the Dartmouth-Hitchcock, Section of Palliative Medicine. Dr. J. Nicholas Dionne-Odom is a postdoctoral fellow supported by the University of Alabama at Birmingham Cancer Prevention and Control Training Program (5R25CA047888). Dr. Kathleen D. Lyons, ScD, is supported by a Mentored Research Scholar Grant in Applied and Clinical Research (MRSG 12-113-01-CPPB) from the American Cancer Society. Dr. Bakitas is a recipient of a National Palliative Care Research Center Junior Career Development Award.

H-1

Sex and head and neck cancer: the lived experience of survivors

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BACKGROUND/PURPOSE: Head and neck cancer and its treatment can cause significant disfigurement and functional decline as well as psychosocial distress. This has the potential to cause sexual impairment in survivors. Unfortunately, detailed qualitative data about sexual impairment have not been collected in this population. The purpose of this study is to examine the lived experience of head and neck cancer survivors in terms of sexual function and satisfaction with sexual activity. **METHODS:** Individuals age 21 years or older with a history of head and neck cancer were recruited to participate in a one-on-one semi-structured interview. Interviews were audio-recorded and transcribed verbatim. Transcripts were analyzed by two independent reviewers using ATLAS.ti software. Analysts triangulated findings and confirmed thematic categories. Descriptive statistics were used to describe the sample population. **RESULTS:** Ages of participants ($n=11$) ranged from 33 to 70 years with an average of 55 years. Participants were mostly male (64%), Caucasian (82%), and married (73%). Three themes regarding sexuality emerged from the interviews. The first theme was aspects of sexual experience. Subthemes included desire, frequency, and satisfaction. The second theme was barriers to sexual experience. Subthemes included emotional challenges, physical impairment, and hormonal or chemical problems. The third theme was facilitators of sexual experience. Subthemes included enhanced relationship with spouse or partner and changed perspective after head and neck cancer experience. **CONCLUSIONS:** Survivors of head and neck cancer face unique challenges after treatment that may contribute to sexual impairment. This study provided detailed qualitative data concerning the sexual experience of head and neck cancer survivors.

Research Implications: This study will aid researchers in identifying elements to be included in the instrument development process of assessing sexuality in survivors of head and neck cancer.

Practice Implications: This study will aid clinicians by identifying multidimensional issues that are important in assessing sexuality in survivors of head and neck cancer.

Acknowledgement of Funding: The project described was supported by CTSA award no. UL1TR000445 from the National Center for Advancing Translational Sciences.

H-2

Intimacy and sexual dysfunction in bladder cancer patients treated with cystectomy

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BACKGROUND/PURPOSE: Intimacy and sexual dysfunction after radical cystectomy (RC) and urinary diversion are understudied. This study assessed sexual quality of life (QOL) and the sexual concerns of bladder cancer patients after RC. **METHODS:** In a mixed-methods study, members of Kaiser Permanente treated with RC and ileal conduit (IC) ($n=91$) or RC and neobladder (NB) ($n=26$) were mailed surveys including validated QOL measures 6 months post-surgery. Sexual domain scores were compared between IC and NB groups using *t*-test for means and Chi-square test for percentages. Survey findings were supplemented by analysis of five semi-structured interviews and three focus groups ($n=32$) of men and women more than 12 months after RC. **RESULTS:** Six-month sexual domain scores showed 44% of NB versus 24% of IC patients were fearful of resuming sex ($p=0.22$); 65% of NB patients versus 11% of IC patients reported severe interference with personal relationships ($p=0.06$); 27% of NB versus 14% of IC patients reported severe interference with intimacy ($p=0.12$). Return to sexual activity after surgery did not differ between surgery groups ($p=0.40$). Qualitative data echoed survey results and suggested that NB patients experience more difficulty returning to sexual activity despite better body image compared to IC patients. Patients encouraged early assessment of sexual concerns. **CONCLUSIONS:** NB is thought to minimize psychosocial distress caused by a urostomy, but 6 months after surgery, NB patients reported worse sexual outcomes than IC patients. Our results provide anticipatory guidance for patients facing RC and suggest that providers should address sexual concerns as early as 6 months after surgery.

Research Implications: This study provides mailed survey and interview findings regarding intimacy and sexual dysfunction in bladder cancer patients undergoing cystectomy and includes both patients with neobladder and those with ileal conduits.

Practice Implications: Results provide information for clinicians involved in follow-up care for bladder patients and indicate that sexual concerns can be addressed as early as 6 months post-surgery. Future research should include long-term follow-up and test interventions to support patients.

Acknowledgement of Funding: NCI 1 R01 CA164128
Urinary Diversion among Bladder Cancer Survivors:
Cost, Complications, and QOL.

H-3

Decrease in intercourse satisfaction in men who recover erections after radical prostatectomy

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BACKGROUND/PURPOSE: It is assumed that if a man 'recovers' erections post-radical prostatectomy (RP), intercourse satisfaction (IS) will return to pre-RP levels. We explored if IS returned to baseline levels post-RP. **METHODS:** We assessed 166 men pre-RP and 24 months (m) post-RP. The International Index of Erectile Function (IIEF) erectile function (EF) and intercourse satisfaction (IS) domains and a single question on PDE5i use were recorded. Men with penetration hardness erections (PHE) at baseline (EFD \geq 24) were included. PHE and EF back to baseline (BTB) determined erection recovery at 24 m. Analyses included repeated measure *t*-tests, correlation coefficients, and multiple regressions. Effect sizes (*d*) were calculated. **RESULTS:** Men were 58 ± 7 years old and EF scores were 29 ± 2 at baseline and 19.7 ± 10 at 24m ($p < 0.01$). Overall, IS decreased (12 to 8.3, $p < 0.01$, $d = 0.87$), even for men with PHE at 24m ($d = 0.50$); not using PDE5i ($d = 0.61$) and using PDE5i ($d = 0.42$; all $ps < 0.01$). For men with 24m PHE, IS related to age ($r = -0.23$), baseline EF ($r = 0.25$), baseline IS ($r = 0.56$), and 24m EF ($r = 0.36$; $ps < 0.05$); baseline IS ($\beta = 0.46$) and 24m EF ($\beta = 0.23$) remained significant in multivariate analysis. Even for men with BTB recovery, IS decreased (12.4 to 11.7, $p = 0.02$, $d = 0.35$). In this subgroup, 24m IS related to baseline EF ($r = 0.45$), baseline IS ($r = 0.63$), and 24m EF ($r = 0.35$; $ps < 0.05$); only baseline IS ($\beta = 0.49$) was significant in multivariate analysis. **CONCLUSIONS:** IS will decrease for most men post-RP, even for those who achieve functional erections and BTB recovery post-RP. These data may assist clinicians in counselling patients pre-RP.

Research Implications: Future research should explore factors that contribute to intercourse satisfaction, above and beyond recovery of erectile function, for men who undergo radical prostatectomy.

Practice Implications: Clinicians should appropriately educate patients that men report lowered intercourse satisfaction post-RP even when they achieve functional erections or recover back to baseline erectile function.

Acknowledgement of Funding: NCI T32 CA009461 and Celia Mann Caton Fellowship Fund.

H-4

Effects of patient-centered interventions on persistent urinary incontinence after prostate cancer treatment

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BACKGROUND/PURPOSE: Persistent urinary incontinence is a common and debilitating problem among prostate cancer patients. This study examines whether an intervention combining pelvic floor muscle exercise (PFME) and symptom self-management improves urinary continence and quality of life in prostate cancer patients. **METHODS:** A randomized, controlled, longitudinal clinical trial was conducted between 2010 and 2013. 279 prostate cancer patients with persistent urinary incontinence were randomized to three groups: (a) biofeedback PFME plus a support group (BF+SUPPORT), (b) biofeedback PFME plus telephone contact (BF+PHONE), and (c) usual care (UC). The BF+SUPPORT and BF+PHONE groups received the intervention over 3 months. The intervention included a session of biofeedback-assisted PFME and six biweekly sessions of Problem-Solving Therapy, delivering symptom management skills through a peer support group or telephone contacts with a therapist. All subjects were assessed blind at baseline, 3, and 6 months. **RESULTS:** The BF+SUPPORT and BF+PHONE groups had a lower frequency of daily urinary leakage than the UC group at 3 months ($p = 0.019$, $p \leq .001$). The BF+SUPPORT group had a lower leakage amount at 6 months than the UC group by 13.3 g ($p = 0.003$). The BF+SUPPORT and BF+PHONE groups reported less symptom severity on IPSS ($p \leq .001$) and fewer incontinence problems on the VAS ($p \leq 0.01$) than the UC group at 6 months. **CONCLUSIONS:** The study findings show that PFME practice plus symptom self-management in a peer support setting can significantly improve urinary continence and quality of life of prostate cancer patients.

Research Implications: Further research that incorporates a peer-support element and simplifies the study intervention to integrate it into clinical care can make this behavioral treatment available through healthcare systems to benefit those in need.

Practice Implications: Teaching prostate cancer patients PFME through biofeedback and self-manage skills through behavioral changes can improve clinical outcomes of prostate cancer patients suffering from persistent urinary incontinence

Acknowledgement of Funding: The study was supported by the National Institutes of Health/National Cancer Institute (R01CA127493; PI: Zhang).

I-1

The impact of gender and race on diagnosing colon cancer during a primary care visit

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BACKGROUND/PURPOSE: Outcomes for colon cancer (CC) patients vary by race and gender with minorities and women diagnosed at later stages with subsequent shorter survival times. These differences may be due to a delayed diagnosis for minorities and women. This study tested this hypothesis using an unannounced standardized patient experimental methodology. **METHODS:** This study introduced unannounced standardized patients (USPs) trained to present symptoms of colon cancer (CC) to 220 primary care physicians (PCP) to examine the association between race and gender on diagnosis of CC. Each PCP saw two USPs, one of whom was female and one African American. The PCPs were blinded to the diagnosis and identity of the USP and agreed to have the encounter surreptitiously audiotaped. Medical records were obtained and the consultation was qualitatively coded. The main outcome was defined as documentation of a recommendation for appropriate testing and/or specialist referral. **RESULTS:** 39.2% of visits resulted in an appropriate outcome. No differences were seen by race, but only 34% of women received an appropriate outcome versus 44% of men ($p < .04$). The multilevel logistic regression model (USP visits nested within PCPs) showed that inappropriate outcome is associated with being female and discussing a specific diagnosis, whereas discussing testing and referrals and confirmatory speech was significantly associated with appropriate outcomes. The entire model explained 65% of the variance. **CONCLUSIONS:** Gender played a crucial role in recommendation of appropriate testing/referral for symptoms indicative of CC. Reasons for this may be a belief that CC is much more common in men and a focus on OB/GYN diagnoses for women. These may have contributed to decision-making miscues by the PCPs.

Research Implications: The USP methodology was able to detect gender but not racial disparities in the diagnostic process for colon cancer.

Practice Implications: Physicians need to become more aware of their biases concerning women's health. Communication skills training to assist time pressured physicians to communicate more effectively and efficiently and to shed preconceived ideas that can cause them to miss diagnostic clues could lead to better cancer care outcomes.

Acknowledgement of Funding: This study was funded by NIH/NCI grant #R01 CA134280.

I-2

Patient navigator competencies: differences in role perception across health professions

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BACKGROUND/PURPOSE: The research team sought to create consensus-based core competencies for patient navigators to provide role clarity and standardization. We also sought to examine differences in perceptions of the patient navigator role between nonlicensed patient navigators, nurses/nurse navigators and social workers. **METHODS:** The competency statements aligned with the Association of American Medical Colleges common taxonomy for healthcare professional competencies. A 272-question survey assessed 65 competency statements. Endorsement was stratified based on type of respondent to assess variations in perceptions regarding nonlicensed patient navigator scope of practice. **RESULTS:** Over a 4-week period, 618 individuals consented to participate and 525 were eligible. Every competency statement had a minimum of 81% overall endorsement. 32 of 65 competency statements (49%) had greater than 90% endorsement by all three responder types (nonlicensed patient navigators, nurses/nurse navigators and social workers). Actions endorsed >90% by all three respondent types include the following themes: assisting patients; health promotion; evaluation; quality improvement; role promotion; communication; advocacy; cultural competence; stewardship; responsiveness; ethics; learning and improvement; basic knowledge of medical terminology, health system and health insurance; and organization, time management, problem solving and critical thinking. Respondents' perceptions varied regarding the appropriate role of nonlicensed navigators in educating patients and managing emotionally sensitive interactions. **CONCLUSIONS:** Endorsement of competency statements was universally high; however, variation across respondent types appeared to be driven by clinical role boundaries, specifically the degree to which nonlicensed navigators should find, customize and use information to participate in patient education and manage emotionally sensitive conversations. Feedback from diverse stakeholders informed development of the core competencies.

Research Implications: Core competencies provide a framework for nonlicensed navigator scope of practice. Variation in survey responses can be used in future research to improve communication and role boundaries in multidisciplinary patient care teams.

Practice Implications: This study clarifies the role of patient navigators who have not been clinically trained as social workers or nurses, which can help to improve

functioning of multidisciplinary patient care teams. Analysis of differences across respondent types increases understanding of the differences in perceptions of role boundaries within the multidisciplinary team. By understanding the perspective of colleagues, patient navigators can better articulate their role as part of the patient care team and stay within their scope of practice to optimize patient care and reduce legal liability.

Acknowledgement of Funding: None.

I-3

Utilization of screening services for breast and cervical cancers among non-academic female staff of Benue State University, Makurdi, Nigeria

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BACKGROUND/PURPOSE: To examine the relationship between awareness and utilization of mammography/pap smear screening services for breast and cervical cancers among non-academic female staff of Benue State University, Makurdi. To examine the relationship between grade level and utilization of mammography/pap smear screening services for breast and cervical cancers among non-academic female staff of Benue State University, Makurdi. To examine the joint contribution of grade level and awareness on utilization of mammography/pap smear screening services for breast and cervical cancers among non-academic female staff of Benue State University, Makurdi. Breast and cervical cancer screening are of top priority in psycho-social oncology due to the high mortality rates of women dying from these cancers especially in developing countries. **METHODS:** The study is a survey research and the ex post factor design was adopted. The participants for the study were non-academic female staff of Benue State University, Makurdi. A total number of 243 female participants availed themselves for the study. The data revealed that the participants' ages ranged from 22 to 60 years. A Pap Smear Questionnaire was adapted from Dr. Jiun-Hau Huang, SCD (1995) as well as a Mammogram Questionnaire developed by John Ibarra (2010). After revalidation, it revealed the Cronbach's alpha coefficient ranging from .83 to .88, showing a high reliability. The non-probability convenient sampling technique was utilized to secure participants for the study. **RESULTS:** A significant relationship was found between the awareness and utilization of mammogram and pap smear screening services for breast and cervical cancers among non-academic female staff of Benue State

University, Makurdi. That is, when the awareness increases, the utilization of mammogram and pap smear screening services also increases ($r(232) = .352; p < .01$). No significant relationship was found between grade level and utilization of mammogram and pap smear screening services ($r(199) = .084; p > .01$). The results reveal a significant joint contribution of grade level and awareness on mammogram and pap smear screening services ($R = .341, R^2 = .116; F(2,196) = 12.881, p < .01$). **CONCLUSIONS:** Since the results reveal a significant relationship between awareness and utilization of these screening services, there is need to increase the awareness of women in Benue State, Nigeria, on the utilization of mammogram and pap smear screening services because early detection can guarantee a cure from cancer.

Research Implications: Importantly, the study implies that increased awareness shall increase utilization of mammogram and pap smear screening services for breast and cervical cancers in this part of Nigeria.

Practice Implications: This finding will be useful to health professionals such as radiologist, clinicians, medical researchers, patients' advocates and public health professionals in creating awareness and improving psycho-social care.

Acknowledgement of Funding: None.

I-4

Patient navigation: scope of practice as members of the oncology multidisciplinary care team

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BACKGROUND/PURPOSE: Patient navigation (PN) is an effective strategy to increase adherence to cancer screening and treatment. Patient navigators (PNs) assist patients in overcoming barriers to cancer screening and treatment, particularly among the underserved. This study examined specific activities of PNs in their efforts to increase colorectal cancer (CRC) screening adherence in a medically underserved population. **METHODS:** This presentation derives its findings from a subset of data from an RCT examining the effectiveness of PN in CRC screening (specifically, colonoscopy) at the largest safety-net hospital in New England. Over 800 patients aged 50 to 75 years were randomized into either the treatment (received navigation services) or control (received usual care without navigation) group. Preliminary analysis assessed how navigators spend their time, and

further analysis will use cross-tabs and chi-square to discern which of their activities are more likely to result in completed colonoscopy than others. **RESULTS:** Navigated patients were 48% African American, 32% Hispanic, 20% White, and 32% other or multi-race. PNs spent the most time: assessing barriers/needs, facilitating appointment scheduling, reminding patients of appointments, educating patients about CRC and the importance of screening, and arranging transportation. **CONCLUSIONS:** PNs working with this medically underserved population spent most of their time reducing concrete barriers to treatment.

Research Implications: This RCT adds to the growing literature on the efficacy of PN in cancer treatment and screening.

Practice Implications: PNs are members of the multidisciplinary oncology healthcare team. These findings may help the team incorporate PN services into cancer programs effectively and without duplicating services provided by oncology social workers and nurses.

Acknowledgement of Funding: This study was funded by the Centers for Disease Control and Prevention.

J-1

Use of prescription medications for treating anxiety and depression among self-identified cancer survivors in the National Health Interview Survey 2010–2013

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BACKGROUND/PURPOSE: The use of prescription medication for treating anxiety and depression is increasing in the general population, but no national estimates for the cancer survivor population exist. We investigated whether cancer survivors take medications for depression and anxiety at similar percentages to adults without cancer and whether the same sociodemographic characteristics predict medication use among both groups. **METHODS:** SAS and SUDAAN were used to perform descriptive analyses and logistic regression using sampling weights and accounting for the stratified survey design. National Health Interview Survey data from years 2010 to 2013 were used to examine self-reported use of prescribed medication for anxiety and/or depression among cancer survivors and those never diagnosed with cancer. **RESULTS:** Of 3388 adult cancer survivors, 15.5%

($n=513$) reported taking medication for anxiety and 14.5% ($n=489$) for depression; 11% ($n=382$) were taking medications for both conditions. Usage was lower among adults without cancer (8.3% anxiety; 7.9% depression; 6% both). Among cancer survivors, characteristics associated with taking medications for anxiety and depression included being female, White, non-Hispanic, younger than age 65 years, having never married, less education, having a usual place for medical care, and more chronic health conditions. Among adults without cancer, the same characteristics were predictive with the exception of education, which was nonsignificant. Additionally, insurance type emerged a significant predictor of medication use among adults without cancer. **CONCLUSIONS:** Cancer survivors are more likely to use prescription medication for anxiety and depression than are adults without cancer. While many of the same socio-demographic characteristics predict use among survivors as they do among adults without cancer, differences exist.

Research Implications: This study provides national estimates of prescription medication use for anxiety and depression among cancer survivors and can serve as a benchmark for monitoring national trends.

Practice Implications: Identifying the rates and patterns of prescription medication use for anxiety and depression among cancer survivors is a first step in assessing the adequacy of treatment for psychosocial distress after cancer. Future research can compare medication usage with other forms of treatment and coping and assess outcomes of such treatments.

Acknowledgement of Funding: None.

J-2

A randomised trial of a psychosocial intervention for depressed cancer patients integrated into routine care

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BACKGROUND/PURPOSE: Barriers to the integration of psychosocial care into routine cancer care include limited access to services and concerns about stigma. This study aimed to evaluate a model of care in which patients who screened positive for depression received a brief tailored psychosocial intervention embedded in routine clinical care, delivered by frontline health professionals.

METHODS: In the stepped wedge design, participating sites were randomly allocated from Control to Training then Intervention conditions. Thirty-seven health professionals completed manual-based training and skill development before delivering up to four therapy sessions to 70 patients with HADS scores of 8 to 21. The primary outcome was difference in HADS scores from baseline to 10-week follow-up. Secondary outcomes were quality of life (FACT-G; EQ-5D), supportive care needs (Supportive Care Needs Survey), and Demoralisation (Demoralisation Scale). **RESULTS:** Baseline measures were obtained for 469 patients. The majority were female (70%) and married, and 32.8% had advanced disease. Mean HADS scores were 8.8 (SD=6.30) and 8.6 (SD5.90) for Intervention and Control groups, respectively ($p=0.59$). At follow-up, there was no significance difference in total HADS scores between Control and Intervention groups. Higher baseline depression score was predictive of improvement ($p < 0.001$). Improvement in anxiety was predicted by higher baseline anxiety score ($p < 0.001$) and lower FACT functional well-being score ($p < 0.001$). Patients with advanced disease were more likely than those with early disease to experience reduction in supportive care needs. **CONCLUSIONS:** Frontline health professionals can provide psychosocial care, but interventions should target those most likely to benefit rather than being generically applied.

Research Implications: These results provide preliminary evidence of the characteristics of patients who are most likely to benefit from a brief psychosocial intervention integrated into clinical care. Further analysis is required of the specific types of therapy which are most likely to be of benefit for depressed cancer patients.

Practice Implications: Integration of psychosocial care into routine cancer care can be achieved through a model of care in which frontline health professionals who have participated in focused training and skill development provide brief tailored therapy.

Acknowledgement of Funding: The PROMPT study was supported by beyondblue: the national depression initiative.

J-3

Relations between depression and healthcare use in patients diagnosed with cancer

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BACKGROUND/PURPOSE: Depression in cancer patients may impact the course of care and health systems. Depression may increase 1-year healthcare costs by nearly 41% in medical patients by way of increased office visits, increased likelihood of visiting emergency rooms, and/or

readmissions within 30 days of discharge. The present study examined the increased risk that depression confers on healthcare use in cancer patients. **METHODS:** A retrospective chart review was done on 7332 University of California San Diego (UCSD) Healthcare System patients with a diagnosis of any cancer in 2011. Using ICD-9 codes, patients were coded as depressed ($n=632$) or nondepressed ($n=6700$). Total number of visits to the UCSD healthcare system for 2011 was calculated, and participants were coded as having an ER visit (yes/no) or 30-day readmission (yes/no) during 2011. A probabilistic index was computed to determine the probability that a randomly selected depressed patient had more visits than a randomly selected nondepressed patient. Odds ratios were computed for ER visits and 30-day readmissions. **RESULTS:** Results showed a 73% probability that depressed cancer patients had more healthcare visits than nondepressed patients ($p < .001$). Depressed patients were more likely to visit the ER (OR=2.98; 95% CI=2.45–3.63) and experience a 30-day hospital readmission (OR=2.32; 95% CI=1.96–2.75) relative to nondepressed patients. **CONCLUSIONS:** Results suggest that depression among cancer patients confers a significant risk for greater healthcare use. Identification and treatment of depression may reduce overall healthcare costs and burden to healthcare systems.

Research Implications: Longitudinal studies are needed to determine if reduction of depressive symptoms, or remission of depression, reduces overall healthcare use and costs.

Practice Implications: Healthcare teams who treat cancer patients may wish to screen for depression and refer to psychosocial services to manage depressive symptoms and reduce overall healthcare costs.

Acknowledgement of Funding: None.

J-4

Modality of exercise influences rate of decrease in depression for cancer survivors with elevated depressive symptomatology

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BACKGROUND/PURPOSE: This feasibility study aimed to identify whether different types of exercise provide similar reductions in depression symptoms to cancer survivors with elevated depression, compared to control. **METHODS:** 32 participants (58.9 ± 9.4 years) were allocated to a 12-week clinic-based, supervised exercise group ($n=10$), an unsupervised, home-based exercise group ($n=8$), or a usual care control group ($n=14$). The

supervised group performed two combined resistance and aerobic sessions weekly. Home-based participants were provided with printed material about benefits of exercise and were encouraged to complete 150 min of exercise weekly. Controls received no exercise or printed material and were encouraged to maintain usual activity. **RESULTS:** Both home-based (6.4 ± 5.3 to 2.2 ± 2.9 , $p = .006$) and supervised (6.9 ± 4.2 to 4.0 ± 2.4 , $p = .021$) interventions effectively reduced HADS-D scores compared to control (7.2 ± 2.5 to 7.7 ± 3.6). Not only did the home-based group decrease depression to a greater extent but also more rapidly. HADS-D scores at week 6 were 3.4 ± 3.5 and 6.1 ± 4.2 for the home-based and supervised groups, respectively ($d = 0.50$). **CONCLUSIONS:** The rate of exercise-related reductions in depression was influenced by the modality of exercise. Psychological mechanisms such as mastery and distraction may have accounted for initial rapid improvements in the home-based group. However, increasing the duration of the programme appeared to diminish the favourable short-term response to self-managed exercise.

Research Implications: The findings of this research suggest that exercise for depression in cancer is beneficial. However, more information is required to understand the optimal prescriptive factors that influence mood. The shift in rate of response should be examined in more detail including adherence.

As this was a feasibility study, a larger randomised trial should be conducted to confirm the findings.

Practice Implications: Comorbid depression negatively impacts on the quality of life of cancer survivors. Rates of clinically disruptive depression are reportedly three times higher than the noncancer population. Therefore, there is a need to treat or manage depression. Exercise appears to be an effective alternative to pharmacotherapy or psychological counselling. This additional therapy may be more suitable for some patients.

Acknowledgement of Funding: None.

K-1

When ethical dilemmas split teams: case studies of fertility preservation in the context of metastatic cancer

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BACKGROUND/PURPOSE: In recent years, the American Society for Clinical Oncology and the American Society of Reproductive Medicine have recommended that the impact of cancer treatment on fertility should be discussed with all cancer patients of reproductive age and that fertility preservation options should be offered

routinely.¹⁻² While fertility preservation options such as oocyte or embryo cryopreservation with or without gestational surrogacy have made it possible for cancer patients to become parents, the associated decision-making process can involve significant ethical dilemmas.³ The potential dissonance involved in confronting a life-threatening diagnosis while simultaneously considering the deeply human desire to have a child presents a struggle for cancer patients and clinicians.⁴ This struggle intensifies when the patient has metastatic cancer and a genetic mutation. We present several cases raising significant questions as to whether current informed consent processes and legal safeguards adequately address the ethical quandaries inherent in oncofertility preservation. **METHODS:** Case report describing patients with metastatic leiomyosarcoma and BRCA positive metastatic breast cancer who pursued fertility preservation. **RESULTS:** We present two cases:

Case 1: 52-year-old engaged woman with metastatic leiomyosarcoma to lung on oral chemotherapy and s/p mastectomy involving total removal of left scapula considering gestational surrogacy with donor egg and sperm provided by 65-year-old fiancé.

Case 2: 35-year-old single woman with a medical history of triple-negative breast cancer and a psychiatric history significant for panic disorder and possible histrionic traits. She underwent genetic testing and was found to have a BRCA1 mutation. At the time of her diagnosis, she was 6 months into a new relationship. She underwent neoadjuvant chemotherapy followed by bilateral mastectomies and radiation therapy. She recurred with metastatic disease to lung 3 months after completing treatment. At that time, she requested a consult with the hospital's reproductive medicine specialist, supported by her medical oncologist. The patient then underwent embryo cryopreservation utilizing her boyfriend's sperm and selected a gestational carrier, the young fiancé of her boyfriend's cousin. In individual sessions with her social work therapist, the patient conveyed a strong desire for childbearing yet also expressed concerns about her prognosis and the impact that her death might have on a child. Several team members raised concerns about the ethical dilemmas inherent in an embryo transfer and sought a formal ethics consultation. It was ultimately decided that the patient might benefit from a meeting with her medical oncologist where she could ask direct questions about her prognosis prior to proceeding with the embryo transfer. The patient elected not to have her boyfriend present for these discussions, resulting in concerns about his understanding of her prognosis and ability to make an informed decision regarding the embryo transfer. Ultimately, the transfer (without pre-implantation genetic diagnosis despite her BRCA positivity) occurred and resulted in a pregnancy. The patient's cancer continued to progress, and she ultimately died within a month of her baby's birth.

CONCLUSIONS: These cases illustrate the potential for ethical dilemmas. Although ethics panels have suggested that concerns over the welfare of resulting offspring should not justify denying cancer patients assistance in reproducing, there is an absence of research describing the psychological effects of childbearing in metastatic patients or physical/psychological outcomes in their offspring. There are no previous case reports describing the use of fertility preservation in terminally ill patients, and we believe that this case will promote rich discussion about the ethical ramifications as well as the impact of these challenging cases on team dynamics.

Research Implications: This case report may provide impetus for researchers to design studies examining the psychological effects of childbearing in metastatic cancer patients, including tracking physical/psychological outcomes in both children and family caregivers.

Practice Implications: As fertility preservation methods become more widely accepted within clinical oncology practice, psychosocial providers should be aware of possible ethical challenges relating to capacity and prognostic understanding in patients and caregivers, all of which may affect team dynamics.

Acknowledgement of Funding: None.

K-2

Individual and workplace changes: results of a nurse reproductive health training program follow-up survey

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BACKGROUND/PURPOSE: Educating Nurses about Reproductive Health in Cancer Healthcare (ENRICH) is an 8-week web-based program that trains oncology nurses to effectively communicate about reproductive health to adolescent and young adult (AYA) patients. ENRICH goals include individual and workplace level changes to facilitate discussion of reproductive health. This report presents the results of a 6-month follow-up survey. **METHODS:** Nurses who completed the program in 2014 received an 11-item survey about perceived changes in their knowledge and confidence in initiating FP discussions and specific actions they initiated regarding reproductive health in their workplace. They were also asked about global workplace changes including new policies, in-service education, patient education materials, collaborations with reproductive health specialists (RHSs), and patient navigation. Nurses received a gift card for

participation. **RESULTS:** From 77 nurses in the program, 54 completed the survey (70% response rate). On average, nurses rated perceived changes in their knowledge and confidence on a 10-point scale as 'significant change'. The most common action to promote change was sharing with colleagues specific strategies on initiating reproductive health conversations. Participants also reported implementing a workplace reproductive health policy (30%), providing in-service education (37%), developing patient education materials (26%), initiating a patient navigator role (28%), and workplace collaborations with RHSs (46%). **CONCLUSIONS:** ENRICH participants perceive themselves to have greater knowledge and confidence post-program participation. In the short term, these perceptions appear to facilitate numerous individual actions and institutional level changes regarding improved comprehensiveness of reproductive health in the oncology care setting.

Research Implications: As cancer patients live longer, there is a greater focus on improving quality of life, including the areas of fertility preservation and reproductive health. The results of this abstract and training program may help researchers develop additional curriculums on important quality of life topics in cancer healthcare.

Practice Implications: ENRICH is effective at training oncology nurses to communicate about reproductive health to AYA patients. The results from this abstract indicate that this program, and future expansions of this program, will be important to improvements in clinical practice with the AYA population.

Acknowledgement of Funding: ENRICH is funded by a National Cancer Institute R25 Training Grant: #5R25CA142519-02.

K-3

Impact of the ENRICH (Educating Nurses about Reproductive Issues in Cancer Healthcare) web-based training program

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BACKGROUND/PURPOSE: Communicating about reproductive health and fertility preservation (FP) is of paramount importance for adolescent and young adult (AYA) cancer patients. ENRICH (Educating Nurses about Reproductive Issues in Cancer Healthcare) is a web-based communication skill building curriculum for oncology nurses, to initiate reproductive health discussions with AYA patients. This abstract describes participant

outcomes regarding knowledge, satisfaction, willingness to recommend the program to others, and confidence in discussing FP. **METHODS:** Selected applicants were enrolled in an 8-week course that incorporated didactic content and interactive learning on the following topics: male and female reproductive biology, FP, family building options, pediatric, sexual health and contraception, communication, and practical applications. Each learner completed a 14-question pre- and post-test to assess changes in baseline knowledge, as well as a program evaluation to evaluate the other outcomes of interest. **RESULTS:** Of 84 applicants accepted to the ENRICH Program, 77 completed the course (91.6% completion rate). The majority (71.6%) scored higher on the post-test after course participation. Program evaluation results indicated almost all participants (89%) reported they were satisfied with and would recommend this training program to other oncology nurses and reported increased confidence in discussing FP topics. **CONCLUSIONS:** The ENRICH curriculum improved nurses' knowledge and confidence in discussing reproductive health and FP with AYA patients. Results suggest we have successfully developed a network of trained nurses that are prepared to share information, resources, and disseminate program content. Future goals include curriculum adaptation tailored for social workers, psychologists, child life specialists, and genetic counselors.

Research Implications: There is a great need to communicate reproductive health issues to AYA cancer patients to improve future quality of life. Results from this training program may help researchers identify additional quality of life needs or further adaptations to current curriculums focusing on reproductive health and fertility preservation topics.

Practice Implications: ENRICH is an effective training program for oncology nurses to communicate about reproductive health to AYA patients. Learner results indicate the training program serves as a valuable communication skill building tool, increasing confidence in discussing reproductive health and fertility preservation topics.

Acknowledgement of Funding: ENRICH is funded by a National Cancer Institute R25 Training Grant: #5R25CA142519-02.

K-4

Young adult female cancer survivors' pre-treatment fertility-related experiences relate to decision regret about fertility preservation in post-treatment survivorship

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BACKGROUND/PURPOSE: Many young adult female cancer survivors (YAFCS; 18–39 years old) want to have children in the future but do not undergo fertility preservation (FP) before receiving gonadotoxic treatment. This study evaluated YAFCS survivors' fertility-related experiences and factors contributing to decision regret in post-treatment survivorship. **METHODS:** Secondary analyses of a retrospective survey of YAFCS' fertility-related experiences (18–39 years old at diagnosis). The survey was developed by the research team and included the Decision Regret Scale (DRS). Analyses included descriptive statistics, *t*-tests, ANCOVAs, and chi-square. **RESULTS:** Survivors (*N*=173) were an average of 35 years old (*SD*=5.2) and 2 years (*SD*=1.4) post-treatment. At diagnosis, 92% were premenopausal, 81% were partnered, 44% had at least one child, and 84% wanted (more) children or were unsure; 87% received fertility-related information (verbal or written). 52 women (30%) underwent pre-treatment FP. Lack of time (*p* = .001) and emotional distress (*p* = .02) related to greater decision regret after treatment among women who did not undergo FP; not wanting more children related to less regret (*p* < .001). Dissatisfaction with fertility-related information before treatment related to a decreased likelihood of undergoing FP (*p* < .05) and greater post-treatment regret (*p* < .05). Most women felt they made the right decision (62%); however, 15% reported regret and 19% would not make the same choice again. **CONCLUSIONS:** YAFCS who do not undergo FP may experience decision regret after treatment, which may indicate heightened fertility-related distress in survivorship. Interventions to improve pre-treatment referrals to receive fertility counseling and facilitate informed decision-making about FP may help alleviate post-treatment distress. Limitations include retrospective, cross-sectional design.

Research Implications: Future research should explore how fertility counseling and psychosocial support around decision making about fertility preservation may improve post-treatment distress among young adult female cancer survivors who want to have children in the future.

Practice Implications: Clinicians should consider the future reproductive goals of their young adult female cancer patients and make appropriate referrals for fertility counseling, so patients may consider their fertility preservation options before initiating gonadotoxic treatments.

Acknowledgement of Funding: NCI T32 CA009461 and Celia Mann Caton Fellowship Fund.

L-1

Translating distress screening into cancer care: an implementation case study at Gold Coast University Hospital, Australia

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BACKGROUND/PURPOSE: Despite clinical practice guidelines, distress associated with cancer diagnosis or treatment is often unrecognised and untreated. Our study examined a change in practice in Medical Oncology, Gold Coast University Hospital to introduce routine screening for distress in cancer patients (Distress Thermometer) and referral to psychological care. **METHODS:** Phase 1 occurred 6 months pre-implementation. Four Medical Oncology staff were interviewed about their perspectives on current practice, benefits, barriers, and facilitators of distress screening in the unit. A psychosocial care model was then developed and piloted in a small focus group ($n=5$). Implementation commenced February 2015; Phase 2 (July 2015) will review pre-post implementation distress screening and referral rates. **RESULTS:** Thematic analysis of Phase 1 interviews identified benefits (minimises risk), service gaps (few cancer care coordinators), barriers (staff overwhelmed by referrals), and facilitators (integrate with current practice) of implementing distress screening. Results informed development of a psychosocial care model describing key staff roles; screening cut-off scores to prompt staff action; decision rules to guide service use and referral; and core information and referral pathways for patients identified as distressed. Additional outcomes included enabling direct referral to external supportive care services for patients. The focus group identified a need for distress screening training and resources for staff. Outcomes of subsequent training identified 'super-users' to train other staff and screening competency development. **CONCLUSIONS:** Critical steps to support implementation of routine distress screening and increase staff ownership and involvement in the process include identifying service gaps, barriers, and facilitators, and developing a psychosocial care model.

Research Implications: This study addresses the scant available research describing the process of implementing routine distress screening and referral to appropriate psychological care in clinical settings.

Practice Implications: This case study provides one example of how a change in practice in clinical settings may be implemented to facilitate increased recognition of and response to distress in cancer patients.

Acknowledgement of Funding: None.

L-2

Is there a case for psycho-oncology in India? Establishing the proof of concept

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BACKGROUND/PURPOSE: Psycho-oncology in India has not kept pace with other countries due to its socio-culture bearing, which has fostered the myth that family and spiritual fabric renders patients emotionally strong. Hence, professional psychosocial care is perceived to be redundant. The effort of this paper is to establish the relevance of psycho-oncology through scientific evidence.

METHODS: To establish the case in point, data from three independent studies were collated. Prevalence of distress in cancer patients: A nationwide pilot study. A mixed cohort of adult patients ($N=2594$, 20 cancer centres in India) were screened using Distress Thermometer (DT). A nationwide-web based survey of oncologists in India: Oncologists ($N=200$) responded to a questionnaire. Psycho-oncology feedback form: Patients ($N=500$) referred to the service responded to a feedback questionnaire. **RESULTS:** Patients reported distress of varying magnitude. DT ratings of <5 (mild distress) in 52.1% and >5 (moderate to severe) in 40% of the sample. Oncologists in the survey (100%) reported distress in their patients, 75% reported absence of psycho-oncology service, and 100% of them recommended integrating psycho-oncology in cancer care. Patients' feedback revealed the benefits of psycho-oncology and recommended integrating it into cancer care (100%). **CONCLUSIONS:** The study dispels the myth that cancer patients in India do not experience distress and provides a strong rationale for establishing psycho-oncology in India.

Research Implications: Develop culture specific tools, intervention, and models for psychosocial care. National guidelines for psychosocial care.

Practice Implications: Evidence will sensitize stakeholders to address distress. Distress screening and professional psychosocial care must be provided.

Acknowledgement of Funding: None.

L-3

Multicultural validation of the Pediatric Parenting Stress Inventory (PPSI) in childhood cancer

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BACKGROUND/PURPOSE: The parent's pivotal role in determining child-patient and family adjustment to the

crisis of the cancer diagnosis and treatment, as well as their central role in decision making and ensuring medical compliance, necessitates valid and clinically relevant measures of parenting stress. This presentation reports on the development and validation of such an instrument across three cultures and language groups. **METHODS:** Items comprising the PPSI originated from a list of parenting stressors developed by pediatric oncology and psychosocial professionals based on relevant literature and clinical experience. Piloting and refinement yielded a 35-item scale which was administered to 591 English-speaking and 201 Spanish-speaking mothers of children with newly diagnosed cancer in the USA and 60 Hebrew-speaking mothers and fathers in Israel. Factor structure, reliability, and construct validity were assessed. **RESULTS:** Factor analysis yielded four stable parenting stress factors across samples: (1) Managing the Ill Child's Needs; (2) Managing Emotional and Physical Problems; (3) Managing Finances; and (4) Managing Family Life. Internal reliability (Cronbach's alpha) for the total score was .94 for the US samples and .96 for the Israeli sample. The PPSI total score was significantly correlated with the Profile of Mood States ($r = .71$ for US samples; $r = .76$ for Israeli sample), the Impact of Events Scale ($r = .58$ for US samples; $r = .70$ for Israel sample), and the Beck Depression Inventory ($r = .67$ for US samples). **CONCLUSIONS:** The PPSI is a brief, valid, and reliable measure of parenting stress.

Research Implications: It may also serve as a treatment outcome measure for intervention research with parents and caregivers.

Practice Implications: Clinically, the PPSI can be used to screen, identify, and guide intervention with parents of children with cancer.

Acknowledgement of Funding: None.

L-4

The distress screening program lowers distress, depression, and anxiety in Brazilian oncology patients during primary treatment

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BACKGROUND/PURPOSE: Implementing distress screening programs is a national and international consensus. Based on standards and guidelines, a cancer center in Brazil developed a Distress Screening Program (DS) in 2007. In 2009, multidisciplinary discussions regarding patients in treatment [Psychosocial Care Meetings (PCM)] were implemented. We evaluated the impact of the addition

of PCM within the distress screening program. **METHODS:** Mixed effects modeling compared data from patients ($N = 642$) who received DS only ($n = 200$, 2007–2009), or DS plus PCM ($n = 442$, 2009–2014). Patients were assessed three times during chemotherapy: first day of infusion and two follow-ups at mid-point and end of treatment. Measures included distress (Distress Thermometer), and total depression and anxiety (HADS). For patients receiving DS plus PCM, the first PCM occurred prior to initiating chemotherapy. **RESULTS:** The average patient was female (67.4%), 55.4 years old ($SD = 15.5$), and college educated (60.5%). The majority had breast (26.5%) and gastrointestinal cancers (24%). Patients receiving DS plus PCM showed significantly lower distress and total depression/anxiety upon chemotherapy initiation relative to patients receiving DS only ($ps < .001$). While both groups reported significantly lowered distress and total depression/anxiety scores across time ($ps < .003$), patients receiving DS plus PCM maintained lower distress and total depression/anxiety at all assessments. **CONCLUSIONS:** Findings indicated the benefit of DS, highlighting the positive impact of the addition of PCM—and the importance of matching resources to patient needs. DS and added PCM appear to enhance the quality of cancer care, improving emotional outcomes. Results provide initial support for this international statement to be sanctioned in Brazil.

Research Implications: As in Brazil, no specific guidelines for distress management in cancer care have been formulated; the present finding demonstrated the feasibility of implantation of distress screening routine in Brazilian institutions. Further research should be conducted in different institutions around Brazil to check the generalizability of this result.

Practice Implications: The implementation of this program favored the integration between the psychology routine and the physician service, assisting the health team to develop increased comprehension about psychosocial issues faced by patients. The assessment routine enabled patients to more easily recognize and report emergence of problems. It was possible to transform internationally statements in significant actions that improve the assistance and the clinical practice.

Acknowledgement of Funding: None.

M-1

Employment transitions among cancer survivors: a longitudinal qualitative exploration of the meaning and performance of work following cancer treatment

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BACKGROUND/PURPOSE: There are an increasing number of cancer survivors for whom returning or remaining in work is a realistic and desirable outcome. However, there is little research to date focused on understanding the meaning of work and examining the return to work of a range of cancer types. The aim of this study was to conduct an in-depth exploration of breast, head and neck, prostate and gynaecological cancer survivors' experience of work over a 1-year period post-treatment. **METHODS:** A total of 119 breast, head and neck, prostate and gynaecological cancer survivors completed a semi-structured interview following completion of their treatment and then also completed a follow-up interview 12 months later. In total, 238 interviews were recorded and transcribed verbatim. Framework analysis of the transcripts was undertaken within and across cancer types. **RESULTS:** Four superordinate themes were identified, and these were labelled 'Work and self-identity', 'Work-related implications of treatment side effects', 'Disclosure of cancer' and 'Readjustment'. Overall, there were few changes in working patterns between the two interview points with the majority returning to the same role. Although a desire to make work-related changes was expressed at baseline, few had initiated such changes 1-year post-treatment. **CONCLUSIONS:** Employees may experience difficulties due to residual symptoms, such as continuing fatigue, or as a result of unrealistic expectations about returning to full employment soon after treatment has completed. The results highlight the need for an intervention to support cancer survivors to plan their return to work and to cope with long-term residual symptoms and manage expectations about returning to work.

Research Implications: Although cancer survivors share common employment-related concerns, the impact of different cancer types and of the associated treatments can lead to specific multiple concerns about their own job performance and social interactions within the workplace.

Practice Implications: The influence of cancer on survivors' employment was variable, and recognition of these differences is required. In addition, some survivors of cancer may require specific interventions aimed at helping them to manage ongoing side effects and the disclosure of their illness, particularly within a work environment.

Acknowledgement of Funding: This research was funded by a project grant from Cancer Research United Kingdom (C8303/A6130).

M-2

Work functioning in cancer patients: the role of social support at home and at work

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BACKGROUND/PURPOSE: Examining work functioning in cancer patients who returned to work and investigating the role of social support at home and at work. **METHODS:** A cross-sectional survey was conducted among employees who returned to work after cancer diagnosis. Work functioning was assessed with the 27-item Work Role Functioning Questionnaire 2.0 (WRFQ, range 0–100). WRFQ scores >90 were considered 'successful work functioning'. Social support at home was assessed with the Social Support List—Discrepancies; social support at work was measured with the Copenhagen Psychosocial Questionnaire. **RESULTS:** 252 working cancer patients (60% women) with a mean age of 50.8 (SD=7.9) years participated. Most participants were diagnosed with breast cancer (44%), followed by colon cancer (13%). Sixty percent of the participants had nonmanual work, 11% manual, and 29% mixed work. The majority (71%) reported WRFQ scores <90. Non-manual workers reported the lowest scores on the WRFQ (75.3) compared to manual workers (81.3) and workers with mixed work (79.8). Cancer patients who perceived low social support (at home and/or at work) reported lower WRFQ scores compared to those who perceived high social support (respectively WRFQ 'home' 70.1 vs. 80.7; 'work' 73.5 vs. 81.2, both ≤ 0.001). **CONCLUSIONS:** Twenty-nine percent of cancer patients reported successful work functioning. While high support was associated with better work functioning, working cancer patients did not attain a threshold level of 90 for successful work functioning. Even in high social support groups, cancer patients are reporting being unable to meet the demands of their job at least 1 day a week.

Research Implications: Research is needed to understand why it is that a small number of cancer patients had successful work functioning while the majority had not. Moreover, research should explore why even in high social support groups, cancer patients are unable to meet the demands of their job at least 1 day a week.

Practice Implications: It is important to emphasize the relevance of social support for work functioning to cancer patients and their family, caregivers, employers, and colleagues.

Acknowledgement of Funding: Dutch Cancer Society (2011-5266).

M-3

Changes in working status and quality of life among breast cancer survivors: a prospective cohort study

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BACKGROUND/PURPOSE: Advances in detecting and managing breast cancer led to the treatment of women who are more likely to be of working age. However, breast cancer survivors are less likely to be employed (maintaining work, returning to work, and get a job) compared to healthy women of similar age resulting in financial difficulties and poor quality of life. We aim to evaluate longitudinal changes of working status among women with breast cancer and its impact on quality of life. **METHODS:** This is a cohort study with nonmetastatic breast cancer patients ($N=422$) from two cancer hospitals in Seoul, Korea. Patients were recruited before surgery and followed 2 weeks, 3, 6, 12, 24, and 36 months after surgery. Of total, 45% of women ($n=190$) were working at baseline, and 88.4% of them reported about working status at 12, 24, and 36 months after surgery. Quality of life was assessed using EORTC-QLQ-C30 and QLQ-BR23. Mixed effect analysis was performed to examine changes overtime using STATA 12. **RESULTS:** Only 30.4% of women kept working at 3 years after surgery. While women working (WW) and not working (WNW) reported similar patterns of poor functions and low quality of life until 6 months after surgery, WW showed improvement in role and social function, body image, and future perspective compared to WNW ($p < 0.05$). In contrast, WNW kept reporting poorer physical function and more financial difficulties from 6 months after surgery than WW ($p < 0.05$). Specifically, WNW reported increased fatigue and sleep disturbance over time, and it was statistically different from WW. **CONCLUSIONS:** Only one-third of breast cancer patients kept working 3 year after surgery.

Research Implications: Working patients reported less symptom, better functioning, and less financial difficulties resulting in better quality of life during survivorship.

Practice Implications: It is necessary to help breast cancer patients to maintain their work during and after treatment as well as providing psychosocial support.

Acknowledgement of Funding: The research was accomplished by support from the AMOREPACIFIC and Korea Breast Cancer Foundation.

M-4

Lost in transition: impact of living environment on surveillance behaviors and psychological health during survivorship

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BACKGROUND/PURPOSE: Once treatment is over, patients often experience abandoned feelings as they are away from health professionals and hospitals. During survivorship, living environment such as transportation, finance, access to information, and social services might affect patients' surveillance behavior and mental health. **METHODS:** From August to October 2013, a cross-sectional survey was conducted with breast cancer survivors at two cancer hospitals in Seoul, Korea. Patients were eligible for this study if they were at least 1 year survivors, no sign of recurrence, completed active treatment, and under regular surveillance. Living environment (LE) was assessed WHO-QOL BREF. Anxiety and depression using HADS, fear of cancer recurrence, and surveillance behaviors were also assessed. Uni- and multi-variable analysis was performed to find association between living environment and behavior and psychological health using STATA 13. **RESULTS:** A total of 842 breast cancer survivors participated in the study. Survivors who reported better LE (BE) were more likely to live in the metropolitan ($p < 0.01$), had college education ($p < 0.01$), and had higher income ($p < 0.01$) compared to the survivors who reported poorer LE (PE). While both groups were willing to have active surveillance exams ($p=0.846$), PE were less likely to received surveillance exams ($p=0.03$) than BE. PE were more likely to be disturbed when they were waiting for surveillance exam and worried more about the cost of the exam than BE. In multivariable analysis, PE had significantly higher fear of recurrence ($p < 0.01$) and report depression compared to BE ($p < 0.01$). **CONCLUSIONS:** Survivors living in a poor environment experience more difficulties with surveillance resulting in higher anxiety, fear of recurrence, and depression. Appropriate supports and resources such as transportation, finances, and social services are necessary for assuring survivors' long-term quality of life.

Research Implications: In the expert panel reviewed, exam should be performed every 3 to 6 months for the first 3 years, every 6 to 12 months for years 4 and 5, and annually thereafter. However, patient with low living environment has experienced burden due to routine exam and have negative emotional status.

Practice Implications: After treatment, completion typically involved loss of the safety net of active medical treatment, the living environment included financial, health, and social services, there were opportunities to

acquire knowledge, and transportation were important to cancer survivor care. Therefore, before treatment, the patients' living environment should be assessed, and it can be used to measure the impact of policies and programs on eliminating these health disparities.

Acknowledgement of Funding: None.

N-1

Exploring the individual patterns of spiritual well-being in relation to quality of life outcomes in people newly diagnosed with advanced cancer: a cluster analysis

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BACKGROUND/PURPOSE: There is general support for the correlation between spiritual well-being (SpWB) and quality of life (QOL) outcomes. The patterns of SpWB may vary substantially among individuals. This study aims to identify subgroups of patients with cancer who vary along SpWB and QOL outcomes. **METHODS:** Presented here is a secondary data analysis of a cluster randomized clinical trial with patients newly diagnosed with advanced cancer undergoing treatment. The present sample represents subjects assigned to the control group, as assessed at two occasions. SpWB was measured by the 12-item Functional Assessment of Chronic Illness Therapy—Spiritual Well-being Scale (FACIT-Sp-12). Cluster analysis (utilizing squared Euclidean distance and K-means) was performed at the first occasion, and FACIT-Sp-12 items were used to generate clusters. Clusters were compared on self-rated health, depressive symptoms, dimensions of SpWB and QOL, and demographic characteristics. **RESULTS:** Of 52 patients, 89% are Caucasian with a mean age of 58 years. Four clusters were identified with varied patterns of Faith, Peace, and, to lesser extent, Meaning, which persisted 8 weeks later at the second occasion. Clusters differed in QOL and depressive symptoms at the first occasion and revealed distinct changes of QOL at the second occasion. Clusters were not significantly different in self-rated health. **CONCLUSIONS:** Results underline the salience of SpWB among people newly diagnosed with advanced cancer. The individual difference warrants further investigation, including identification of groups mostly likely to benefit from interventions and development of psychosocial interventions tailored to the needs of high-risk individuals.

Research Implications: Results contribute to our understanding of the varied patterns of SpWB that are linked to distinct QOL outcomes. Future longitudinal studies with large sample size need to verify the current findings. The potential interactions among Faith, Meaning, and Peace in relation to QOL outcomes among this population warrant focused investigation.

Practice Implications: The individual difference in response to a diagnosis of an advanced cancer warrants clinical attention. Identification of potential subgroups at risk of poor outcomes and development of psychosocial interventions tailored to the needs of high-risk individuals among people newly diagnosed with advanced cancer are highlighted.

Acknowledgement of Funding: Parent study was funded by NIH, NINR, 1R01NR011872, R. McCorkle (PI).

N-2

Psychological distress and locally advanced prostate cancer

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BACKGROUND/PURPOSE: Approximately 1/5 of men who are diagnosed with prostate cancer have advanced illness. However, little research has examined the longer-term quality of life and levels of distress of these men.

Our study aimed to address this and describe quality of life and psychological outcomes from diagnosis of locally advanced prostate cancer to 36 months follow-up.

METHODS: Eighty-one men who were newly diagnosed with self-reported locally advanced or advanced prostate cancer in Queensland were recruited as part of a larger longitudinal study. Participants completed questionnaires at baseline, 2, 6, 12, 24 and 36 months follow-up. **RESULTS:** At diagnosis, participants were 68.3 years of age (SD=7.9; range 49.7–87.1). Adjuvant androgen deprivation therapy was the most common form of treatment received (95.1%) followed by external beam radiation (59.3%) and brachytherapy (19.7%). For quality of life, SF-36 and satisfaction with life scale scores decreased over time. Decisional Conflict scores were significantly higher at baseline compared to subsequent time points, and Distress Thermometer ratings were also higher at baseline than at 12 months follow-up. However, regret related to treatment choice increased over time. A large proportion of participant distress continued at 36 months for the Decisional Conflict Scale (44%) and Distress Thermometer (39%), respectively, according to case rules.

CONCLUSIONS: For these participants, quality of life decreased over time, and decisional conflict about treatment and psychological distress persisted across the time points. Research implications relate to psychosocial service delivery and treatment decision support for men who present with advanced disease at diagnosis and beyond, which is an understudied area.

Research Implications: This research contributes to a gap in the literature on understanding the pattern of long-term psychological distress and quality of life of men diagnosed with locally advanced and advanced prostate cancer.

Practice Implications: This research will help to inform and target psychosocial service delivery and treatment decision support for men diagnosed with advanced prostate cancer illness.

Acknowledgement of Funding: This project was funded by the National Health and Medical Research Council (NHMRC; ID 442301) and Cancer Council Queensland.

N-3

The art of adjustment: assessment of personal goals after cancer diagnosis

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BACKGROUND/PURPOSE: The successful pursuit of personal goals is important for people's well-being. Cancer can lead to goals becoming disturbed, negatively affecting well-being. The objective of this study is to examine the role of goal adjustment in the relation between goal disturbance and well-being. **METHODS:** Recently diagnosed colorectal cancer patients were assessed at 1, 7, and 18 months post-diagnosis. At all assessments, goals were freely elicited and scored on goal characteristics (importance, attainability, and effort by patients, life domain, and level of abstraction by two authors). Eight goal adjustment strategies, identified in the literature (e.g. *Continue to pursue disturbed goals*), were defined based on these characteristics. We investigated their use during two periods (i.e. 1–6 and 7–18 months) and used hierarchical regression analyses to analyze the data. Goal disturbance was measured as the mean level of disturbance of the reported goals. Well-being was measured using subscales from the EORTC. **RESULTS:** Colorectal cancer patients ($n=186$, 39.2% female, mean age 64.2 years) used six of the eight

strategies. Goal disturbance predicted well-being up to 18 months after diagnosis ($\beta=-.18$) and the number of strategies buffered the adverse effects of goal disturbance on well-being during the treatment period ($\beta=.15$) but not during the follow-up period. **CONCLUSIONS:** This study applied a novel approach to measure goal adjustment strategies. The number of goal adjustment strategies seemed to be beneficial in the treatment period.

Research Implications: It may be beneficial to reduce the impact of goal disturbance by offering help in practicing the use of goal adjustment strategies soon after diagnosis.

Practice Implications: The results offer new insight for the development of psychological interventions during the treatment period.

Acknowledgement of Funding: The study was funded by the Dutch Cancer Society (RUG 2009-4461).

N-4

Analysis of pain characteristics and prognostic factors for pain management in 152 lung cancer patients with moderate or severe chronic pain

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BACKGROUND/PURPOSE: Of all the cancers associated with pain, lung cancer is one of the most common, but little is known of the pain characteristics or prognostic factors for pain control in lung cancer patients. The aims of this study were to analyze pain characteristics in lung cancer patients with moderate or severe chronic pain, and investigate the factors influencing the outcome of pain management, in order to provide guidance to clinicians for improving analgesia. **METHODS:** Data were derived from 152 lung cancer patients with moderate or severe chronic pain in China. Parameters investigated included host characteristics, disease factors, pain factors, and treatment factors. All patients were treated in accordance with the National Comprehensive Cancer Network (NCCN) cancer pain guidelines for adults. Pain characteristics, the effectiveness of pain control, and prognostic factors for pain management were analyzed. **RESULTS:** Of the entire patient sample, 72.4% had moderate pain, while 27.6% had severe pain. Neuropathic pain was apparent in 46.7% of patients, and 25.7% had frequent breakthrough pain (more than three times per day). High pain intensity was significantly associated with frequent breakthrough pain ($p<0.0001$). After analgesic treatment for 3 days, 81.6% of the patients achieved adequate pain control, and KPS improved significantly compared to prior treatment ($p<0.0001$). Statistical analysis showed that severe pain, frequent breakthrough pain, and the presence

of bone metastases were independent risk factors for poor pain control after analgesic treatment for 3 days ($p < 0.05$). Of the 83 patients who used strong opioids, those with severe pain, frequent breakthrough pain, or neuropathic pain needed more drugs to control their pain ($p < 0.05$). Opioids combined with NSAIDs resulted in significantly better pain control after 3 days of analgesic treatment than opioids not combined with NSAIDs ($p = 0.001$). **CONCLUSIONS:** High pain intensity was associated with frequent breakthrough pain in lung cancer patients. Severe pain, frequent breakthrough pain, having bone metastases, and neuropathic pain may be predictors of difficult to control cancer pain; thus, clinicians should pay particular attention to these parameters. Combining opioids with NSAIDs may result in more effective pain management than is achieved by opioids without NSAIDs.

Research Implications: Cancer pain treatment.

Practice Implications: To know how to treatment the pain of cancer patients.

Acknowledgement of Funding: This work is supported by the young professor training plan of Jilin University.

O-1

Evaluations of written self-administered psychosocial interventions to improve psychosocial and physical outcomes among adults with chronic health conditions: a meta-analysis

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BACKGROUND/PURPOSE: Psychosocial interventions can improve the quality of life (QOL) of individuals with a physical illness; however, given their cost, these are often not routinely part of supportive care. The aim of this meta-analysis was to assess the efficacy of self-administered, psychosocial interventions to improve outcomes among individuals with a physical illness (including individuals with cancer). **METHODS:** Studies comparing a self-administered intervention to a control

group were identified through electronic databases searching. Random effects meta-analyses were performed separately for the primary (anxiety and depression) and secondary (distress, QOL, self-efficacy, and coping) outcomes. **RESULTS:** 24 manuscripts were retained. The standard mean difference (SMD) was significant for anxiety (SMD = -0.13, 95% CI = -0.25 to -0.01), depression (SMD = -0.27, 95% CI = -0.38 to -0.16), distress (SMD = -0.20, 95% CI = -0.37 to -0.04), global (SMD = 0.25, 95% CI = 0.06 to 0.44) and disease-specific (SMD = -0.18, 95% CI = -0.31 to -0.05) QOL, and self-efficacy (SMD = 0.54, 95% CI = 0.34 to 0.73). Results were not significant for mental, physical, and social functioning and coping. Differential impact of self-administered versus guided interventions was noted for anxiety and QOL. **CONCLUSIONS:** Self-administered interventions seem most efficacious in reducing anxiety, depression, and distress and improving global and disease-specific QOL and self-efficacy.

Research Implications: Future studies need to compare the efficacy and cost-effectiveness of different levels of guidance directly, and the potential impact of tailoring these interventions to individuals' needs.

Practice Implications: Self-administered interventions are a potentially efficacious and cost-effective approach to address some of the most common supportive care needs of patients with cancer.

Acknowledgement of Funding: None.

O-2

One-year follow-up of the outcome of a home-based symptom management program for patients receiving adjuvant cancer therapy

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BACKGROUND/PURPOSE: Symptom and psychological distress can cause profound impact on quality of life of patients with cancer. This study was to examine the effect of a symptom management program on reducing symptom and psychological distress among patients with breast or colorectal cancer and receiving adjuvant chemotherapy and/or radiotherapy. **METHODS:** 154 subjects (mean age: 54.5+9.5 years) were randomized either to an experimental ($n = 78$) or a control ($n = 76$) group. The experimental group received a home-based symptom management program for 20 weeks and standard care. The control group received standard care. Memorial Symptom Assessment Scale, Hospital and Depression Scale (HADS) and EORTC QLQ-C30 were completed at baseline (before chemotherapy, time 1), and at 6 (time

2), 12 (time 3), 24 (time 4) and 52 weeks (time 5) from time 1. **RESULTS:** Groups were equivalent at baseline. The mean scores for Global Distress Index ($F=4.292$, $p=0.04$) and HADS-Depression ($F=4.258$, $p=0.04$) were significantly lower in experimental subjects across five time points compared with control subjects. As for QoL, the mean scores for physical ($F=6.725$, $p=0.01$), emotional ($F=6.689$, $p=0.01$) and cognitive functioning ($F=7.212$, $p=0.008$), and global QoL ($F=9.418$, $p=0.003$) were significant higher in experimental subjects across all study time points compared with control subjects. **CONCLUSIONS:** Improvements on symptom distress, depression and QoL following the provision of a home-based program to breast and colorectal patients receiving adjuvant cancer therapy were sustained.

Research Implications: This study would contribute to the emerging evidence on home-based approach for symptom management and supportive care. Future studies could examine the patient-reported and clinical outcomes in a comprehensive fashion manner.

Practice Implications: The results of this study would contribute to a possible strategy for addressing the symptom burden and improving quality of life for patients with breast or colorectal cancer during their first year of cancer diagnosis and receiving adjuvant chemotherapy and/or radiotherapy.

Acknowledgement of Funding: National University Singapore's Start-up Fund.

O-3

Delivering the Cancer and Aging: Reflections for Elders (CARE) psychosocial intervention through expressive writing: a pilot study

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BACKGROUND/PURPOSE: The presence of age-related problems, comorbid medical conditions, and symptom burden can emotionally overwhelm older adults with cancer. This pilot study will test a novel psychological intervention delivered through expressive writing to help geriatric cancer patients cope with aging and cancer. **METHODS:** This ongoing study seeks to test the 'Cancer and Aging: Reflections for Elders' (CARE) intervention which is based on developmental psychosocial tasks important for older adults. In the first phase of this study, recruitment for the CARE intervention ($n=38$) and the control group ($n=30$) was completed. In the second phase, we adapted the CARE intervention to be delivered through expressive writing. We are recruiting for the

expressive writing group with the goal of 30 subjects. Subjects receive five writing sessions conducted over the phone with a trained writing mentor. Eligible criteria include the following: older adults (>70 years); breast, prostate, lymphoma, or gynecological cancer; and score >4 on the Distress Thermometer. Subjects are assessed for at baseline, post-treatment, and 4m following baseline. **RESULTS:** We will explore differences in depressive symptoms, anxiety, coping, loneliness, and spirituality. Currently, seven subjects are active in the expressive writing intervention. At the time of the conference, we will report on approximately 30 subjects who completed the expressive writing intervention. These subjects will be matched on age and disease stage to the current control group ($n=30$). **CONCLUSIONS:** We hope that combining novel therapeutic theories with a writing intervention will help geriatric cancer patients cope with aging and cancer.

Research Implications: By testing interventions that focus on issues and themes specifically related to older adults, research can continue to improve the psychosocial care for older cancer patients.

Practice Implications: These results may highlight important themes which may help mental health professionals improve the clinical care for geriatric cancer patients.

Acknowledgement of Funding: Silbermann Foundation.

P-2

Successful development and implementation of the UC San Diego Moores Cancer Center Comprehensive Wellbeing Screening Program

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BACKGROUND/PURPOSE: By 2015, all Commission on Cancer (CoC) accredited institutions are required to phase in CoC 2012 Standard 3.2: Psychosocial Distress Screening. Additionally, Quality Oncology Practice Initiative (QOPI) Certified Practices are required to comply with QOPI Standard 11 (Section D: Assess and document psychosocial concerns and taking action when indicated). This presentation will review strategies to develop and implement the UCSD Moores Cancer Center Comprehensive Wellbeing Screening Tool (CWST). Lessons learned throughout the process will be highlighted along with practical considerations required to adopt and implement this tool at a large NCI-designated

Comprehensive Cancer Center. **METHODS:** A transdisciplinary committee developed and implemented the CWST 1–2 teams at a time over 10 months. Bilingual patient education materials relevant to well-being domains were selected. Steps were taken to include and train stakeholders from each team to ensure successful implementation. **RESULTS:** Between 7 July 2014 to 31 October 2014, 2032 patients completed the CWST. Feedback from patients and providers suggest the CWST is easy to complete and facilitates important conversations. The CWST demonstrates excellent internal reliability with little redundancy. Visit times increased by only 1–2 min. The presentation will report the most common well-being issues, common requests for education materials and the total number of patients requesting to speak with someone. **CONCLUSIONS:** Results suggest that the CWST is achieving the primary goal of screening for psychosocial distress and improving patient–provider interactions with little impact on clinic flow. Future directions include implementation of an electronic version of CWST and evaluation of impact on clinical outcomes.

Research Implications: This presentation will provide evidence on how an institution can successfully develop, implement and evaluate a psychosocial distress screening tool. It will include methods of collecting data to help inform whether the implementation of a tool is effective.

Practice Implications: This presentation will cover results of data collected from the CWST regarding cancer patients' report of well-being, total number of requests for specific patient education material and total number of requests to speak to someone if distressed.

Acknowledgement of Funding: None.

P-3

Use of the NCCN Distress Thermometer and Emotional Problem List in predicting psychiatric symptoms

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BACKGROUND/PURPOSE: The Distress Thermometer (DT) and Problem List are validated self-report measures to assess psychosocial distress in cancer patients. Interest is currently focused on utility of the DT to assess need for referral for additional mental health services. **METHODS:** Adult patients referred to the MD Anderson Psycho-Oncology Clinic were considered eligible. Primary assessment tools included the DT with the Emotional Problem List (EPL), Patient Health Questionnaire 9-item (PHQ-9), and Generalized Anxiety Disorder 7-item scale (GAD-7). **RESULTS:** Participants who provided informed consent and completed all questionnaires were

included ($N=500$). DT average total score was 5.5 ± 2.9 (mean \pm SD). Endorsement of EPL items predicted magnitude of GAD-7 and PHQ-9 total scores (all $ps < .0001$). Among patients who scored ≥ 4 on the DT ($N=363$), endorsement of EPL anxiety symptoms (Fears, Nervousness, and Worry) was associated with a linear increase in magnitude of GAD-7 scores (0/3; 5.4 ± 3.9 vs 3/3; 13.1 ± 4.9 , $p < .0001$). Similar linear increases were seen for the PHQ-9 with endorsement of EPL depressive symptoms (Depression, Sadness, and Loss of interest in usual activities) ($p < .0001$). **CONCLUSIONS:** In this large sample of referred cancer patients, we found high levels of concordance among the questionnaires. For patient's screening positive on the DT, the number of EPL endorsed items was a strong predictor of overall scores on the PHQ-9 and GAD-7.

Research Implications: This combination of EPL and DT would benefit from additional study in other practice settings.

Practice Implications: and shows promise in guiding triage to appropriate mental health resources.

Acknowledgement of Funding: This work was supported by the Hackett Family.

P-4

Screening for distress and services needs in patients beginning radiation therapy

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BACKGROUND/PURPOSE: The abstract reports findings from a 15-month population study ($N=815$) of patient self-reported distress and services needs of patients being simulated to begin radiation therapy at a US academic medical cancer center. Patients being simulated were asked to complete 29 self-report items in multiple psychosocial/symptom domains using an iPad-presented screening software system. Each item measured distress and asked whether the patient desired staff member follow-up. Each patient's screening responses were reviewed by social work, dietitian, or spiritual care staff members, usually within 2 business days. Follow-up phone calls were made to patients, with further services offered based on phone call outcome. Results indicated a much higher level of distress and desire for supportive care services team care than had been anticipated. Even this short follow-up delay found that a significant percentage of patients no longer desired the services their responses had indicated. The timing of screening in this population and the timing of following up to patients' responses are highly important variables concerning the value of distress screening. Ideally, self-report screening

responses would be reviewed by staff with the patient during that patient visit, and the multidisciplinary follow-up care plan also created. **METHODS:** All patients being simulated prior to begin radiation therapy (RT) at the Cedars-Sinai Medical Center (Samuel Oschin Cancer Center) in Los Angeles CA were asked to participate. About 95% of patients agreed to participate. About 96% of those who agreed fully completed the 29-item self-report services needs questionnaire on the iPad (90% overall completion rate). The study population was highly representative of the Samuel Oschin Cancer Center and Radiation Therapy Department study population from the standpoints of gender, marital status, ethnicity, and religious affiliation. About 80% of all RT treatment plans are for definitive and 20% for palliative radiotherapy. The RT Department treats the full range of solid tumors and hematologic malignancies.

The distress screening software was licensed by Cedars-Sinai Medical Center from the City of Hope (SupportScreen-TM). The CSMC name for the application is Patient and Family Supportive Care Planner (PFSCP). The items were chosen by the project work group to reflect the findings from the distress screening literature as well as the actual range of services offered by the Cancer Center's Oncology Supportive Care Services (OSCS) multidisciplinary team. 96% of those who began the screening completed the electronic questionnaire (English language only).

The patient-completed electronic questionnaire was automatically e-mailed to the screening follow-up staff, which included social worker, dietitian, and spiritual care staff members. Items were deemed to require staff follow-up if the patient indicated at least a moderate level of distress and/or if they indicated the need to talk with a staff member regarding that item.

The screening staff followed up with the patients, typically by phone, within usually 2 business days. Based on the questionnaire responses and phone follow-up, the patient's primary oncologist physician/nurse team and the other members of the OSCS team were alerted to needed clinical care interventions.

Monthly cumulative reports were generated. Social work staff tracked the outcomes of phone follow-up with patients who had completed the questionnaire.

RESULTS: Study dates: November 2013–January 2015. Acceptance rate = 95%. Completion rate of acceptors = 96%.

SOCIODEMOGRAPHIC FINDINGS: Female = 60%, Male = 40%; Marital status: *M* = 56%, Widowed/Divorced = 19%, Other = 25%; AGE = mean 63 years (range 16–96); **ETHNICITY:** White = 80%, Black = 8%, Asian = 8%, Other = 4%; **RELIGION:** Jewish = 26%, Catholic = 20%, Christian/Protestant = 19%, None/Other = 35%.

ITEMS BY DISCIPLINE/PROVIDER FOLLOW-UP CATEGORY (distress at least moderate on the item):

MD ITEMS (7 items): Highest 4—Fatigue, side effects of treatments, pain, and trouble sleeping (all 25–30%).

SOCIAL WORK ITEMS (16 items): Highest 5—Anxious/distressed/fearful, finances, stresses on spouse/partner or family, worry about medical treatments, and concerns about memory and concentration (all 25–17%).

DIETITIAN ITEMS (2 items): Concerns weight gain or loss (18.4%), and eating/GI symptoms (16.7%).

SPIRITUAL CARE ITEMS (4 items): Highest 2—Finding meaning or purpose (4.5%) and feeling guilt (3.5%).

Overall need for follow-up by care provider/discipline based on criteria of at least moderate distress and desire to speak with a staff member on at least one item by item groups: MD/RN = 68%. Social Worker = 89%, Dietitian = 39%, and Spiritual Care = 13.5%.

FOLLOW UP: Given the study process, only about 40% of those patients followed up within usually 2 business days were able to be reached by phone and in fact desired further follow-up.

CONCLUSIONS: (1) Academic medical cancer center patients being simulated to begin radiation therapy have a much higher level of self-reported distress and desire a much broader range of services from oncologist physicians and oncology supportive care services staff than was anticipated based on previous clinical experience. For our service, this meant we need to allocate a higher level of staff member resources to meet this need.

(2) The timing of performing the screening in RT patients is very important. Because the simulation phase is so stressful to patients, we will shortly be changing the timing of our use of Patient and Family Supportive Care Planner in this population to week 3 of actual treatment. We believe this will provide more reliable information about needs of this population as they are acclimated to RT, and some RT toxicities begin to emerge.

(3) The timing and process of follow-up to patient's completion of self-report electronic questionnaires is also highly important. In the ideal world, the patient's responses would be reviewed with at least one OSCS staff member during the same visit. This would likely improve the value of the screening for patients and the productivity of the screening for OSCS staff.

Research Implications: (1) This adds to the body of knowledge about the levels of distress and services desires of patients beginning RT in a US academic medical cancer center. Use of electronic self-report screening software is a critically valuable tool in performing distress screening in large cancer patient populations.

(2) Further analysis of services needs and desires by sociodemographic variables, by disease diagnosis and stage, and RT treatment intent (definitive vs. palliative), would help provide more focused profiles of RT patient services needs which can lead to more refined and

effective/efficient delivery of supportive care services to this population.

Practice Implications: The primary practice implications are as follows:

(1) Cancer patients being simulated for RT have a high level of services needs and desires which need to be addressed by their oncologist MDs, social worker, and dietitian staff. While the proportion of patients indicating need/desire for spiritual care services is smaller, the needs are clinically very important. We are increasing social worker and dietitian staffing to meet the needs identified in this study.

(2) The timing of analysis of patient self-reports and follow-up with the patients is very important to optimize value. Ideally, this review and analysis would occur on the same visit and not even a few days later.

(3) The timing of when RT patients are asked to complete electronic self-report questionnaires is also important. We are moving to perform this at RT week 3, which we believe will be better for patients and supportive care service delivery.

Acknowledgement of Funding: None.

Q-1

Upbringing, adult attachment, and romantic relationships in long-term childhood cancer survivors and healthy controls

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BACKGROUND/PURPOSE: Childhood cancer is stressful and may affect family members and their relationships. A recent review noted that parents of children with cancer are more likely to be overprotective. They may also be less responsive toward their children due to increased worry. This altered parenting can influence survivors throughout life and possibly their relationships with others. Therefore, we examined the potential negative effects of childhood cancer on parenting, adult attachment, and satisfaction with romantic relationships from an adult survivor's perspective. **METHODS:** Eighty-seven survivors and 87 matched controls (aged 27 years, range: 20–40) completed standardized questionnaires online to assess memories of upbringing (warmth, rejection, and overprotection), adult attachment (avoidance and anxiety), and satisfaction with current relationship status (i.e. being partnered or single). Survivors were 16 years (6–33 years) post-diagnosis of leukemia ($n=38$), lymphoma ($n=27$), or other solid tumors ($n=22$). **RESULTS:** Adult attachment

did not differ between survivors and controls, but memories of upbringing did. Survivors experienced mothers and fathers as emotionally warmer, and mothers as less rejecting than controls ($d=.35-.68$). However, these differences were only modestly related to outcomes in adulthood. Parental warmth and lower attachment insecurity mediated the relationship between having had cancer and greater relationship status satisfaction in both single and partnered participants. **CONCLUSIONS:** Childhood cancer had a positive impact on parenting, which had small positive implications for adult attachment and romantic relationships. Overall, our findings were unexpected, but they offer novel insights informing future prospective studies, which are needed to more thoroughly understand long-term psychosocial effects of childhood cancer.

Research Implications: We offer insights into understudied themes in childhood cancer survivorship, emphasizing a life-span perspective on how childhood experiences influence adult life. Future longitudinal studies are required in order to confirm proposed associations and identify underlying mechanisms.

Practice Implications: Providers in clinical practice should emphasize family functioning and support warm interactions between parents and children, as they are important to the development of the child and contribute to long-term well-being in survivors.

Acknowledgement of Funding: This project was funded by the Dutch Cancer Society (RUG2009-4442).

Q-2

Improving the quality of psychosocial care for young adults in medical oncology

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BACKGROUND/PURPOSE: Young adults (YAs) with cancer (ages 18–35 years) have a high burden of psychosocial needs. While national standards recommend comprehensive psychosocial assessment and follow-up care for this population, there are variability and a lack of consistency in social work documentation of these practices at this academic medical center. Process improvement initiatives in medical settings have worked to improve quality and consistency and to reduce costs, and promise similar benefits for mental health care. **METHODS:** Following process improvement methodology, an interdisciplinary team assessed current social work processes for documentation of YA-specific psychosocial concerns. Fourteen domains of YA-specific care were identified based on a comprehensive literature review. Baseline data were collected from chart reviews

on the documentation of these domains. The team developed a collaborative patient/clinician tool to assist with improving care and documentation, implemented small tests of change, and incorporated feedback to improve the consistency of social work documentation. A graphic, developmentally targeted tool called 'Snapshot' was created to improve psychosocial care for YAs. **RESULTS:** Using the tools created, there was a 27% improvement in documentation with 71% of YA charts containing at least 10/14 domains specific to YA care. Of the charts reviewed post-intervention, 29% contained all 14 domains compared with 0 at baseline. Qualitative feedback regarding the tool was positive. **CONCLUSIONS:** Process improvement methods offer a promising interdisciplinary approach to improving quality and consistency of psychosocial care for YAs with cancer to align with national recommendations. The tool encourages collaboration between clinicians and YA patients in addressing common psychosocial concerns.

Research Implications: Quality improvement methodology uses a systematic approach and data to make improvements over time in healthcare delivery. Rather than translating research findings into clinical care, quality improvement focuses on small tests of change in the context of clinical practice to ensure that interventions are operationally sustainable and useful for the specific targeted population and clinical practice.

Practice Implications: Ongoing work will use an interdisciplinary process improvement approach to integrate recommended standards of psychosocial care into clinical practice. Future directions for clinical practice include ongoing engagement of clinicians and increased use of the tools with YA patients. The project team plans to identify early adopters of the tool to further disseminate the tool throughout social work practice at the institute.

Acknowledgement of Funding: Philanthropic and foundation funding.

Q-3

Long-term adolescent and young adult lymphoma survivors score clinically relevant lower on social, role and cognitive quality of life domains later in life

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BACKGROUND/PURPOSE: The combination of wanting to reach developmental milestones and facing cancer may pose adolescents and young adults (AYAs) at risk for impaired quality of life (QoL) later in life. The purpose of this study was to examine the QoL of AYA lymphoma survivors 6 months to 10 years after treatment completion. **METHODS:** This study is part of a longitudinal,

population-based survey among lymphoma patients diagnosed between 1999 and 2009 and who were aged 18–35 years at time of diagnosis. We used the EORTC QLQ-C30 to measure QoL. The patient sample was compared to a sex- and age-matched normative population. **RESULTS:** Compared to the normative population ($N=50$), significantly poorer functioning ($p < .05$) was observed for 148 AYA lymphoma survivors on role (90.1 vs. 83.3), cognitive (91.5 vs. 83.6) and social functioning (93.9 vs. 84.2). These results were of small to medium clinical importance. No differences were found on physical and emotional functioning, the global quality of life and symptom scales. AYA lymphoma survivors reported significantly more financial difficulties (3.4 vs. 10.9) compared to the normative population. **CONCLUSIONS:** These results clearly indicate that AYA cancer survivors have a reduced functioning on some important QoL domains in comparison with a normative population even long after the treatment of their disease is completed. Healthcare providers should provide care that takes into account the developmental phase of AYA cancer patients at time of diagnosis to prevent problems later in life.

Research Implications: The results show that more research is needed into the factors that cause the decrements in QoL of AYAs later in life.

Practice Implications: Healthcare providers should be aware that AYA cancer patients are a vulnerable group with specific healthcare needs that need to be met to prevent problems later in life.

Acknowledgement of Funding: None.

Q-4

Autobiographical disruption and mechanisms of distress among young adults with cancer: implications for tailoring evidence-based support

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BACKGROUND/PURPOSE: Evidence-based psychological therapies have proven efficacy among cancer patients, but mechanisms of efficacy and action are less clear among adolescents and young adults (AYAs). The 'biographical disruption' AYAs report is a unique consideration during this developmental period. Outside of psycho-oncology, autobiographical thinking processes, such as how individuals remember significant life events and imagine their futures, have been strongly linked to psychological adjustment. This study examined (1) whether AYAs with and without cancer histories show

different autobiographical thinking processes and (2) the relationship between these processes and AYAs' distress. **METHODS:** Fifty AYAs with cancer (AYAC) and 62 healthy controls (mean age=23.0 years, 49.4% females) completed structured interviews involving the validated *Life Narrative Task* and *Future Imaginings Task*, as well as validated self-report measures of distress (e.g., *Depression, Anxiety, and Stress Scales—Short Form*). Interviews were coded for content by two raters. **RESULTS:** Compared to controls, AYACs showed more negative ($p=0.026$) and illness-focused ($p<0.001$) life narratives, and more illness-focused ($p<0.001$) future imaginings. AYACs' future imaginings were also less specific in detail ($p<0.001$), a risk factor for poor adjustment. Despite these differences, AYAs with and without cancer tended to imagine similar future milestones. Depression/anxiety symptoms were the sole predictor of having more health/illness-focused life narratives ($p=0.017$) and future imaginings ($p=0.034$). **CONCLUSIONS:** AYACs showed qualitatively distinct autobiographical thinking processes relative to controls, and this was related to distress. Existing evidence-based interventions may be tailored based on these results, to better assist AYAs to integrate their cancer experiences into their life narrative in the aftermath of cancer.

Research Implications: As increasing empirical attention is paid to examine the feasibility and efficacy of psychological interventions among adolescents and young adults with cancer, it is also critical that research uncovers factors that may account for distress, adjustment, and responses to such interventions. This research extends current literature in AYA psycho-oncology by applying validated interview procedures drawn from the wider clinical psychology literature to examine autobiographical thinking processes related to memory and future thinking. Linking our understanding of AYA distress and adjustment to the broader clinical psychology literature is critical to building a platform of research that is both theoretically oriented and methodologically rigorous. To our knowledge, this is the first study that has examined not only the content but also the quality of AYAs' autobiographical memories and future thinking (i.e., not only *what* they remember/imagine, but *how* they remember/imagine it).

Practice Implications: There is a growing body of research within the broader clinical psychology literature to indicate that how individuals remember past significant life events, and imagine their personal futures, is critical to their distress and ongoing adjustment. The present findings highlight how these same processes may also function to promote or hinder AYA adjustment in the aftermath of cancer. This has direct relevance to clinicians, who may be able to tailor current evidence-based therapies to particularly assist AYAs to develop adaptive appraisals around their cancer experiences and to

reconcile these life events with a cohesive, ongoing life narrative in order to better adjust into survivorship. This presentation will outline several specific implications of the present results for the tailoring of evidence-based psychological interventions.

Acknowledgement of Funding: National Health and Medical Research Council of Australia (APP1067501), Cancer Institute of NSW (ID: 11/ECF/3-43), Cancer Australia and Beyond Blue (APP1022868), and Kids with Cancer Foundation.

R-1

Cancer disclosure in Romania: trends and risks—translation 'from power to person'

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BACKGROUND/PURPOSE: Cancer disclosure is considered a highly stressful event but nondisclosure even more. In Romania, patients who are not informed about their cancer diagnosis are significantly more depressed, are hopeless and with lower levels of problem-focused coping compared to patients who are informed. The main objective of this study is to report on trends of cancer diagnosis nondisclosure in Romania, from 2007 to 2014, and to identify groups vulnerable to this risk. **METHODS:** The APSCO (Assessment of Psycho-Social and Communication Needs in Oncology) study initiated in 2001 follows the repeated cross-sectional design, while the proportional quota sampling method was applied in the four most important Romanian cancer centres to produce a nationally representative pool of oncology patients in terms of gender and ethnic affiliation. A mixed and various sample ($N=1220$) of 800 oncology patients was screened in 2014, and 420 in 2007. **RESULTS:** Our previous results from 2007 showed that 16.9% of cancer patients in Romania were not aware of their cancer diagnosis. New data indicate that prevalence of cancer diagnosis nondisclosure halved (8.0%) in Romania from 2007 to 2014. Even if cancer diagnosis nondisclosure percentages have lowered in the last years in the Romanian cancer population, certain groups of cancer patients experience significantly higher levels of risk for nondisclosure. Patients who are not told about their cancer diagnosis tend to be older (65 years or above), with a mandatory or vocational education, living in rural communities, diagnosed with lung cancer, and not receiving chemotherapy, both in 2007 and 2014. Also, male gender, advanced stage of the disease and lack of cancer experience in family increase risk of cancer diagnosis nondisclosure in Romania. **CONCLUSIONS:** In this study, we explored trends and risks of cancer diagnosis

nondisclosure as a form of translation process from doctors holding discretionary powers to person-centred psychosocial services in oncology in Romania. In this sense, cancer disclosure trends are positive in Romania, but age, gender, socio-economic backgrounds, and treatment-related factors still present specific risks for cancer diagnosis nondisclosure.

Research Implications: Unfortunately, empirical evidence regarding cancer disclosure in Romania is rather scarce. We promote research in this specific area of cancer care. Also, in Romania, cultural aspects might be involved in the nondisclosure of cancer diagnosis. Their implications have to be clarified in future studies.

Practice Implications: From all forms of cancer-related distress, cancer diagnosis nondisclosure has been the least intensely investigated. Clinical work with cancer disclosure leads to the development and implementation of efficient cancer-related distress management methods.

Acknowledgement of Funding: This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS-UEFISCDI, project number PN-II-RU-TE-2012-3-0011. www.psychooncology.ro.

R-2

Providers' roles for advancing end of life care discussions: an emphasis on support staff

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BACKGROUND/PURPOSE: Gaps and delays in patient-provider communication negatively influence advance-care-planning, limit referrals to palliative care, and impact psychosocial care in oncology. Little is known about providers' roles for initiating end of life (EOL) discussions with seriously ill patients, and less is known about how to include supportive staff in this process with physicians. **METHODS:** Qualitative semi-structured interviews were conducted with 79 physicians, nurses, social workers, and chaplains, lasting 45–90 min. Roles for initiating communication with seriously ill patients about dying and preparing for death were explored. Recruitment occurred in two medical centers in Los Angeles, California. Interviews were audio-recorded and transcribed verbatim. Thematic analysis was used to identify themes and sub-themes. **RESULTS:** Three themes described providers' perceptions of their roles and specified support staff involvement: (1) responsibility to initiate, (2) the need for team co-management, and (3) implementing interventions for psychosocial in EOL care. **CONCLUSIONS:** Providers expressed responsibility for engaging patients in early EOL decision-making discussions. The

importance of physicians leading the discussion due to their medical expertise was highlighted, especially when clarifying poor prognosis and the need for EOL care. While physicians are primary to these discussions, an interdisciplinary approach with social workers, nurses, and chaplains would improve psychosocial cancer care.

Research Implications: This study fills a research gap, clarifying providers' roles in initiating discussions with seriously ill patients.

Practice Implications: Clarifying provider's roles for engaging patients in early EOL discussions can promote communication and potentially prevent conflicts in decision making.

Acknowledgement of Funding: Hartford Veterans Affairs Social Work Scholars Program.

R-3

Health information needs of Chinese patients diagnosed with colorectal cancer: a longitudinal study

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BACKGROUND/PURPOSE: Colorectal cancer (CRC) is the third most common cancer globally. Sufficient information support is essential in helping affected patients to cope with illness demands. This longitudinal study examined (1) the changes of health information needs from pre-surgery to 12 months post-surgery and their determinants among Chinese patients with CRC, and (2) its impact on psychological well-being. **METHODS:** 247/274 Chinese patients awaiting CRC surgery were recruited to complete baseline interview, as well as four follow-up interviews at 1, 4, 8, and 12 months post-surgery. Participants were assessed for health information needs (health system information needs (HSI) from SCNS) and psychological distress (HADS). **RESULTS:** Being informed about things patients can do to get well was rated as the top needs at the pre-surgical (46%) and immediately post-surgical (44%) phases. In contrast, having one member of staff with whom patients can talk to about all aspects of their condition was rated as top needs from 4 months post-surgery onward (36.9% to 39.7%). Using latent growth mixture modeling, four HSI need trajectories were identified, with 44% patients evidencing low need scores throughout the study (low stable), 25% had stable moderate need scores (moderate stable), 17% had initial high need scores that subsequently declined (high decline), and 14% had persistent high need scores (persistent high). HSI trajectories were predicted by education level and pre-surgery anxiety. Patients with persistent high HSI needs

($\beta=0.14$, $p=0.015$) reported greater anxiety scores at 12 months post-surgery. **CONCLUSIONS:** One in seven patients showed persistent high unmet HSI needs. Unaddressed HSI needs resulted in greater anxiety at rehabilitation phase.

Research Implications: This report is the first describing trajectories of health information needs in patients newly diagnosed with CRC, thereby offering new insights into patterns of information needs not previously addressed. This high need group may represent a group of ‘information maximizers’ who require high levels of information to manage their anxiety. In contrast, the low stable group may reflect ‘information minimizers’ who prefer lower levels of information to manage anxiety, or they may simply reflect different levels of information provision by the system, or a combination. These hypotheses need to be tested.

Practice Implications: Prehabilitation should focus on helping patients to get well, whereas continuity care is essential throughout the cancer journey. The importance of effective information assessment before surgery with monitoring of information need subsequently should be adopted into standard clinical care.

Acknowledgement of Funding: This work was supported by the Hong Kong Government Health and Health Services Research Fund (project no. 08090921).

R-4

The information need discordance between cancer patients and caregivers in China

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BACKGROUND/PURPOSE: Seeking information concerning cancer is the significant need of patients, and unfulfilled information need may be related to anxiety or depression of patients. In China, cancer patients’ family bridges between information provision from oncology professions and information need of cancer patients. Chinese doctors tend to supply information about cancer to patients’ family at first; the family has the final authority to decide whether to tell patient the information. The family tends to want the patients to know less about the disease, which would block the fulfilling of cancer patients’ information need. Information discordance in our study was defined that for certain disease-related information, some patients wanted to know more while their family did not wish patients know more, or vice versa. Few studies in China aimed at information discordance between cancer patients and their family. Moreover, whether the psychiatric status of cancer patients would

be influenced by information need of patients and family, as well as their attitude towards the counterpart’s information need, it is another question we care for. **PURPOSE:** In our study, we aimed at the following: (1) Study information need of patients and their family and their attitudes towards the counterparts’ information need. (2) Investigate which types of information the discordance existed between patients’ information need and family’s attitude towards patients, or vice versa. (3) Factors influencing information need and information attitude as well as psychological status were investigated by multivariate logistic regression. **METHODS:** Questionnaires for information need and attitude, including subscales as ‘Current state of disease’, ‘Treatment-related information’, ‘How to get more available medical education’, ‘Recurrence or metastasis’, ‘Chance of cure’, ‘Life span or survival rate’ and ‘Self care issues or home care’, were delivered to 366 participants. The Patient Health Questionnaire 9-item (PHQ-9) and the Generalized Anxiety Disorder 7-item scale (GAD-7) were used to evaluate the psychological status of patients. **RESULTS:** Only 121 (66.7%) patients and 129 (70.5%) caregivers preferred for more information about the anticipated life span of patients, while for other types of information, more than 90% of respondents would like more. The most common discordance between information need of the patients and attitude of their caregivers occurred in ‘Life span or survival rate’ (61 dyads, 33.3%), then ‘Current state of disease’ (54 dyads, 29.5%) and ‘the recurrence or metastasis of disease’ (52 dyads, 28.4%). And the main discordance between caregivers’ information need and patients’ attitude happened in ‘Life span or survival rate’ (42, 23.0%) and ‘the Recurrence or metastasis of disease’ (38, 20.8%).

For information need of patients, male patients were more likely to know more about ‘Current state of disease’ (OR=3.69, 95% CI 1.22–11.18), ‘Chance of cure’ (OR=3.80, 95% CI 1.07–13.53) and ‘Life span or survival rate’ (OR=2.13, 95% CI 1.06–4.25). The patients with IV stage tended to refuse to know more information about ‘Current state of disease’ (OR=0.19, 95% CI 0.04–0.87). No matter for patients or caregivers, the patients’ age was the predictive factor for ‘Patients’ life span or survival rate’ (the elder patients, the higher information need).

For patients’ attitude towards information need of caregivers, we found the patients with higher levels of education preferred to let their family know the chance of recurrence or metastasis. And the female and elder patients seemed to be more likely to wish caregivers know their expected life span. For caregivers’ attitude, compared with patient’s spouse,

the adult child was more likely to prevent the patients from getting more information of 'Current state of disease' (OR=0.32, 95% CI 0.13–0.79), 'Life span or survival rate' (OR=0.17, 95% CI 0.06–0.54) and 'Medical education' (OR=0.10, 95% CI 0.03–0.38).

Of 183 patients, 47 (25.6%) patients had PHQ-9 scores of 10 or greater, in which 16 (8.7%) patients scored more than 15. For GAD-7, there were 22 (12.0%) patients having GAD-7 scores of 10 or greater. 52 patients (28.4%), having moderate/severe depression or anxiety, were characterized as 'emotionally distressed' owing to the high overlap between depression and anxiety.

We found that patients with a high need for their expected life span would be more likely to be distressed than patients with low need (OR 3.63, 95% CI 1.54–8.57), while if patients' caregivers did not want patients to know their chance of cure, these patients would be more likely to have symptoms of depression or anxiety (OR 0.24, 95% CI 0.10–0.63).

CONCLUSIONS: Except for the expected life span of patients, most of patients and caregivers would like to know all the subscales of disease-related information. Most of patients wished family know more disease-related information; however, caregivers intended to prevent patients from obtaining more. The information discordance intended to happen when it came to patients' prognostic information. The occurrence of patients' psychiatric disorder was related to patients' information need for expected life span, as well as the attitude of caregivers whether to wish patients know more information about treatment outcome.

Research Implications: In China, cancer patients' family bridges between information provision from oncology professions and information need of cancer patients. Information need of patients was inevitably interfered by their family. The family tends to want the patients to know less about the disease, which would block the fulfilling of cancer patients' information need and cause the distress of patients.

Practice Implications: For Chinese oncology professions, the attitude of caregivers towards cancer patients' information need should be considered before supplying cancer patients with disease-related information, especially prognosis-related information. After clarifying the attitude of patients and family, it could avoid exaggerating distress of patients by more targeted strategy of information provision, which sets a higher demand for medical professions in China.

Acknowledgement of Funding: None.

S-1

Searching the globe: end of life beliefs and practices among indigenous women in Northeast India

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BACKGROUND/PURPOSE: We explored healthcare disparities among indigenous communities in Arunachal Pradesh, situated amidst the Himalayas; it is the largest state in Northeast India. In conjunction with the Research Institute of World's Ancient Traditions Culture and Heritage, end-of-life issues and cancer care among women were examined. National reports indicate literacy levels below the national average, poor life expectancy in remote districts, inadequate access to health services and cancer care, and poor infrastructure. **METHODS:** Six focus groups with 42 women were conducted to explore end-of-life issues and cancer care. Kleinman's Explanatory Model of Illness formed our framework, and semi-structured focus group guides were developed to facilitate data collection. Focus groups were tape-recorded in Hindi and Idu Mishmi languages and transcribed into English. Salient themes were derived using a grounded theory approach and constant comparison method. **RESULTS:** The median age of the participants was 32.5 years. Routine preventative medical visits are nonexistent. Unhealthy symptoms are first treated by their tribal priest, which includes herbal and local medicines. Specialized care is limited with the nearest government hospital being 7 h away. Transportation is treacherous during inclement weather, increasing travel time to at least 14 h. Physicians are scarce and unavailable when needed due to limited resources and difficult topography. Therefore, individuals lack timely diagnosis which often leads to untimely deaths from cancer and other illnesses. **CONCLUSIONS:** The knowledge obtained will contribute to health practitioners' cultural competency skills in working with indigenous groups and increase awareness about global psychosocial care in oncology.

Research Implications: Research is scarce regarding end-of-life beliefs and psychosocial care in oncology among indigenous communities in Arunachal Pradesh, India. Capturing culturally relevant beliefs, traditions, and practices among this population will enable health providers and governmental agencies to devise effective treatments and interventions.

Practice Implications: Clinicians will identify the knowledge gaps and understand the health disparities indigenous communities in Northeast India experience regarding end-of-life beliefs and psychosocial care in oncology.

Acknowledgement of Funding: None.

S-2

Good death in cancer care in China: a qualitative studyLili Song¹, Lili Tang², Ying Pang², Yi Ming¹¹Beijing Cancer Hospital, ²Peking University Cancer Hospital

BACKGROUND/PURPOSE: One of the most important goals of palliative care is achieving a good death. So far, there has been no consensus on what makes a good death in Chinese cancer patients. The study was to explore the perception of a good death from the perspectives of Chinese cancer patients, families, physicians and nurses. **METHODS:** Semi-structured in-depth interviews were conducted with 15 physicians, 15 nurses, 12 advanced incurable cancer patients, and 10 family members of advanced cancer patients. All interviews were audiotaped, transcribed, and analyzed using content analysis. **RESULTS:** 19 categories were classified as follows: Freedom from pain and physical symptoms, Good family relationship, Not prolonging life, Freedom from psychological symptoms, Preparation for death, Fighting against cancer, Good medical service, Contributing to others, Good relationship with medical staff, Not being a burden to others, Maintaining sense of control, Maintaining hope, Maintaining dignity, Completion of life, Control of one's future, Not being aware of death, Dying in one's favorite environment, Appreciating others, and Religious help. 4 themes were derived as follows: no suffering, good support system, worth living, and accepting death peacefully. **CONCLUSIONS:** The study explored the perception of a good death from the perspectives of Chinese cancer patients, families, physicians, and nurses for the first time. The attitude of Chinese people toward a good death was somewhat different from that of Western people. The differences in cultural backgrounds might interfere with the understanding and achievement of a good death. Increasing attention should be paid to communication and psychosocial oncology care in Chinese cancer patients.

Research Implications: The findings provided a framework for understanding a Chinese good death in cancer setting. And on this basis, a good death scale for Chinese people should be developed. A national quantitative study about good death should be conducted. It was also beneficial to further study psychosocial support needs of Chinese advanced cancer patients.

Practice Implications: In Chinese culture, death remains a socially tabooed topic, especially for cancer patients. It is very difficult to discuss about good death directly or openly between cancer patients and their families or their medical staff. The study has led to more attention on good death in the Chinese psychosocial oncology field. It is believed that these findings in our study are valuable to

improve the quality of palliative care under the help of psycho-oncologists in China. Great concern should be given to good death in Chinese cancer patients by psychosocial oncologists.

Acknowledgement of Funding: No funding was received to support this abstract.

S-4

Managing the bureaucracy of dying: a qualitative study of lay caregivers as care coordinators for cancer patients dying in the homeShan Mohammed¹, Nadia Swami¹, Ashley Pope¹, Breffni Hannon¹, Camilla Zimmermann²¹University Health Network, ²Princess Margaret Cancer Centre

BACKGROUND/PURPOSE: Caregivers of patients with advanced cancer may take on complex roles, including coordinating the equipment, personnel, and administration of a home death. The objective of this study was to explore the multiple roles and responsibilities taken on by lay caregivers to coordinate home care for dying cancer patients, and the barriers and facilitators they encountered. **METHODS:** Lay caregivers of patients who completed a randomized controlled trial of early palliative care versus standard oncology care were recruited 6 months to 5 years after the patient's death. In semi-structured interviews from April 2012 to October 2014, participants were asked to explore the responsibilities of managing home care. Grounded theory guided data analysis. **RESULTS:** Sixty caregivers (30 intervention, 30 control; 43 females, 17 males; mean age 60 years) were interviewed, including spouses (32), adult children (19), siblings (4), and other family members (5). Themes corresponded to care coordination across the phases of dying: (1) Structuring the home as a place for dying, (2) Negotiating relationships with healthcare providers, (3) Ensuring supports for active dying, and (4) Managing bureaucratic challenges after death. Thematic analysis revealed few differences between intervention and control groups; however, caregivers of patients who received specialized palliative home care described receiving more support. Caregivers endured tensions between the emotional experience of dying and the bureaucratic responsibilities of death, and described multiple practical concerns in their coordination roles. **CONCLUSIONS:** Caregivers take on challenging administrative and organizational tasks while also enduring emotional strain, and thus may require additional practical and emotional support from the formal healthcare system.

Research Implications: This study suggests that lay caregivers actively assume the coordination of care to ensure the best possible care for their loved one dying of cancer in the home. Although some studies have examined

care coordination by caregivers in long-term chronic conditions like dementia, few studies have examined this phenomenon at the end of life in cancer. Previous systematic reviews point to the need for additional interventional research on practical supports for lay caregivers such as concrete information and skills training. Caregivers in this study described multiple practical concerns in their coordination role: the perceived lack of information about the trajectory of dying, the need for skills to navigate the system, and better supports to deal with the bureaucracy of dying. The conceptual and empirical knowledge discovered by this study could influence future interventional research on care coordination training and supports for lay caregivers.

Practice Implications: Given the limited resources for homecare in Canada and to preserve patients' preferences for the place of death, lay caregivers may be required to participate in homecare in expanded ways, including the coordination of care. Although this study highlighted that lay caregivers find personal meaning in these roles, many caregivers also described feeling unprepared for this complicated and often round the clock project. Study participants described multiple resource and health delivery barriers that they had to overcome to ensure the best possible care. Consequently, the findings suggest that the healthcare system needs to be sensitive to the unique needs of caregivers in this role. As a counterpoint, lay caregivers described the value of palliative homecare, which calls for the expanded utilization of this type of specialized care in the home. Caregivers also had to contain or repress their emotional reactions to witnessing the suffering of their loved ones in order to meet the demands of the care coordinator role. Given the complexity of simultaneously managing distress and contending with the bureaucratization of dying, lay caregivers may require additional and ongoing therapeutic supports from formal institutions.

Acknowledgement of Funding: Funding was provided by the Canadian Cancer Society (Funding #700862).

T-1

Social support improves sleep quality following hematopoietic stem cell transplantation

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BACKGROUND/PURPOSE: Sleep disturbance and fatigue are two of the most commonly reported quality of life concerns following hematopoietic stem cell transplantation

(HSCT). We investigated whether social support enables better sleep quality and less fatigue during the recovery from HSCT. **METHODS:** Adults undergoing HSCT ($N=484$) completed the Social Provisions Scale prior to HSCT and the Pittsburgh Sleep Quality Inventory and Fatigue Symptom Inventory pre-HSCT and at 1, 3, 6, and 12 months post-HSCT. Mixed-effects linear regression models controlling for transplant regimen, age, and time since transplant determined the extent to which pre-HSCT support predicted dimensions of sleep disturbance, fatigue, and their trajectories over time. **RESULTS:** Individuals who reported better social support prior to HSCT experienced better sleep quality ($z=-2.20$, $p<.05$), less nighttime sleep disturbance ($z=-2.00$, $p<.05$), less sleep-related daytime dysfunction ($z=-2.52$, $p<.05$), longer sleep duration ($z=-2.16$, $p<.05$), and shorter sleep latency ($z=-2.81$, $p<.01$) during the 12 months following HSCT. Social support was not associated with sleep efficiency or use of sleep medication. However, the effects of social support on other aspects of sleep were strongest particularly during 1 and 3 months post-transplant. Follow-up analyses of social support dimensions clarified that the social support benefits were strongest for measures of being integrated in a social network, feeling respected, and having close attachments. No significant relationships were observed between social support and fatigue dimensions. **CONCLUSIONS:** Findings suggest that supportive social relationships help to mitigate the deleterious effects of HSCT on sleep quality, especially during the initial period of recovery following HSCT.

Research Implications: Findings add to the literature on the salubrious influence of social support among individuals with cancer, suggesting that the benefits of support extend to sleep disturbance occurring after HSCT. Our results further highlight the importance of examining both the overarching effects of support but also the changing impact over the recovery from cancer treatment.

Practice Implications: Assessing social support at the time of HSCT can assist clinicians in identifying patients who may be at risk for sleep disturbance after transplant. Results also suggest that social support may be a novel target for interventions to improve sleep quality after HSCT.

Acknowledgement of Funding: NCI K07 CA136966; NCI R21 CA133343; NCRR KL2 RR0205012; Forward Lymphoma Foundation.

T-2

Cancer and treatment distress measurement over time in a multicenter cohort of hematopoietic cell transplantation (HCT) recipients (BMT CTN 0902)

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BACKGROUND/PURPOSE: Although screening of distress is now mandated for accreditation by the American College of Surgeons Commission on Cancer, remarkably few measures assess domains for distress specific to cancer. This multicenter study evaluated psychometric properties of the Cancer and Treatment Distress (CTXD) measure in a longitudinal design. **METHODS:** In a randomized controlled trial (Blood and Marrow Transplant Clinical Trials Network 0902, which did not find differences between intervention and control groups), HCT recipients completed the 22-item CTXD along with the Short Form-36 Health Survey (SF-36) at pretransplant, 100, and 180 days post-transplant. Psychometric analyses of pooled group data included internal consistency reliability (Cronbach's α), factor analysis with promax rotation, and convergent, divergent, and predictive validity relative to the mental and physical component summary (MCS and PCS) of the SF-36. **RESULTS:** 711 HCT recipients enrolled from 21 transplant centers, with 57% male, mean age 54.6 years (SD=12.8, range 18–76), 86% White, 5% Hispanic, and 50% allogeneic transplant. At all assessments, the CTXD α reliability was >0.94 . At pretransplant and 100 days, four factors emerged: uncertainty, financial and medical demands, burden (health and family), and identity/appearance. At 180 days, factors were similar except the financial and medical demands split into two factors. In validity testing, the CTXD was strongly inversely related to the MCS (r_s -0.67 to -0.63) and less related to the PCS (r_s -0.46 to -0.31) across the time points. The pretransplant CTXD predicted MCS at 100 and 180 days (r_s <-0.40). **CONCLUSIONS:** The CTXD demonstrates psychometric strength and stability over time in HCT recipients.

Research Implications: The CTXD is stable in factor structure over time, reliable, and valid as a measure of distress and predictor of HCT outcomes. Further work is needed to determine its psychometric properties in translations for global use and with other cancer treatment groups.

Practice Implications: The CTXD can be used to reliably screen distress in HCT recipients over time.

Acknowledgement of Funding: National Heart, Lung, and Blood Institute and National Cancer Institute, U10HL069294.

T-3

Psychological and physical functioning in caregivers undergoing hematopoietic stem cell transplantation

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BACKGROUND/PURPOSE: The availability of a caregiver is important for optimal recovery following hematopoietic stem cell transplantation (HSCT), but many HSCT recipients are also caregivers themselves. We investigated whether being a caregiver impacted psychological and physical functioning following HSCT. **METHODS:** Adults undergoing HSCT ($N=475$) completed assessments of social support, psychological functioning (depression and anxiety), and physical functioning (pain and fatigue) pre-HSCT and 1, 3, 6, and 12 months post-HSCT. Caregivers were identified as HSCT recipients who either had children under age 18 years living at home or scored in the top quartile on the SPS-Nurturance scale, which assesses having others relying on the respondent for support. ANCOVA models covarying for transplant type and age were used to compare caregiver and noncaregiver functioning. Follow-up analyses evaluated differences in social support receipt. **RESULTS:** Caregivers did not differ significantly from noncaregivers on depression, anxiety, pain, or fatigue measures at any assessment point (all $p > .05$). This similarity was also true when only parents or only those with high nurturance were considered (all $p > .05$). Those with high nurturance scores received significantly more social support than those with lower scores ($F=21.9$, $p < 0.001$). However, those with children living at home received comparable support as those without children ($p > .05$). **CONCLUSIONS:** Although the responsibility of caring for someone may be viewed as burdensome for those facing the difficult recovery from HSCT, findings suggest that caregivers function as well following transplant as noncaregivers. In addition, caregivers who more strongly endorsed providing support for others also have the ancillary benefits of receiving more support.

Research Implications: While prior research has focused on the caregivers of cancer patients, the current study suggests that it is important to study cancer patients who are caregivers themselves. Furthermore, our research highlights the importance of examining the effects of both receiving and providing support. Future research should investigate the specific stressors and concerns caregivers face when undergoing HSCT.

Practice Implications: Findings suggest HSCT recipients who are caregivers are not at greater risk, as a group, for impaired physical or psychological functioning following a transplant. It is therefore important to evaluate family and caregiver situations and stressors on case-by-case basis in determining potential psychosocial risk.

Acknowledgement of Funding: NCI K07 CA136966; NCI R21 CA133343; NCRR KL2 RR0205012; Forward Lymphoma Foundation.

T-4

One year after hematopoietic stem cell transplantation: a qualitative study of couples' experiences

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BACKGROUND/PURPOSE: Hematopoietic stem-cell transplantation (HSCT) is an intensive treatment used to manage hematological malignancies. This qualitative study explored the adjustment of HSCT patient-spousal caregiver dyads during the first-year post-transplant. **METHODS:** Couples were purposively selected from a quantitative study at 1-year post-HSCT. Semi-structured interviews were conducted with patients and caregivers separately ($N=10$). Interviews were transcribed and analyzed using interpretive description analysis. **RESULTS:** Four themes emerged: (a) all couples identified themselves as adopting patient and caregiver roles; (b) patients worried about being a burden to their caregivers, but caregivers did not report experiencing burden; (c) participants employed the metaphor of empathically navigating the speed bumps to describe, understand, and create a narrative of their personal HSCT experiences; and (d) negotiating a new normal together encompassed how the couple created a new normalcy together. **CONCLUSIONS:** Couples undergoing HSCT assume new roles and responsibilities. Four out of the five couples demonstrated effective adaptation in that they proved resilient, negotiated new roles effectively, managed HSCT-related challenges and stressors (i.e., navigated the speed bumps), and created a new normal as a couple. Despite their successes, patients in these couples were concerned about burdening their partners, a concern their caregivers recognized. One couple experienced difficulty in negotiating a new normal together. Factors that appeared to be associated with difficulty adjusting to life

during HSCT included ongoing physical limitations, lack of mutual empathy and relational awareness, limited social support, and poor communication.

Research Implications: This study provides a deeper understanding of the intertwined nature of adjustment for HSCT couples.

Practice Implications: Psychosocial oncologists may target patients' feelings of being a burden and encourage couples to communicate effectively while navigating HSCT recovery. Clinicians should be mindful of the identified factors that may deter from a couple's adjustment.

Acknowledgement of Funding: This research was supported in part by the following: Small Budget Research Grant from the Canadian Blood and Marrow Transplant Group awarded to Sara Beattie and Sophie Lebel, The University of Ottawa Research Development Fund awarded to Sophie Lebel, and funding from The Ottawa Hospital Bone Marrow Transplant Foundation awarded to Sara Beattie.

U-1

A randomized controlled trial of cognitive-behavioral stress management in breast cancer: survival and recurrence at 11-year follow-up

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BACKGROUND/PURPOSE: Women with nonmetastatic breast cancer (Bca) often experience elevated psychological distress which may have implications for disease progression and survival. Cognitive-behavioral stress management (CBSM) improves psychological adaptation to Bca treatment and lowers distress at short- and long-term follow-ups. We examined whether women randomized to CBSM had improved survival and recurrence 8–15 years post-enrollment. **METHODS:** From 1998 to 2005, women ($N=240$) who were 2–10 weeks post-surgery for non-metastatic Stage 0–IIIb Bca were randomized to either a 10-week, group-based CBSM intervention ($n=120$) or a 1-day psychoeducational seminar control ($n=120$). At 8–15 years post-enrollment (11-year median), recurrence and mortality data were collected. Cox proportional hazards models and Weibull accelerated failure time tests assessed differences between study groups in all-cause mortality, Bca-specific mortality, and disease-free interval, while controlling for prognostic and

biomedical confounders. **RESULTS:** Relative to the control condition, women in the CBSM group were found to have a reduced risk of all-cause mortality (HR=0.21; 95% CI [0.05, 0.93]; $p = .040$). There was a tendency for women in CBSM to have a reduced risk of Bca-specific mortality (HR=0.25; 95% CI [0.05, 1.11]; $p = .068$) and longer disease-free interval (HR=0.45; 95% CI [0.17, 1.18]; $p = .083$). Restricting analyses to women with invasive disease (Stages I–IIIb) revealed significant effects of CBSM on all three outcomes. **CONCLUSIONS:** A CBSM intervention delivered post-surgery may provide long-term clinical benefit for nonmetastatic Bca patients. The findings add to evidence of numerous psychological and physiological benefits of CBSM delivered post-surgery for Bca and justify incorporating brief evidence-based interventions into clinical oncology settings.

Research Implications: This research bolsters evidence for the effects of psychosocial interventions on clinical health outcomes in nonmetastatic breast cancer patients. The findings suggest that there may be opportunity to modify psychosocial factors in a way that reduces the risk of metastases before they begin. Additional studies are needed to evaluate the long-term effects and underlying mechanisms of cognitive-behavioral psychosocial intervention on clinical disease outcomes of survival and recurrence in nonmetastatic breast cancer patients. Research should address whether intervention-related changes in health behaviors, and affective, neuroendocrine, immune, inflammatory, and other tumor-promoting processes mediate effects of CBSM on survival.

Practice Implications: The findings from this sample of nonmetastatic breast cancer patients highlight the potential for psychosocial interventions to influence disease outcomes in a nonmetastatic cancer population. This study provides evidence that a psychosocial intervention modifying psychological adaptation in women with nonmetastatic breast cancer can reduce the likelihood of long-term all-cause mortality. Within the context of a biopsychosocial, multidisciplinary model of care, CBSM is a group-based, manualized, feasible intervention that can be implemented in clinical oncology settings. Clinical implications of the study are such that there is opportunity for women to reap long-term benefits from CBSM, including potentially prolonged survival, in addition to improved QOL and less depressive symptoms.

Acknowledgement of Funding: This project has been funded in whole or in part with Federal funds from the National Cancer Institute (NCI), National Institutes of Health, under Contract No. HHSN261200800001E, and NCI grant R01-CA-064710. The content of this publication does not necessarily reflect the views of policies of the Department of Health and Human Services, nor does mention of trade names, commercial products, or organizations imply endorsement by the US Government.

U-2

Does a peer-led exercise intervention affect sedentary behavior among breast cancer survivors?

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BACKGROUND/PURPOSE: Sedentary behavior (sitting duration) is increasingly recognized as an independent risk factor for chronic diseases. Our previous work demonstrated that a peer-administered exercise intervention significantly increased breast cancer survivors' moderate-to-vigorous exercise at 12 and 24 weeks. The present secondary analyses examined intervention effects on survivors' sedentary behavior. **METHODS:** 76 breast cancer survivors (mean age = 55.6 years) were randomized to receive either a 12-week exercise intervention or a contact control condition delivered by 18 Reach to Recovery volunteers. The intervention did not specifically target sedentary behavior. At baseline, 12 weeks and 24 weeks, we assessed participants' exercise and sitting time using self-report (7-day Physical Activity Recall) and objective (accelerometer) measures. **RESULTS:** We used mixed effect longitudinal models to test intervention effects on mean sitting duration obtained via self-report and accelerometer, while controlling for chemotherapy use and occupation (physically active vs. other). There were no significant changes over time in self-reported or objectively measured sitting time, nor were there significant intervention effects at 12 or 24 weeks. Specifically, mean group difference in self-reported sitting duration was 159.90 min/week at 12 weeks ($t = -0.66$, $p > .05$) and 66.63 min/week at 24 weeks ($t = -0.27$, $p > .05$). Mean group differences in objectively measured sitting time was 221.64 min/week at 12 weeks ($t = 1.06$, $p > .05$) and 251.47 min/week at 24 weeks ($t = 1.21$, $p > .05$). **CONCLUSIONS:** Exercise promotion among cancer survivors is becoming widespread. Although this peer-led intervention increased survivors' exercise, it did not affect sitting time, suggesting that specific interventions are needed to reduce their sedentary behavior.

Research Implications: Assessing cancer survivors' sedentary behavior is a new and innovative direction for research on health promotion for cancer survivors. This presentation will help researchers understand that sedentary behavior is not the same as exercising too little and that sitting time is unrelated to exercise participation. It is timely for cancer survivorship researchers to recognize that there is a shift in the exercise and health paradigm and attend to developing interventions to reduce sedentary behavior.

Practice Implications: There is increasing recognition that the amount of sedentary behavior that an individual engages in has a large impact on health, regardless of the person's exercise participation. Reducing sedentary behavior may be a viable new strategy that practitioners can adopt to improve recovery and health outcomes of cancer survivors. It may be more feasible for obese/overweight survivors and older survivors (the latter group are the majority of the survivor population) to reduce sitting time and replace it with light-intensity activity. It is timely for practitioners to help modify their patients' sedentary behavior.

Acknowledgement of Funding: National Cancer Institute (R01 CA132854).

U-3

A pilot study of subjective cognitive functioning following the mobile mindfulness-based stress reduction for breast cancer (mMBSR(BC)) survivors program

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BACKGROUND/PURPOSE: Cognitive impairment (CI) is a distressing symptom with prevalence rates that vary between 20% and 90%, among breast cancer survivors (BCS). The mMBSR(BC) program offers a nonpharmacological, complementary alternative medicine approach for CI. The purpose of this pilot study was to test the effects of the mMBSR(BC) program on subjective cognitive functioning among post-treatment BCS. **METHODS:** Using a pre-post design, 15 BCS (stages 0–III) participated in the 6-week mMBSR(BC) program delivered through an iPad integrating the four MBSR meditative techniques (sitting and walking meditation, body scan, and yoga). Demographic data, clinical history, and subjective cognitive functioning were collected at baseline and at the end of week 6. Cognitive functioning was evaluated using the Everyday Cognition Scale (ECog). Participants recorded practice time on the iPad in a diary application (app). Within groups, comparisons between baseline and week 6 were made using the Wilcoxon signed rank test. **RESULTS:** The mean age was 58 years. Of the 13 (87%) who completed the study, there were statistically significant within-subject improvements from baseline to 6 weeks in cognition on the following ECog scales: Memory, Language, and Global Cognition (all $p < .10$). These results provided preliminary

support that the mMBSR(BC) program is a possible effective program for the improvement of subjective cognitive functioning in BCS. **CONCLUSIONS:** This study provides evidence for improvements in subjective cognitive functioning among BCS after using the mMBSR(BC) program, during training from baseline to 6 weeks. Furthermore, the study indicated that mobility through the use of technology can be an effective intervention for cancer survivors.

Research Implications: The present study provides preliminary evidence on the feasibility and effectiveness of a mobile stress reducing behavioral intervention (mMBSR(BC)) for improvement of cognitive functioning among BCS. Despite the magnitude of the problem, important gaps in knowledge remain. Although there is considerable evidence for cognitive changes due to chemotherapy, there is need for randomized trials that test the effects of mobile nonpharmacological programs to increase executive functioning.

Practice Implications: The present study identified the clinical benefits of the mMBSR(BC) program as a mobile intervention that can be easily delivered with less subject burden in oncology clinics and may benefit BCS by increasing their cognitive functioning.

Acknowledgement of Funding: In part by National Institute of Health (NIH)/National Cancer Institute (NCI) and University of South Florida Research Incentive Award.

U-4

Are there patients who benefit less from a self-administered cognitive-behavioral therapy for cancer-related insomnia?

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BACKGROUND/PURPOSE: It is generally believed that self-administered psychological interventions are more appropriate for younger, more highly educated and less symptomatic patients, but evidence supporting this claim is lacking. The goal of this study, conducted in women with breast cancer, was to assess the moderating role of several demographic (e.g., age and education) and clinical (e.g., psychological comorbidity) variables on the efficacy of a video-based cognitive-behavioral therapy (VCBT-I) for insomnia. **METHODS:** As part of a three-arm randomized controlled trial, 80 women with breast cancer and insomnia symptoms received a 6-week VCBT-I (60 min video+6 booklets). At baseline and post-treatment, they completed a battery of self-report scales including the Insomnia Severity Index (ISI) and the Hospital Anxiety and Depression Scale (HADS) and a 2-week daily sleep diary providing assessment of sleep efficiency (SE).

RESULTS: A more severe cancer stage was significantly associated with a smaller reduction of ISI scores ($p=.04$) and a smaller increase of SE ($p<.001$) at post-treatment. Personal antecedents of an insomnia disorder ($p=.03$), higher depression scores on the HADS ($p<.001$) and a greater rate of anxiolytics usage ($p=.03$) were significantly associated with a larger reduction of ISI scores at post-treatment. **CONCLUSIONS:** This study suggests that patients with a more advanced breast cancer are less likely to benefit from a self-administered intervention for insomnia. Patients with antecedents of insomnia, with higher depression scores and using more anxiolytic medications showed larger improvements, an effect that can be explained by regression to the mean as these patients had more severe insomnia at baseline.

Research Implications: Further studies are needed to identify other variables influencing the effect of self-administered psychological interventions in cancer. Variables that should be investigated include health literacy and ease using new technologies.

Practice Implications: Overall, results of this study suggest that the effects of VCBT-I are relatively robust to several demographic and clinical variables, including age, education and comorbidity and could therefore be used widely.

Acknowledgement of Funding: This research was funded by the Canadian Breast Cancer Research Alliance (grant #017738) and a research scientist award from the Fonds de la recherche en santé du Québec to the first author.

V-1

Attentional bias towards cancer-related stimuli is related to symptoms of posttraumatic stress in parents of children recently diagnosed with cancer

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BACKGROUND/PURPOSE: A considerable proportion of parents of children diagnosed with cancer reports a clinically significant level of symptoms of posttraumatic stress (PTSS). However, little is known about the cognitive processes related to clinical levels of PTSS in this group. **METHODS:** Sixty-two parents (36 mothers) of children recently diagnosed with cancer completed the Emotional Stroop test including three conditions: (1) cancer-related words, (2) cardiovascular disease-related words, and (3) neutral words. Participants completed the PTSD-Checklist (PCL-C) and were divided in two groups according to

level of PTSS: HighPTSS and LowPTSS, respectively. Data were collected via the Internet. Response latencies in milliseconds on color identification in the Emotional Stroop test were measured independently of Internet connection and bandwidth, and were used as the main outcome. **RESULTS:** A 3×2 mixed effects analysis revealed a significant word type \times group interaction ($F=3.87$, $p<.05$), showing that response latencies differed as a function of word type and group. A contrast test of the interaction revealed that the HighPTSS group reported longer response latencies on cancer-related words compared to the other group and word type combinations (Estimate=59.40, $p<.05$). **CONCLUSIONS:** The results are the first to indicate attentional bias towards cancer-related stimuli among parents of children recently diagnosed with cancer reporting a high level of PTSS.

Research Implications: The role of attentional bias in the onset and maintenance of emotional distress experienced by parents of children diagnosed with a serious disease should be investigated in future research.

Practice Implications: Attentional bias could inform psychological interventions for parents of children recently diagnosed with a serious disease.

Acknowledgement of Funding: This research is funded by grants from the Swedish Research Council (grant numbers K2008-70X-20836-01-3 and K2011-70X-20836-04-4, PI: Louise von Essen), the Swedish Cancer Society (grant numbers 2007/1015 and 2010/726, PI: Louise von Essen), and the Swedish Childhood Cancer Foundation (grant numbers PROJ08/010 and PROJ12/028, PI: Louise von Essen).

V-2

The effects of cancer-related stress and perceived prognosis on mother–child communication about cancer

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BACKGROUND/PURPOSE: Parent–child communication is essential in the adjustment of children to a diagnosis of pediatric cancer and its treatment. We explored quality of mother–child communication about cancer as a function of cancer-specific stress and perception of prognosis. **METHODS:** Families ($n=110$) of children ages 5–18 years were recruited from cancer registries of two children's hospitals 1–2 months following diagnosis. Mothers provided self and child report, and children over

the age of 10 years ($n=54$) provided self-report. Measures included a cancer-specific stress index (Response to Stress Questionnaire) and a visual analog scale wherein participants rated 5-year projected cancer prognosis. Approximately 4 months post-diagnosis, mother–child dyads participated in a videotaped conversation about cancer and its impact on their family. Using the Iowa Family Interaction Rating Scale, researchers assigned each participant a communication score (CO), indicating level of appropriate reasoning, explanations, clarifications, solicitations, and consideration of other's views. **RESULTS:** Mother self-report of stress, perception of child stress, and perception of poor cancer prognosis were each associated with poorer mother CO ($r=-.28$; $r=-.33$, $r=.29$), whereas child self-report of stress and prognosis was unrelated to mother or child CO. Mothers who perceived high child stress in addition to poor prognosis had the lowest rated CO (beta = .24, $p=.003$, $R^2=23\%$). **CONCLUSIONS:** Mothers' perceptions of stress and prognosis predicted the quality of their own communication about cancer. Interventions may be necessary to aid mothers in learning how to effectively talk to children about illness, especially in the face of elevated distress and anticipation of treatment failure.

Research Implications: This research contributes to our understanding of factors that influence the way mothers and children talk about illness. Future research should investigate how the quality of communication about cancer predicts long-term adjustment in children and parents.

Practice Implications: Clinical providers should focus on helping parents communicate effectively about cancer with children, as those who worry the most about their child's health and well-being are least effective in their communication and perhaps the most necessitous of these skills.

Acknowledgement of Funding: This project is funded by the National Cancer Institute.

V-3

Evaluation of an electronic psychosocial dashboard to facilitate the delivery of the psychosocial standards of care in pediatric oncology

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BACKGROUND/PURPOSE: To implement the use of an electronic psychosocial dashboard to promote high reliability and quality psychosocial care for youth with cancer. **METHODS:** An electronic dashboard was developed that pulls selected information directly from the electronic medical record (EMR) to inform

psychosocial care planning. Tailored reports are generated to communicate psychosocial care plans to other treatment team members. Qualitative and quality improvement methodology is currently being utilized to refine dashboard content and evaluate the acceptability and feasibility of the tool with current psychosocial team members. Data collection is ongoing. **RESULTS:** Acceptability/feasibility has been evaluated with the bone marrow transplant (BMT) team and is currently being tested with the leukemia and lymphoma (L&L) team. Qualitative results show low acceptability for BMT team but very high acceptability from the L&L team. Additional results will include utility ratings, medical team satisfaction ratings, time to service, and frequency of service per inpatient day and outpatient visit for each psychosocial discipline. **CONCLUSIONS:** The need for a tool to integrate psychosocial information from various locations in the EMR and to facilitate coordination across all treatment team members may vary by size and culture of the team. In larger teams, the availability of a data driven tool is seen as needed and will facilitate providers to identify specific points of intervention. Once refined, the tool will facilitate the delivery of the fundamental psychosocial standards of care to youth with cancer.

Research Implications: Ultimately, this tool will provide increased power to efficiently assess the psychosocial care patients receive and how that may impact their healthcare utilization.

Practice Implications: This tool has the potential to increase the reliability with which youth with cancer and blood disorders receive the standard psychosocial care as well as the quality of those services.

Acknowledgement of Funding: NIH T32: 'Enhancing Treatment Adherence and Health Outcomes' T32HD068223.

V-4

Advances in pediatric oncology—a 5-year nationwide survival follow-up at Children's Cancer Hospital in Egypt

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BACKGROUND/PURPOSE: Childhood cancers are a major healthcare concern in Egypt and the Arab World. Consequently, it is a substantial financial and healthcare burden as the survival rate is appreciated to less than 30% while the treatment options are stagnant in progress. The Children's Cancer Hospital Egypt has adopted the Western protocols since 2007, which gives new means

to improve cancer survival and care. **METHODS:** This study was undertaken to estimate the proportion of children with cancer in Egypt seen at the Children's Cancer Hospital in Cairo, Egypt. Moreover, the study was designed to investigate possible predictors of mortality. We administered two questionnaires, one at the start of chemotherapy and one at the third chemotherapy, to 304 parents of children newly diagnosed with cancer. The survival rate was calculated 5 years after the study was conducted. **RESULTS:** Among the 304 children diagnosed with cancer at the Children's Cancer Hospital, 274 children were followed up 5 years after data collection, and we found that 58% ($n = 176$) had survived with an additional 10% lost to follow-up. The only statistically significant difference found between the group that survived and the group that did not survive in relation to numerous psychosocial and demographic factors was mother's level of education with a p -value 0.02. **CONCLUSIONS:** The observed survival rate of the children in our group is 58%, with an addition of 10% lost to follow-up. This is an increase as compared to official statistics for earlier years. A progress in childhood cancer survival is clearly noted, which we consider brings childhood cancer treatment in Egypt and the Arab World to a new standard not previously obtained.

Research Implications: This is important data as it indicates a significant raise in childhood survival in Egypt, compared to the official statistics. This information may be relevant for researchers to keep monitoring and conducting additional research in this area and, not least, promote the importance of information to parents/caregivers.

Practice Implications: A continued monitoring is required to maintain, assure and advance the quality and to insure continuity. Additional monitoring of the survival follow-up is essential to perhaps be able to assure a raise in survival. Also, being aware of the importance of information to the parents/caregivers.

Acknowledgement of Funding: None.

W-1

Fear of cancer recurrence, quality of life and distress in the first year after the diagnosis of colorectal cancer

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BACKGROUND/PURPOSE: Improved methods of early detection and treatment have led to rising numbers of patients surviving colorectal cancer. Whereas some cancer survivors show resilience, others are not able to

reestablish normal life patterns after treatment completion. This study focused on assessment of fear of cancer recurrence (FCR), quality of life (QoL) and distress in the first year after diagnosis of colorectal cancer. **METHODS:** Men and women with a recent diagnosis of colorectal cancer were consecutively recruited in eight hospitals in the Netherlands. After informed consent, participants received four questionnaire booklets during one year (baseline (T1), 3 (T2), 6 (T3) and 12 (T4) months) including demographic variables, medical data and questionnaires on FCR, distress and QoL. **RESULTS:** 198 colorectal cancer survivors returned at least one out of four questionnaires. Median age was 67.1 years (range 41–88); 127 participants (64%) were male. Global QoL decreased after T1 and T2 but then increased, with scores at T4 ($t(127) = -3.7$, $p < .001$) being comparable with a healthy reference population. FCR ($t(105) = 2.4$, $p = .02$) and cancer-specific distress ($t(97) = 4.7$, $p < .001$) were highest at T1 and then significantly decreased (T2). Women experienced significantly higher levels of distress ($t(134) = -2.7$, $p = .009$) and FCR ($t(149) = -4.3$, $p < .001$). Patients with rectal cancer experienced significantly higher levels of cancer-specific distress at T1 ($t(118) = -2.2$, $p = .03$) and T2 ($t(129) = -2.3$, $p = .02$) than patients with colon cancer. At T4, high levels of distress and FCR were experienced by 30 (22%) and 48 (35%) patients, respectively. **CONCLUSIONS:** In general, colorectal cancer survivors experience moderate levels of emotional problems in the first year after diagnosis. A substantial proportion experienced heightened levels of distress and FCR after 1 year.

Research Implications: The results of this study give an overview of psychological problems colorectal cancer survivors encounter in their first year after diagnosis.

Practice Implications: With the results of this study, it is possible for clinicians to recognize risk factors and vulnerable patients who need extra help in the first phase of their recovery. Since most colorectal cancer survivors experience moderate levels of emotional problems, psycho-education and self-management programs could be a suggestion for accurate and accessible care for this group.

Acknowledgement of Funding: Fonds NutsOhra.

W-2

Trajectories of quality of life, health and personal well-being in the first 2 years following curative intent colorectal cancer: results from the UK ColoRECTal Wellbeing (CREW) Study

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BACKGROUND/PURPOSE: It is important to understand patterns of recovery after cancer treatment in order to tailor aftercare appropriately. We examine trajectories of quality of life (QoL), health status and personal well-being in the first 2 years following colorectal surgery. **METHODS:** This is a prospective cohort study of 1018 UK colorectal cancer patients. Questionnaires were administered at pre-surgery (baseline) and at 3, 9, 15 and 24 months later. Physical symptoms, QoL [Quality of Life in Adult Cancer Survivors (QLACS)], health status (EQ-5D), personal well-being (Personal Wellbeing Index), anxiety, depression, self-efficacy, social support, sociodemographic and clinical/treatment characteristics were examined. Longitudinal analyses assessed change in health and well-being over time and predictors of distinct trajectories. **RESULTS:** QoL significantly improved overall, specifically from 15 months. Health status significantly improved, although 59% reported moderate/severe problems at 24 months. Personal well-being significantly declined; 35% reported reduced well-being at 24 months. Four distinct trajectories were apparent for QoL (QLACS Generic Summary Score), health status and personal well-being, ranging from 5% to 7% in the poorest trajectories showing consistent problems to 30–40% in the best trajectories. Significant risk factors for the poorest QoL trajectory (vs. best) were higher deprivation, more comorbidities, stoma, worse symptoms, worse anxiety and depression, and lower self-efficacy and social support. Predictors for health status and well-being trajectories were similar. **CONCLUSIONS:** Distinct recovery trajectories following surgery for colorectal cancer can be identified, and it is possible to predict who may fall into these groups. Different approaches to follow-up care are warranted, and these results provide robust data regarding who is likely to need more intensive support.

Research Implications: This paper presents data from a large representative sample of colorectal cancer patients treated with curative intent. This large-scale, prospective, longitudinal cohort study provides novel data including both pre-treatment characteristics and patterns of change over time. By presenting data from the QLACS, EQ-5D and PWI, we are able to explore QoL and health and well-being holistically, including personal, social and physical attributes, something not currently available in the literature.

Practice Implications: By describing trajectories of recovery over time and their predictors, we can begin to understand who is most at risk of a protracted recovery

following treatment for colorectal cancer and what interventions are required to support these individuals in the context of follow-up care.

Acknowledgement of Funding: Macmillan Cancer Support.

W-3

Autonomy support and changes in self-determined motivation for physical activity predict changes in posttraumatic growth among post-treatment breast cancer survivors

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BACKGROUND/PURPOSE: Physical activity (PA) improves health and mitigates challenges faced by breast cancer (BC) survivors (Sabiston & Brunet, 2012). Qualitative findings suggest PA experiences may also facilitate posttraumatic growth (PTG)—positive psychological changes resulting from coping with highly stressful events such as BC—by providing opportunities for increased control, support, and competence (McDonough, et al., 2011). Self-determination theory posits that growth and well-being are promoted in environments that support autonomous decision making and that nurture self-determined (intrinsic and identified) rather than controlled (introjected and extrinsic) motivation for healthy behaviors including PA (Deci & Ryan, 2000). We tested whether greater autonomy support for PA from healthcare providers and increasing self-determined motivation for PA predicted greater increases in PTG among BC survivors. **METHODS:** BC survivors ($N=176$; age 28–79 years, 85% Caucasian) completed self-report measures of motivational regulations and PTG at baseline (<5 months post-treatment) and 3, 6, 9, and 12 months later. Autonomy support from healthcare providers was assessed at 6 months. Latent growth curve modeling was used to test hypotheses. **RESULTS:** Greater autonomy support for activity from healthcare providers ($\pi=.28$, $p=.04$) and increasing identified regulation ($\pi=.88$, $p<.01$) predicted greater increases in posttraumatic growth. **CONCLUSIONS:** Survivors who have healthcare professionals who encourage PA in autonomy supportive rather than controlling ways, and who experience increased motivation for PA because they personally value PA outcomes have greater increases in PTG post-treatment.

Research Implications: Findings extend PTG theory by establishing empirical links between motivational processes for PA and PTG.

Practice Implications: Fostering autonomy supportive communication in healthcare settings and facilitating

self-determined motivation may encourage not only PA behavior but also PTG among survivors.

Acknowledgement of Funding: Canadian Institutes of Health Research/Canadian Breast Cancer Research Alliance.

W-4

Prevalence and correlates of physical activity in post-treatment cancer survivors

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BACKGROUND/PURPOSE: The American Cancer Society (ACS) recommends cancer survivors engage in moderately intense physical activity (PA) >150 min/week. This study aims to examine the prevalence and correlates of PA guideline adherence among 1-year post-treatment survivors. **METHODS:** 1203 breast, colorectal, and prostate cancer survivors within the first year post-treatment were surveyed. Multivariate multinomial regression identified medico-demographic variables related to participants who were (1) inactive (0 MET h/week), (2) insufficiently active (0.01–8.74 MET h/week), (3) 1 to less than 2× ACS's recommended levels (8.75–17.49 MET h/week), and (4) two or more times ACS's recommended levels (17.5+ MET h/week, referent group). **RESULTS:** 8.5% of survivors were inactive, 34.1% insufficiently active, 24.4% 1 to less than 2× recommended levels, and 33.1% exceeded recommended PA levels by 2 or more times. Multivariate analysis revealed female colorectal and breast cancer survivors were significantly more likely to be inactive compared to prostate cancer survivors (OR=2.47, 95% CI: 1.17, 5.26; OR=2.66, 95% CI: 1.20, 5.90; respectively). The odds of being inactive or insufficiently active were 3.86 (95% CI: 1.74, 8.58) and 2.04 (95% CI: 1.16, 3.59) higher for current smokers compared to non-smokers, respectively. In addition, body mass index (BMI) and age were significantly and positively associated with being inactive and insufficiently active. No significant associations between cancer stage and PA levels were found. **CONCLUSIONS:** In this study, ~43% of survivors did not meet PA guidelines. Being a female with breast or colorectal cancer, smoking, and increasing age and BMI were all factors associated with lower levels of PA.

Research Implications: The results of this study may allow future researchers to identify subgroups of the cancer survivor population who are less likely to meet PA guidelines to enable more targeted programs aimed at increasing PA among first year cancer survivors.

Practice Implications: Results may better inform clinicians allowing them to identify high risk groups and provide tailored PA counseling for first-year cancer survivors.

Acknowledgement of Funding: ACS.

X-1

Dissemination and therapists' implementation of an evidence-based treatment for cancer patients

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BACKGROUND/PURPOSE: While there is accumulating research on dissemination and implementation (D&I) of evidence-based treatments (EBTs) for mental health, there is a paucity of such research regarding D&I of psychosocial EBTs for cancer patients. Mental health professionals completed a 3-day training institute in an empirically supported biobehavioral intervention (BBI) for cancer patients. The study aim was to examine therapists' trajectory of BBI usage 6 months post-training and examine factors related to EBT implementation. **METHODS:** Trainees ($N=84$) were full time social worker, psychology, and other licensed providers at large medical centers (50%) or community facilities. Trainees reported BBI usage at 2, 4, and 6 months post-institute. **RESULTS:** The percentage of patients treated with BBI at 2 months follow-up was 60% (SD=34%) and increased to 69% (SD=35%) by 6 months. Mixed effects models demonstrated usage increased by 5% at each subsequent follow-up. Of the five contributing factors explored, two remained significant following backwards elimination. Specifically, therapists in community-based centers were more likely to implement BBI ($B=.166$, $SE=.065$, $p=.013$) relative to those in noncommunity sites (i.e., academic cancer centers or VA hospitals). The amount of time therapists spent engaging in administrative tasks led to a decrease in BBI usage ($B=-.008$, $SE=.003$, $p=.005$). **CONCLUSIONS:** The BBI training was an effective dissemination strategy. Moreover, implementation of the BBI was significant.

Research Implications: This is the first study to examine dissemination and implementation of an EBT in cancer control.

Practice Implications: Empirically supported treatments often fail to translate into clinical practice. Thus, identifying factors related to effective D&I strategies is essential to facilitate EBT usage and improve treatment availability.

Acknowledgement of Funding: Supported by the National Cancer Institute (CA163917).

X-2

Development of a resiliency program for interpreters in cancer care

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BACKGROUND/PURPOSE: There is a growing demand for interpreters in the cancer setting. Limited English proficiency patients are at risk for lower quality cancer care, and interpreters are the link to quality care. These responsibilities can be stressful, yet interpreters receive no training on how to cope with stressors. **METHODS:** From 2013 to 2014, we developed and pilot tested a targeted resiliency program with interpreters from three Boston-based hospitals. In phase 1, we conducted five focus groups ($n=31$) to identify interpreters' psychosocial needs. In phase 2, we developed and tested a 4-h group program with 29 interpreters (response rate = 90%; 69% female, 54% Hispanic, and 85% born outside of the USA). **RESULTS:** Phase 1. Stressors were patient-based (seeing young patients decline), interactions with medical team (unsure of role), and systems based (appointment unpredictability). Phase 2. At baseline, interpreters reported very low abilities to cope with stress (measured by the Measure of Current Status (MOCS-A)). At 4-week follow-up, we found improvements in job satisfaction ($p=.02$; Cohen's $d=.51$) and declines in sick days ($p=.08$; Cohen's $d=.23$). Stress reactivity (MOCS-A) improved; specifically, participants reported feeling more assertive about their needs ($p=.10$; Cohen's $d=.22$) and more able to relax at will ($p=.10$; Cohen's $d=.313$)—important mechanisms to lower distress. **CONCLUSIONS:** We developed and piloted a resiliency program for medical interpreters in cancer care. We found that interpreters experience distress and have low coping skills. This program resulted in improved work factors and stress reactivity. Future research will include further implementation and testing in a randomized trial.

Research Implications: This study demonstrates the feasibility and value of caring for members of a cancer patient's care team—particularly for vulnerable patients. There is a need to build on this study by conducting a randomized trial with a larger and more diverse interpreter representation as well as expand this work into other members of cancer patients' care team who are vulnerable to the psychosocial stresses of working in the oncology setting.

Practice Implications: This study demonstrates the relevance, need, and benefit of caring for oncology care medical team members.

Acknowledgement of Funding: National Cancer Institute: NIH/NCI 5U54CA156732.

X-3

LGBTQI cancer healthcare experiences: results of a survey of healthcare providers and an LGBTQI population in Florida

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BACKGROUND/PURPOSE: The lesbian, gay, bisexual, transgender, queer/questioning, and intersex (LGBTQI) community represents a growing and underserved population in the USA. Little is known about LGBTQI health and healthcare experiences, particularly in an oncology setting. This study sought to assess the knowledge, attitudes, and practice behaviors of healthcare professionals (HCP) regarding LGBTQI health, as well as a Florida LGBTQI population's perceptions, experiences, and knowledge. **METHODS:** A 33-item web-based survey was emailed to HCPs at a single institution. The survey included demographics, knowledge, attitudes, practice behaviors, and open-ended comments. In addition, members of Equality Florida™ in the Tampa Bay region received a 60-item questionnaire including open-ended comments via email assessing attitudes and experiences, with HCPs. **RESULTS:** 113 HCPs completed the survey. Less than 50% of HCPs surveyed reported accurate knowledge of LGBTQI health risks and concerns; 26% of providers actively inquired about sexual orientation, and 72% did not feel well informed on LGBTQI healthcare needs. 632 members (41% gay men, 29% lesbian) of Equality Florida™ completed the survey. 67% reported always or often disclosing their sexual orientation/identity to HCPs, and <10% experienced negative reactions in the healthcare setting. Settings were perceived as safer with equality signs and gender-neutral language. Open-ended responses suggested need for policy changes and improved cultural competence among HCPs. **CONCLUSIONS:** Knowledge gaps and practice behaviors among HCPs regarding the LGBTQI population indicate a need for additional training and education. Results from the members of the LGBTQI population highlight the need for examination of hospital policies and improved cultural competency.

Research Implications: There has been a limited amount of research on LGBTQI health and healthcare experiences. More research is needed to reverse health disparity in the LGBTQI population.

Practice Implications: A large part of the healthcare experience is the interaction with the healthcare provider. Improved policies and cultural competencies are necessary to improve health outcomes in this population.

Acknowledgement of Funding: Moffitt Cancer Center.

X-4

Distress in cancer survivors attending a multidisciplinary survivorship clinic

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BACKGROUND/PURPOSE: Distress is defined as an unpleasant emotional experience that may interfere with the ability to cope with cancer or its treatment. Distress screening is recommended during transitions including survivorship. We describe distress in cancer survivors before and after participation in a multidisciplinary survivorship clinic. **METHODS:** All patients participating in the Yale Adult Survivorship Clinic were asked to complete the National Comprehensive Cancer Network Distress Thermometer (DT) immediately before and after a visit. Survivors ranked distress from 0 (none) to 10 (extreme) and indicated associated problems from a 39-item list. A score ≥ 4 was considered clinically significant. Survivors were seen by an MD/APRN, social worker, registered dietitian, and physical therapist. Survivors received individual counseling on topics including survivorship care, diet and exercise, and coping. All were offered a follow-up visit approximately 8 weeks later. Distress screening was repeated at the follow-up visit. Distress scores before and after each visit were compared using paired *t*-tests. **RESULTS:** 377 survivors completed DTs before and after a survivorship clinic visit in 18 months. Survivors were mostly female (91%), were White (77.2%), and with a history of breast cancer (73%). The mean distress score prior to the initial visit was 4.82, which decreased to 2.45 after the visit ($\Delta -2.34$, SD 2.06, $p < 0.0001$). The top problems identified were worry (53%), fatigue (43%), and fears (30%). 191 survivors (51%) had clinically significant distress (≥ 4) before the initial visit, which significantly decreased after (20%, $p < 0.001$). Of survivors who returned for the follow-up visit ($N = 107$), the distress score was 4.20 before and 1.86 after ($\Delta -2.42$, SD 2.50, $p < 0.0001$). Survivors who returned for follow-up had higher baseline levels of distress (56% with scores ≥ 4 , $p = 0.02$); only 16% had distress ≥ 4 after completion of both visits ($p < 0.001$). **CONCLUSIONS:** More than half of all survivors participating in a multidisciplinary

survivorship clinic reported clinically significant distress. Distress scores were significantly lower after the visit. These results suggest participation in a survivorship clinic is an intervention for distress.

Research Implications: The information presented will inform researchers about the use of a validated distress screening tool in clinical practice.

Practice Implications: The information presented will inform oncology health professionals about distress in cancer survivorship and a possible intervention.

Acknowledgement of Funding: None.

Y-1

The relationship between stress hormones (cortisol), cytokines (IL-6) and symptoms among breast cancer survivors (BCS) in an MBSR(BC) randomized controlled trial (RCT)

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BACKGROUND/PURPOSE: BCS are at high risk for symptom distress and related increases in proinflammatory cytokines (interleukin 6 (IL-6)) and stress hormones (cortisol). Mindfulness-based stress reduction for breast cancer (MBSR(BC)) has been proven to reduce symptom distress. The purposes were to evaluate the efficacy of the MBSR(BC) program in reducing cortisol and IL-6 and identify their relationship to psychological and physical symptoms, and quality of life (QOL). **METHODS:** There were 322 BCS (Stages 0–III) randomized to a 6-week MBSR(BC) program ($N = 155$) or Usual Care (UC) ($N = 167$). Salivary cortisol and IL-6 were assessed at baseline and 6 weeks for both groups and at week 1 pre- and post-MBSR(BC) intervention. Measures of symptoms and QOL were assessed, and Spearman correlations, linear mixed models and paired *T*-tests methods were used for analyses. **RESULTS:** Statistically significant relationships were found between IL-6 and pain ($r = .21$, $p = .02$), and QOL (Physical Functioning, Energy, General Health, Pain, Physical Health, Physical Health, and Role Limits-Physical; r s ranged between $-.18$ and $-.25$, $p < .05$). Cortisol was significantly related to physical health ($r = -.11$, $p = .05$). In the MBSR(BC) group, cortisol levels were reduced between pre- and post-MBSR(BC) assessments at weeks 1 and 6 ($p < .01$), and IL-6 levels were reduced at baseline and week 6 ($p < .05$). No between groups

differences were observed. **CONCLUSIONS:** IL-6 and cortisol were significantly related primarily to physical symptoms in early stage BCS. Although there were no significant differences between groups, MBSR(BC) was found to be a beneficial intervention for acutely reducing cortisol and IL-6 levels within these survivors.

Research Implications: The present study advances the empirically established benefits of MBSR(BC) and integrates newly found significant within group effects showing that MBSR(BC) may have an immediate stress reducing biological effect on the stress hormone cortisol and IL-6 along with these biomarkers being related to symptoms. The complexity and chronic nature of the symptoms experienced among BCS, their high risk of morbidity, and psychological and physical distress validate the important need for examination of biomarkers of stress that are reduced by stress-reducing interventions, such as MBSR(BC).

Practice Implications: The present study identified the clinical benefits of MBSR(BC) establishing it as a clinical nonpharmacological intervention that can be delivered in oncology clinics that may benefit BCS by decreasing their stress hormones and cytokines with related symptom benefit.

Acknowledgement of Funding: National Institute of Health (NIH)/National Cancer Institute (NCI).

Y-2

A symptom cluster trial, the effects of mindfulness-based stress reduction (MBSR(BC)) on symptom clusters among breast cancer survivors (BCS)

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BACKGROUND/PURPOSE: Although BCS report numerous distressing physical and psychological symptoms, there is little evidence on how these symptoms cluster together and if behavioral interventions have an effect. This two-armed randomized controlled trial (RCT) evaluated if positive effects achieved from the MBSR(BC) program were modified by symptom clusters in BCS compared to usual care (UC). **METHODS:** This R01 trial randomized 322 BCS (Stages 0–III) to either a 6-week (2-h MBSR(BC) program) ($n=168$) or a UC (wait-listed) regimen ($n=155$). Physical (pain, fatigue and sleep) and psychological symptoms (stress anxiety and depression), symptom clusters and quality of life (QOL) were measured at

baseline, 6 and 12 weeks. Data were analyzed using confirmatory factor analysis (CFA) and structural equation modeling. **RESULTS:** The mean age was 56.6 years, with the majority being White non-Hispanic (69.4%). Four symptom clusters emerged at baseline: (1) pain; (2) psychological (depression, stress, anxiety and emotional well-being); (3) fatigue (sleep, drowsiness and fatigue); and (4) cognitive (memory and mindfulness), and remained adequately fit (statistically supported) using CFA at 6 and 12 weeks. Differences were not observed at baseline; however, at 6 weeks, the MBSR(BC) group had greater improvements in the psychological and fatigue clusters compared to UC ($p < .01$). Although there were no differences between 6 and 12 weeks, the pain cluster demonstrated a trend for improvement in the MBSR(BC) group ($p = .09$). **CONCLUSIONS:** This RCT provides evidence for psychological (depression, stress, anxiety and emotional well-being) and physical (sleep, drowsiness and fatigue) symptom cluster improvements among BCS in the MBSR(BC) program, with improvements during training in MBSR(BC) from baseline to 6 weeks.

Research Implications: This study advances the empirically established benefits of MBSR(BC) in symptom cluster research. It also provides new significant evidence related to symptom cluster research in oncology by showing that MBSR(BC) program had an immediate (at 6 weeks) improvements in the psychological cluster (depression, stress, anxiety and emotional well-being) and physical clusters (sleep, drowsiness and fatigue) compared to UC ($p < .01$). Since symptom cluster research is in its infancy, there is a need to further establish and validate significant approaches for cluster research among other cancer populations.

Practice Implications: This study identified the multiple clinical benefits of the MBSR(BC) program through establishing it as a clinical nonpharmacological intervention for psychological symptoms (depression, stress, anxiety and emotional well-being) and physical symptoms (sleep, drowsiness and fatigue) among BCS. It also validates that the MBSR(BC) program can be delivered in oncology clinics and integrated into BCS personalized medical care plan.

Acknowledgement of Funding: National Institute of Health (NIH)/National Cancer Institute (NCI).

Y-3

Feasibility and effects of Cognitively-Based Compassion Training (CBCT) on psychological well-being in breast cancer survivors: a randomized, wait list controlled pilot study

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BACKGROUND/PURPOSE: This study assessed the feasibility and effectiveness of a meditation-based program called Cognitively-Based Compassion Training (CBCT) with breast cancer survivors. Enrollment and participant satisfaction with a novel intervention, adherence to program requirements, and differences between the intervention group versus wait list controls on self-report behavioral measurements were assessed. Additionally, cortisol, a stress-related endocrine biomarker, was assessed. **METHODS:** Participants ($n=33$) were randomly assigned to CBCT or the wait list. CBCT provided eight weekly, 2-h classes and a ‘booster’ CBCT session 4 weeks later. CBCT participants were expected to attend classes and meditate between classes at least three times per week. Pre-/post-intervention and follow-up questionnaires measured symptom change (depression, intrusive thoughts, perceived stress, fear of cancer recurrence, fatigue/vitality, loneliness, and quality of life). Saliva samples were collected at the same periods to assess slope of diurnal cortisol activity. **RESULTS:** Enrollment, class attendance, home practice time, and patient satisfaction exceeded expectations. Compared to controls, post-intervention of the CBCT group showed significant improvements in depression, avoidance of cancer-related experience, functional impairment associated with fear of recurrence, mindfulness, and vitality/fatigue. At follow-up, less perceived stress and higher mindfulness were also significant in the CBCT group. No significant changes were observed on any other measure including diurnal cortisol activity. **CONCLUSIONS:** This is the first study of the feasibility and effectiveness of a compassion-based intervention for cancer survivors. It demonstrated that CBCT is feasible and may be beneficial for survivorship care of breast cancer patients.

Research Implications: Within the limits of a pilot feasibility and effectiveness trial, results suggest that CBCT is a feasible and highly satisfactory intervention potentially beneficial for the psychological well-being of breast cancer survivors. However, more comprehensive trials are needed to provide systematic evidence.

Practice Implications: Breast cancer survivors often seek ways to improve their resilience and well-being. The high satisfaction with the intervention reported by study subjects suggests it would be appealing to cancer survivors seeking improved mind–body wellness.

Acknowledgement of Funding: Pilot grant, Department of Psychiatry, University of Arizona.

Y-4

Mindfulness-based stress reduction for post-treatment survivors with cancer-related cognitive impairment: results of a randomized controlled pilot trial

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BACKGROUND/PURPOSE: Cancer-related cognitive impairment (CRCI) is a disruptive fatigue-related symptom reported by a substantial number of survivors. Few interventions for CRCI exist. Mindfulness-based stress reduction (MBSR) provides focused attention training and is recommended as an evidence-based treatment for cancer-related fatigue (CRF), yet has not been tested for CRCI. This study represents a secondary analysis of the effects of MBSR on fatigued cancer survivors’ cognitive functioning. **METHODS:** Breast ($n=60$) and colorectal ($n=11$) cancer survivors with CRF (Fatigue Symptom Inventory severity composite ≥ 4) were randomized to an 8-week MBSR or education/support (ES) group. The Attentional Function Index (AFI) and Stroop test were administered to assess cognitive function at baseline (T1), post-intervention (T2), and 6-month follow-up (T3). Two subscales of the Five-Factor Mindfulness Questionnaire were included to measure awareness and nonreactivity. Effects sizes (d , r , and η_p^2) were computed for each comparison. **RESULTS:** MBSR group demonstrated significantly higher AFI scores at T2 ($d=0.83$, $p=0.001$) and T3 ($d=0.55$, $p=0.021$) compared to ES. Group differences in Stroop interference scores were non-significant; however, MBSR had higher Stroop accuracy rates at T2 ($r=0.34$, $p=0.005$) and T3 ($r=0.28$, $p=0.03$) compared to ES. MBSR also increased awareness ($\eta_p^2=0.081$, $p=0.025$) and nonreactivity ($\eta_p^2=0.124$, $p=0.005$) in comparison to ES at T2, effects that were strengthened at T3. **CONCLUSIONS:** MBSR showed a distinct advantage for improving CRCI among fatigued cancer survivors, perhaps working through increased awareness and nonreactivity.

Research Implications: To our knowledge, this is the first study comparing MBSR to an active intervention condition on CRCI among fatigued cancer survivors. Although MBSR has demonstrated preliminary efficacy in the treatment of CRCI, additional studies are needed to further establish the efficacy of MBSR for CRCI.

Practice Implications: MBSR is a promising treatment for CRCI. Clinicians may consider using this evidence as a basis for referring fatigued cancer survivors to MBSR for the treatment of CRCI.

Acknowledgement of Funding: Walther Cancer Foundation (0106-01); Indiana Clinical and Translational Sciences Institute (Grant # TR000163 and # TR000006).

Z-1

Stem cell transplant cancer survivors' associations of personal resilience resources with longitudinal changes in distress and purpose in life

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BACKGROUND/PURPOSE: Cancer survivors treated with stem cell transplant endure persistent survivorship problems that can impede successful reintegration into a full-functioning life. Yet, some transplant survivors experience minimal problems and adjust well during survivorship. Having resilience resources that promote coping during adversity may facilitate successful adjustment through emotional adaptation or cognitive restructuring of the transplant experience. In a sample of transplant survivors with low-to-moderate survivorship problems, we examined whether personal resilience resources predicted longitudinal changes in cancer-specific distress and purpose in life, through changes in depressive symptoms and illness meaning-making. **METHODS:** Transplant survivors ($N=173$) with low-to-moderate survivorship problems completed measures at baseline and 4 months later. Two multiple regression models examined associations of baseline personal resources (self-esteem, mastery, and optimism composite variable) with purpose in life changes (Life Engagement Test) and with cancer-specific distress changes (Impact of Event Scale). Potential mediators were changes in depressive symptoms and four meaning-making items (found/searching for illness reason; found/searching for positive in illness). Bootstrapped analyses tested mediation. **RESULTS:** Baseline personal resources ($\beta=-0.15$, $p=.047$), depressive-symptom changes ($\beta=0.15$, $p=0.048$), and searching-for-illness-reason changes ($\beta=0.23$, $p=.003$) predicted changes in cancer-specific distress. In this model, searching-for-illness-reason changes mediated the association between personal resources and changes in cancer-specific distress (indirect effect: -0.02 , 95% CI: -0.038 , -0.003). In the second model, baseline personal resources ($\beta=0.22$, $p=.001$), depressive-symptom changes ($\beta=-0.33$, $p<0.0001$), and search-for-positive-in-illness changes ($\beta=0.27$, $p=0.003$) predicted purpose

in life changes. There were no significant mediators in this model. **CONCLUSIONS:** Personal resilience resources may help transplant survivors adjust by decreasing cancer-specific distress through decreased searching-for-illness-reason, and increasing purpose in life.

Research Implications: For a majority of transplant survivors, the post-transplant adjustment period is accompanied by quality of life limitations and elevated distress. However, some transplant survivors report adjusting well during the post-transplant period, with low-to-moderate survivorship problems. Having personal resources may predispose survivors with low-to-moderate problems to engage in effective cognitive coping strategies (illness meaning-making) that protect against elevated distress and encourage a positive outlook on life. Future research directions should focus on the longitudinal processes of these personal resilience resources as they unfold from active transplant treatment to adjustment during the years following the intensity of treatment.

Practice Implications: Transplant survivors without personal resilience resources may benefit from supportive care services designed, with guidance from this research, to develop resilience resources for coping with challenges that present during the post-transplant period.

Acknowledgement of Funding: Funding for the study was provided by American Cancer Society Grant#RSGPB-07-285-01-CPPB (PI: Rini). Dr. Campo was supported by a Postdoctoral Fellowship from the National Center on Complementary and Alternative Medicine (T32AT003378-04).

Z-2

Developing a risk prediction model for long-term physical and psychological functioning after hematopoietic stem cell transplantation

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BACKGROUND/PURPOSE: Hematopoietic stem cell transplantation (HSCT) is associated with impaired physical and psychological functioning for some long-term survivors. A risk prediction model would help clinicians estimate their patients' physical and psychological functioning after HSCT and refer to added supportive care when appropriate. The purpose of the present study was to develop risk prediction models for physical and psychological functioning in HSCT survivors. **METHODS:** This was a secondary analysis of data from a randomized controlled trial that included 3–10-year HSCT survivors. Risk predictions for physical and psychological functioning were developed by using backward logistic regression. The models were internally

validated using bootstrapping techniques. Regression coefficients were converted into easy to use risk scores. Finally, the sensitivity, specificity, and positive and negative predictive values of the total risk score were calculated. **RESULTS:** Analyses included 489 survivors, with a mean age of 45.6 years (SD 12.4), 47% female, and mean of 6.1 years (SD 2.0) after transplant. Younger age, higher BMI, no or part time work, more comorbid diseases, autologous transplantation, and chronic graft-versus-host disease predicted impaired physical functioning. Female gender, younger age, higher BMI, not living with a partner, autologous transplantation, and chronic graft-versus-host disease predicted impaired psychological functioning. While both models had predictive value for long-term functioning, accuracy was only moderate. **CONCLUSIONS:** This is the first risk prediction model for physical and psychological functioning in HSCT survivors. It is possible to predict long-term physical and psychological functioning with readily accessible, pretransplant predictors. The accuracy of the risk prediction models can be improved for use in clinical practice, potentially with the addition of other pretransplant functioning factors.

Research Implications: Our prediction model was aimed at HSCT survivors specifically, but risk factors for impaired physical or psychological functioning in long-term survivors are quite similar across various cancer populations, apart from specific disease- or treatment-related characteristics like cGVHD. It might therefore be possible to develop a general prediction model for cancer patients, with addition of disease and treatment characteristics for specific cancer groups. For this, further identification of potential risk factors is necessary.

Practice Implications: A risk prediction model for long-term QOL would help clinicians estimate their patients' physical and psychological functioning after HSCT and focus resources on added supportive care for those most in need.

Acknowledgement of Funding: This work was supported by funding from the National Cancer Institute, R01 CA112631 and R01 CA160684, to the last author (Syrjala) and by travel grants from the EMGO+ Institute for Health and Care Research and the Dutch Cancer Society, to the first author (Braamse).

Z-3

Pre-transplant health-related quality of life factors as predictors of outcomes following hematopoietic cell transplantation: a study from the BMT CTN 0902 trial

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BACKGROUND/PURPOSE: Health-related quality of life (HRQOL) measures predict morbidity and mortality following hematopoietic cell transplantation (HCT). However, previous studies suffer from methodological limitations and few investigate biobehavioral pathways. This multi-center study assessed whether pre-HCT HRQOL measures are predictive of hematopoietic recovery and overall survival. **METHODS:** We analyzed data from the 711 participants in the Blood and Marrow Clinical Trials Network (BMT CTN) 0902, a randomized study of pre-transplant exercise and stress management for recipients of autologous and allogeneic HCT. Because the primary analysis did not demonstrate a significant main effect for exercise or stress management, intervention group data were combined for these analyses. Pre-transplant Cancer and Treatment Distress (CTXD), Pittsburgh Sleep Quality Index (PSQI), and mental and physical component scores (MCS and PCS) of the Short Form-36 Health Survey (SF-36) were evaluated as independent predictors of hematopoietic recovery; PSQI and CTXD were also evaluated as predictors of overall survival (OS). Cox regression model adjusted for relevant clinical covariates. **RESULTS:** Distress, sleep, and mental functioning (MCS) were not significantly associated with time to either neutrophil or platelet engraftment. Physical functioning (PCS) was associated with slower neutrophil engraftment among autologous recipients (HR 0.99, 95% CI 0.97–1.0, $p=.04$). Neither sleep nor distress was associated with survival in autologous or allogeneic recipients. **CONCLUSIONS:** In this heterogeneous cohort of HCT recipients, distress, sleep, and mental and physical health were not predictive of hematopoietic recovery, and distress and sleep were not predictive of overall survival. Additional analyses are being performed to look at other HCT outcomes.

Research Implications: Additional analyses are needed to follow up on these preliminary findings to better understand why distress, sleep, and mental and physical functioning were not associated with outcomes in this population.

Practice Implications: HRQOL assessment tools and target patient populations are important factors when considering the effects of HRQOL on outcomes, although the associations with outcomes may be complex.

Acknowledgement of Funding: National Heart, Lung, and Blood Institute and National Cancer Institute, U10HL069294.

Z-4

Prevalence and predictors of anxiety and depression among allogeneic hematopoietic cell transplant patients

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BACKGROUND/PURPOSE: Hematopoietic cell transplantation (HCT) is associated with a high level of distress; yet, studies investigating anxiety and depression are sparse. The present study investigated the prevalence of anxiety and depression before and after allogeneic HCT and examined predictors of clinical diagnosis. **METHODS:** Allogeneic HCT recipients ($N=133$; $M=52$, 41% female) underwent a diagnostic interview (SCID) for major depressive disorder and generalized anxiety disorder and completed self-report measures of depression (CES-D), anxiety (STAI), and demographics prior to transplant and 3 and 12 months post-transplant. Medical variables were assessed via medical record review. Generalized estimating equation models were used to examine demographic and medical predictors of SCID diagnoses of anxiety and depression. **RESULTS:** At pre-transplant, 3 months, and 12 months, 7%, 5%, and 6% met DSM-IV criteria for depression and 10%, 8%, and 6% met criteria for anxiety. At pre-transplant, 3 months, and 12 months, 22%, 25%, and 32% met the CES-D cut-off for clinically significant depression and 7%, 8%, and 8% met the STAI cut-off for clinically significant anxiety. Rates of depression and anxiety utilizing DSM-IV criteria did not change over time ($p=.54$). Patients who were unmarried, younger, and reported lower household income were more likely to meet criteria for a diagnosis at baseline ($ps \leq .03$); however, the rate of diagnoses in patients with lower household income decreased over time ($p=.04$). **CONCLUSIONS:** Clinically significant emotional distress is a prevalent and persistent problem for allogeneic HCT recipients during the first year following transplant, although most patients do not meet criteria for clinical diagnosis.

Research Implications: Findings add to the current knowledge on emotional distress prior to and following HCT and further highlight the need to address both anxiety and depression, especially for those at greatest risk.

Practice Implications: HCT recipients should be evaluated for clinically significant depression and anxiety prior to transplant and throughout the post-transplant recovery period. This screening may be particularly crucial for vulnerable individuals.

Acknowledgement of Funding: K07 CA138499 (PI: Jim).

AA-1

Examination of construct validity of the brief resilience scale in a mixed cancer group

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BACKGROUND/PURPOSE: In psycho-oncology, personal resilience may represent an important factor in effective coping with a potentially life-threatening disease. The present study investigated the relationship of resilience to psychiatric symptoms and personality traits in a mixed cancer group. Evidence for the construct validity of the six-item Brief Resilience Scale (BRS) is presented. **METHODS:** Patients with Stage I–III cancer of the lung, colon, prostate, or breast ($N=59$; mean age=61 years; $SD=13.8$; 79% female), recruited from a comprehensive cancer center, completed the Patient Health Questionnaire 2 (PHQ-2), Generalized Anxiety Disorder 7 (GAD-7), and the BRS within 75 days of diagnosis (T1); 1 to 30 days post-adjuvant treatment (T2); and 3 months post-adjuvant treatment (T3). The Big Five Inventory (BFI) was completed at T1. Correlational analysis was performed to examine the relationship between resilience, emotional distress, and personality characteristics. **RESULTS:** Data analysis revealed significant inverse correlations between the BRS and PHQ-2 at T1 ($r=-.346$, $p<.007$), T2 ($r=-.656$, $p<.001$), and T3 ($r=-.486$, $p=.001$), and between the BRS and GAD-7 at T1 ($r=-.605$, $p<.001$), T2 ($r=-.704$, $p<.001$), and T3 ($r=-.461$, $p=.003$). Significant correlations were noted between the BRS and BFI subscales of Conscientiousness ($r=.422$, $p=.001$), Agreeableness ($r=.274$, $p=.031$), and Neuroticism ($r=-.627$, $p<.001$). **CONCLUSIONS:** The BRS demonstrated adequate construct validity as a coping measure and shows promise for use in the oncology population. **Research Implications:** These findings suggest support for utilizing the BRS in psycho-oncology translational research, to augment the empirical groundwork for developing resilience-based interventions. **Practice Implications:** The BRS is a feasible measure for assessing resilience in the clinical setting.

Acknowledgement of Funding: None.

AA-2

Symptom burden and unmet needs mediators of quality of life in breast cancer survivors: a structural equation modeling analysis

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BACKGROUND/PURPOSE: While both symptom burden and unmet needs impact quality of life (QoL) in breast cancer survivors (BCS), an appropriate model for describing their relationships has not been determined. The purpose of the present study was to determine whether unmet needs mediated the relationship between symptom burden and QoL in BCS. **METHODS:** 250 breast cancer survivors (mean age: 54.7 ± 8.2 years) completed primary cancer treatment 6 months to 5 years previously and completed the Supportive Care Needs Survey, Memorial Symptom Assessment Scale, and Medical Outcomes Study 12-item Short Form Health Survey version 2.0. **RESULTS:** The direct effect revealed that an increase in symptom burden by 1 SD was significantly associated with a decrease in physical QoL by 0.30 SD ($\beta = -0.30$). The indirect effect showed that an increase in symptom burden by 1 SD was significantly associated with a decrease in physical QoL by 0.27 through increasing unmet needs. Total effects were significant ($\beta = -0.57$), and the model showed a good fit.

The direct effect indicated that an increase in symptom burden by 1 SD was significantly associated with a decrease in mental QoL by 0.54 SD ($\beta = -0.54$). The indirect effect showed that an increase in symptom burden by 1 SD was significantly associated with a decrease in mental QoL by 0.138 through increasing unmet needs. Total effects were significant ($\beta = -0.67$), and the model demonstrated a good fit.

CONCLUSIONS: Our results suggest that some of symptom burden's influence is through unmet needs for help resulting in lower QoL.

Research Implications: This information would establish an important groundwork to support and inform the development of a longitudinal study to examine the complex relationship between symptom burden, unmet needs, and QoL, as well as to develop interventions to support breast cancer survivors' transition and to enhance their QoL.

Practice Implications: This information would provide insight into the influence of unmet needs on symptoms in QoL, which may help raise healthcare professionals' and survivors' awareness of the importance of ongoing symptom assessment and management, and of addressing supportive care needs when developing survivorship care programs.

Acknowledgement of Funding: None.

AA-3

The mediating role of self-compassion in the relationship between adult attachment styles and psychological distress among Oncology patients

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BACKGROUND/PURPOSE: The relationship between adult attachment and psychological well-being is well documented, with research highlighting the impact of attachment style on patient engagement and healthcare outcomes. More recently, the role of self-compassion as a protective mediator in this relationship has been highlighted among community samples. The current study considered the mediating role of self-compassion between attachment and psychological well-being in an Oncology sample. **METHODS:** Oncology ($n=116$) and Psycho-oncology ($n=59$) patients attending the outpatient Oncology clinic in a large Irish hospital (151 female, 23 male, 1 other; 18–70+ years) completed validated self-report measures of adult attachment, self-compassion, and psychological distress. Mediation analyses using macros from Preacher and Hayes (2008) and Hayes and Preacher (2014) were conducted using SPSS. **RESULTS:** Self-compassion significantly mediated the relationship between adult attachment and psychological distress, for both anxious ($t = -4.66$, $p < .01$; effect size = $-.1584$, 95% CI = $-.2316$ to $-.0983$) and avoidant attachment ($t = -4.37$, $p < .01$; effect size = $-.2105$, 95% CI = $-.3117$ to $-.1241$). Following cluster analysis identifying four attachment styles, multi-categorical independent variable mediation analysis indicated that self-compassion significantly mediated fearful ($t = -4.295$, $p < .01$; effect size = $-.6227$, 95% CI = $-.9525$ to $-.3781$) and dismissive ($t = -3.183$, $p < .01$; effect size = $-.4580$, 95% CI = $-.7767$ to $-.2084$) attachment, with psychological distress. **CONCLUSIONS:** Self-compassion was shown to mediate the relationship between adult attachment and psychological distress. The extent of this mediating role was most notable among adults who reported a fearful attachment style. The findings highlight the potential for compassion-focused approaches as a psychological intervention for Oncology patients. The particular benefit of such interventions among fearfully attached individuals warrants further exploration.

Research Implications: The mediating relationship of self-compassion with adult attachment styles and psychological distress is under-researched in an Oncology setting. The current findings therefore provide further evidence for the significant mediating relationship of self-compassion overall and in the context of this particular patient group.

An additional strength, and practice implication, of the research is the methodological rigour. The analytic approaches used in the current research have significant implications for research with attachment styles. The popular ECR-R (Fraley, Waller & Brennan, 2000) was the attachment measure utilised. It measures attachment along a continuum of two orthogonal dimensions, anxious and avoidant. To date, mediation analysis has been used to illustrate that self-compassion significantly mediates the relationship between attachment

from secure to insecure (anxious/avoidant) and psychological distress. However, analysing attachment as a continuous variable does not allow for further exploration, such as whether the role of self-compassion may vary across particular attachment styles (secure/fearful/dismissive/pre-occupied; Bartholomew & Horowitz, 1998). Exploring not only the orthogonal dimensions of anxious and avoidant attachment but using cluster analysis to identify attachment styles, as was done in this research, allows for greater consideration of the relevance of self-compassion among the various clusters (secure, fearful, preoccupied, and dismissive).

To analyse the mediating relationship of self-compassion with the different attachment styles, traditional mediation analysis is not suitable. Multi-categorical mediation analysis is a relatively new analytic approach emerging in the literature (discussion began circa 2012; Iacobucci, 2012; MacKinnon & Cox, 2012). Hayes and Preacher (2014) provide the only tutorial and SPSS macros with which to conduct this analytic method. The use of mediation analysis with multi-categorical variables as was conducted in the current research is a novel approach which will have implications for the examination of similar data sets going forward.

Practice Implications: The research offers insights into the psychological profile of Oncology patients and suggests mechanisms via which the core constructs of attachment style impact upon psychological well-being. In doing so, the research adds significantly to the evidence base regarding adult attachment and self-compassion, while also bringing this research to the Oncology sample. This is particularly relevant for those working in Oncology given the vulnerability of this patient group to psychological distress and the known role of both attachment style and self-compassion as predictors of psychopathology and quality of life (MacBeth & Gumley, 2010; Raque-Bogdan et al., 2011).

Clinically, the research findings offer clinicians a framework which allows for greater understanding of how attachment style influences psychological well-being among Oncology patients. By identifying the mediating role of self-compassion, the findings also point to psychological interventions which may be appropriate. Specifically, compassion-focused interventions are suggested in terms of both buffering against psychological distress among psychologically well patients and as a therapeutic modality where psycho-pathology is a concern. In instances where more attachment-focused interventions may be difficult to implement or require longer therapeutic input (Raque-Bogdan et al., 2011), self-compassion focused individual or group therapies in an Oncology setting where time is more limited may be more feasible. Such interventions provide more expansive cost-benefit for resources, management, clinicians, and patients themselves.

Acknowledgement of Funding: None.

AA-4

Positive and negative life changes and psychological distress in survivors of testicular cancer

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BACKGROUND/PURPOSE: Despite a generally good prognosis, the young age at diagnosis may violate personal goals and beliefs and provoke significant life changes in patients with testicular cancer. **METHODS:** All testicular cancer survivors receiving follow-up care at two specialized outpatient treatment facilities were approached at follow-up visits or via mail. $N=164$ patients (66%) participated. The mean time since diagnosis was 11.6 years ($SD=7.4$). The following standardized validated self-report questionnaires were used: Posttraumatic Growth Inventory (modified version assessing positive and negative changes for each item), Patient-Health-Questionnaire-9, and Generalized-Anxiety-Disorder-Questionnaire-7. **RESULTS:** The majority of survivors (87%) reported one or more positive changes as a result of testicular cancer. The mean number of positive changes was 7.2 (possible range: 0–21; $SD=5.0$). The most frequent positive changes were greater appreciation of life (65%) and changed priorities in life (64%). Negative changes occurred in 37% ($M=1.1$; $SD=2.5$) and were most frequent for decreases in self-reliance (14%) and personal strength (11%). Anxiety of moderate to high severity occurred in 6% ($M=3.3$; $SD=3.2$); depression occurred in 8% ($M=3.6$; $SD=3.6$). Positive life changes were not associated with anxiety ($r=.00$) and depression ($r=-.07$). For negative life changes, high associations emerged for anxiety ($r=.49$, $p<.001$) and depression ($r=.50$, $p<.001$). The intercorrelation between positive and negative changes was low ($r=.12$; $p=.13$). **CONCLUSIONS:** Although positive life changes were common, one third of survivors perceived negative life changes after testicular cancer. A higher number of negative changes may increase the risk for prolonged psychological distress, especially in the absence of accompanying positive changes. **Research Implications:** Results show that a significant number of patients perceive negative changes in life domains that are usually investigated in terms of potential personal growth after cancer, such as feelings of personal strength. A higher number of negative changes is yet not necessarily related to a higher number of positive changes, as shown by their low intercorrelation. Future

longitudinal studies should investigate specific processes that lead to the perception of positive and negative illness-related changes in the course of treatment and survivorship of testicular cancer.

Practice Implications: Early identification of patients that perceive predominantly negative changes may

contribute to prevention of prolonged symptoms of anxiety and depression.

Acknowledgement of Funding: The study was funded by the Donor's Association for the Promotion of Humanities and Sciences in Germany.