Welcome to the 2017 Michigan Cancer Consortium (MCC) Annual Meeting; A Collective Vision: Working Toward Health Equity. The Program Committee is pleased to offer topics on health equity, cancer disparities and work taking place to address inequities in Michigan. This year’s concurrent sessions include topics on cancer genetics, survivorship issues as well as the opportunity to build organizational capacity at a grant writing workshop. You are able to choose a topic that directly applies to your needs.

Our conference goals are to create opportunities to:

◊ **Network** with MCC Members and Partners
◊ **Learn** the effects of poverty on health outcomes within our communities.
◊ **Increase knowledge** of the MCC Priorities and accomplishments toward the Cancer Plan objectives
◊ **Renew** dedication to cancer control efforts in Michigan.

The 2017 MCC Abstract and Poster session has 30 projects and research outcomes to share. Please take some time to view the posters and visit with the authors.

Each year we honor Michigan Cancer Survivors and MCC Members.

◊ **The MCC Inspiration Award** honors a Michigan Resident who is a cancer survivor
◊ **The MCC Champion Award** honors an MCC Member who is a leader in cancer prevention and control
◊ **The Spirit of Collaboration Award** recognizes projects that exemplify one of the core values of the MCC.

We are so glad you could join us and encourage you to take advantage of all that is offered.

*Enjoy your day!*

Robert Chapman, MD  
MCC Co-Chair

Joan Westendorp, MSN, RN  
MCC Co-Chair
<table>
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<td>Continuing Education</td>
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<tr>
<td>Attendee List</td>
<td>58</td>
</tr>
</tbody>
</table>
7:30am  Registration Open
          Heritage Room Hallway

7:30am  Abstract, Poster & Exhibits Setup
          B106/B107

8:30am  Continental Breakfast
          Heritage Room

8:45am  Welcome & Conference Opening
          Heritage Room

9:00am  MCC Inspiration Award

9:15am  Opening Keynote Speaker
          Transition to Success: A Standard of Care to Treat the Social Determinants of Health
          • Marcella Wilson, PhD; Author of Diagnosis Poverty: A New Approach for Understanding and Treating an Epidemic.

10:15am Break and Abstract, Poster & Viewing
         B106/107
         Please take some time to meet with our presenters and learn about cancer control projects in Michigan!

11:00am-12:15pm Concurrent Sessions

A. Health Equity and Disparities in Breast Cancer Genetics
   A169: Large Amphitheater (Henry Center)
   • Lisa Newman, MD, MPH, FACS; Director of the Breast Oncology Program, Henry Ford Health System
   • Taylor Seaton, MS; Clinical Cancer Genetics Epidemiologist, Division of Lifecourse Epidemiology & Genomics, MDHHS

B. A Frank Discussion: Survivorship Ignored Topics
   A170: Large Amphitheater (Henry Center)
   • Molly B. Moravek, MD, MPH; Director Fertility Preservation Program, Michigan Medicine, University of Michigan
   • Lisa Astalos Chism, DNP, APRM, NCMP, FAANP; Clinical Director, Women's Wellness Clinic at Karmanos Cancer Institute
   • Carlos O. Weiss, MD; Mercy Health Advanced Care Coordination Program (ACCP)

C. Grant Writing 101
   B120: Small Amphitheater (Henry Center)
   • Linda Chamberlain, PhD; Director Technology Commercialization Center at Grand Valley State University

12:15pm  Lunch: Heritage Room

1:15pm  MCC Awards Presentation
         Heritage Room
         • Spirit of Collaboration Awards Winner and Honorable Mentions
         • MCC Champion Award

1:30pm  Update on MCC Cancer Plan Dashboards, Priority Accomplishments and Next Steps

1:45pm  Meeting Adjourned

Board of Directors Meeting
Please join us in the University Club Ballroom immediately following the Annual Meeting for the November MCC Board of Directors Meeting.
Heritage Room

University Club Diagram

Keynote Speaker & Lunch

Poster Session

Registration

To Henry Center and Breakout Rooms B120, A169 & A170

Henry Center Diagram

Breakout Session Rooms B120, A169 & A179
2017 Award Winner
Jessica Dilts Cash

No one should face cancer alone.
Courageous, determined, resolute, faithful;
these are the faces of cancer survivors.
Dr. Marcella Wilson has over 30 years of experience in healthcare and social work services. Her extensive experience includes not-for-profit management, managed care systems, behavioral health, criminal justice and public sector programming. Dr. Wilson, a University of Michigan alumnus, holds degrees in psychology, sociology, a Master’s degree in Social Work and a Ph.D. in Health and Higher Education Administration. Dr. Wilson focuses on the development of comprehensive systems of care that address poverty, social injustice and health care inequities. In her new book, Diagnosis: Poverty, she calls for nothing less than a scalable, sustainable, national standard of care to treat the condition of poverty that requires verifiable and accountable coordination among human services, healthcare, education, and government programs. This new paradigm is achievable based on current resources and expenditures. Dr. Wilson’s standard-of-care model, Transition To Success, is currently being integrated and evaluated across the country, serving thousands living in poverty and establishing initial, statistically significant outcomes. Her work has been showcased by the CBS Evening News, The New York Times, and recognized by the Clinton Global Initiative.
“Like slavery and apartheid, poverty is not natural. It is man-made, and it can be overcome and eradicated by the actions of human beings.”

-Nelson Mandela

Marcella Wilson, Ph.D.
President & Founder
Transition To Success® LLC
Poverty and Mental Health

- The lower the socio-economic status of an individual, the higher is his or her risk of mental illness (Hudson 2005).
- The conditions of poverty can cause mental health disorders and alleviating poverty can have positive effects on children’s mental health (Costello et al 2003).
- Higher unemployment, poverty and lack of housing affordability in poor communities account for more than half of the community differences in psychiatric hospitalizations. (Hudson 2005)
- Living in poverty has the most measurable effect on the rates of mental illness. People in the lowest socioeconomic status are 2 to 3 times more likely than those in the highest strata to have a mental disorder (US Surgeon General 1999).
- One study found that low economic status populations have a higher prevalence of one or more psychiatric disorders (21% versus 28%), mood disorders (13% versus 10%), anxiety disorders (38% versus 11%), probable alcohol abuse (17% versus 7%), and eating disorders (10% versus 7%) (Makuch 2003).

Health Disparities for those living in poverty

Poverty status is based on Gallup’s best estimate of those in poverty according to the U.S. Census Bureau’s 2011 thresholds.

<table>
<thead>
<tr>
<th>Percentage with Disease</th>
<th>Percentage with Disease</th>
<th>Difference (pct. pts)</th>
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</thead>
<tbody>
<tr>
<td>In Poverty</td>
<td>Not in Poverty</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>30.9</td>
<td>15.8</td>
</tr>
<tr>
<td>Asthma</td>
<td>17.1</td>
<td>11.0</td>
</tr>
<tr>
<td>Obesity</td>
<td>31.8</td>
<td>26.0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>14.8</td>
<td>10.1</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>31.8</td>
<td>29.1</td>
</tr>
<tr>
<td>Heart attack</td>
<td>5.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Cancer</td>
<td>6.3</td>
<td>7.1</td>
</tr>
<tr>
<td>High cholesterol</td>
<td>23.0</td>
<td>26.0</td>
</tr>
</tbody>
</table>

(Gallup Healthways Well-Being Index, 2012)
Transition To Success®
Treating the Condition of Poverty
With A Client Centered Community Based Continuum of Care

Clients/Custoners:
- At Risk Youth
- Employee Wellness
- Underemployed
- Homeless
- Medicaid
- Older Adults
- TBI
- Citizens
- Unemployed
- Veterans
- Working Poor
- K-12

TTS Trained Organizations/Practitioners:
- 2-1-1 Community Based – info and referral
- Education
- Faith Based
- Government
- Healthcare
- Human Services

Map of My Dreams:
- CARE® Management
- Financial Literacy
- Mentoring
- Volunteerism

2-1-1 Information & Referral to Funded:
- Community
- Education
- Faith Based
- Government
- Healthcare
- Human Services

Living Wage = Skilled Employment Training
Literacy = Unskilled Employment Needs

TTS Independent Evaluation Results
Matrix Head Start: SSM Domains with a Significant Change in Mean Scores, Winter 2014 to Spring 2015

TTS Independent Evaluation Results
Matrix Head Start: SSM Domains with a Significant Change in Mean Scores Winter 2014 to Spring 2015

* CARE – Coordinating All Resources Effectively

© 2017 Transition To Success, LLC

TTS Trained Organizations/Practitioners:
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TTS Independent Evaluation Results
Matrix Head Start: SSM Domains with a Significant Change in Mean Scores Winter 2014 to Spring 2015

* Self-sufficiency Matrix

Page 7
Understanding and Treating the Condition of Poverty

Transition To Success: A uniform system of care with continuous quality improvement (CQI)

Poverty-specific Research
Evidence-based best practices
Transition To Success
Standards of Care to Treat Poverty
Implementation

Data Collection & Evaluation

Multi-site

Site / Pilot

Healthcare Social Determinant / Behavioral Health System
For Screening, Assessment and Referral Process *

Designated Staff completes the TTS® Patient Assessment Tool for Social Determinants and/or Behavioral Health Assessments **

Appropriate staff completes assessments

Does patient identify any need for resources &/or meet needs criteria for full assessment

No

Nonreferral needed

Yes

Physician or designated staff ask: "Would you like help coordinating all of the services you are eligible for?"

Yes

Designated Staff conduct a Multidisciplinary Interprofessional Assessment *

No

Nonreferral needed

Designated Staff refers to community partner trained in TTS® to conduct the full 19 domain assessment and/or establish the TTS Needs CARE Plan **

Schedule follow-up visit

Designated Staff refers to community partner trained in TTS® to conduct the full 19 domain assessment and/or establish the TTS Needs CARE Plan **

Emergency room staff or designated office staff or mobile case manager

* Medicaid/Medicare Private Insurance & Providers
** CMS Approved Behavioral Health/Substance Abuse Billable forever with Sophie Trusting

TTS Independent Evaluation Results

FSDWC: SSM Domains with a Significant Change in Mean Scores from Pretest (January 2013 through February 2014) to Posttest (November 2013 through April 2014)

© 2017 Transition To Success, LLC

The transitions to success project is a development of the Institute for Social Research at the University of Michigan. It is funded through the W.K. Kellogg Foundation.
M.I.N.I. Behavioral Health Solutions Suite

M.I.N.I. SCREEN
- Preliminary screen to ACA depression requirements and establish medical need for further behavioral/health diagnosis.
  - M.I.N.I. Screen (27 DSM Disorders)
  - M.I.N.I. Kid Screen (24 DSM Disorders)
  - Social Determinant Screening

M.I.N.I. DIAGNOSTIC INTERVIEW
- The M.I.N.I. DSM-5 and ICD-10:
  - Created in 1990, Validated in 1996 (89% accuracy). Takes 5-15 minutes to complete.
  - M.I.N.I. Kid last validated in 2010.
  - Versions used by Dept. of Defense for American warfighters since 1990.
  - Most utilized comprehensive diagnostic assessment in the world (NIH).
  - Used or referenced in over 10,000 clinical studies.
  - Social Determinant Assessment

M.I.N.I. OUTCOME TRACKER
- The M.I.N.I. Symptom Disorder Tracker measures clinically meaningful change (CMC-M) outcomes over time.
  - Sheehan Disability Scale (SDS)
  - Sheehan-Homicidally Tracking Scale (SHTS)

M.I.N.I. & M.I.N.I. Kid - Screened DSM-5 Disorders
- Adjustment Disorders
- Attention Deficit Disorder (ADD)
- Agoraphobia
- Alcohol Use Disorder
- Anorexia Nervosa
- Antisocial Personality Disorder
- Attention Deficit/Hyperactivity Disorder (ADHD)
- Bulimia Nervosa
- Conduct Disorder
- Generalized Anxiety Disorder
- (Hypo) Manic Episode (bipolar)
- Major Depressive Episode
- Obsessive Compulsive Disorder
- Oppositional Defiant Disorder
- Panic Disorder
- Pervasive Developmental Disorder
- Posttraumatic Stress Disorder
- Psychotic Disorders
- Separation Anxiety Disorder
- Social Phobia (Social Anxiety Disorder)
- Specific Phobia
- Substance Use Disorder
- Suicidality
- Tic Disorders (Tourette’s, etc.)

Diagnostic Accuracy
- Statistics from the National Institutes of Health show:
  - Two-thirds of all mental health diagnoses and treatments come from the primary care doctor and pediatric primary care doctors.
  - Yet, the study shows, they struggle to get it right with misdiagnosis rates reaching:
    - 97.8% Social Anxiety Disorder
    - 92.7% Bipolar Disorder
    - 85.8% Panic Disorder
    - 65.9% Major Depressive Disorder
    - 71.0% Generalized Anxiety Disorder

NIH published diagnosis rate for the M.I.N.I. is 89%.
In any given year, there are approximately 34 Million American adults with co-morbid mental and medical conditions.

Coordinating Care Can:
• Improve Clinical Outcomes
• Increase Quality of Care
• Reduce Costs
• Boost Consumer Satisfaction

Transition To Success® (TTS):
A National Standard of Care To Treat the Condition of Poverty
• A Clinton Global Initiative
• Statistically Significant Independent Evaluation Results
• Over 80 Organizations Involved
• Over 800 trained nationwide
• Pilots:
  • Memphis TN – Assisi Foundation
  • New Orleans – Catholic Charities
  • Hawaii (Kauai & Oahu) – Goodwill Industries / Child & Family Services
  • Detroit MI – Third New Hope, Funded by St. John Health
  • Michigan Department of Health Human Services – Pathways To Potential
  • Catholic Charities of Northern Kansas
• Organizational Partners
  • Melagro Technology (CMS Approved) – Behavioral Health and Substance Abuse Screening
  • River Star Technology – 211 Application – Q1 2017
• “Diagnosis: Poverty - A new approach for understanding and treating an epidemic” – Book and Curriculums

Thank you!
“... find your dream. It’s the pursuit of the dream that heals you.”

Billy Mills’ Father
Oglala Lakota Sioux

Marcella Wilson, Ph.D.
MWilson@TTS-LLC.org
www.TransitionToSuccess.org
(313) 580-2672

Check out my new book:
Diagnosis: Poverty
A new approach for understanding and treating an epidemic:
www.DiagnosisPoverty.com
ACCESS
Hiam Hamade
hhamade@accesscommunity.org
2 Posters
*Breast Cancer in Arab American Women: Knowledge Levels & Screening Barriers*
*Colorectal Cancer in Arab Americans: Knowledge Levels and Screening Barriers*

ACCESS Community Health & Research Center
Ghazal Almradi
ghazal.almradi@ascension.org
*St. John Providence Cancer Genetics Program Experience with Genetic Testing for Hereditary Cancer Syndromes*

Beaumont Health
Megan Kilpatrick
megan.kilpatrick@beaumont.org
*Supportive Care Art Series for Oncology Patients*

Beaumont Health
Ryan Wood
ryan.wood@beaumont.org
*Rehabilitation Care and Quality of Life Assessment Through the Adult Multidisciplinary Cancer Survivorship Clinic for Colorectal, Gynecology and Genitourinary Cancer Survivors*

Beaumont, Troy
Lisa D'Andrea
Lisa.D'Andrea@Beaumont.org
*Breast Cancer Survivorship: Addressing Post Treatment Concerns with Referrals, Resources and Support*

District Health Department #10
Karen Ripke
kripke@dhd10.org
*Tobacco Reduction Initiatives at DHD#10*

Division of Vital Record, MDHHS
Mei You
youm@michigan.gov
*Building Linkage Among Michigan Population Registration Systems*

Karmanos Cancer Institute, Population Studies and Disparities Research Program
Knoll Larkin
larkink@karmanos.org
*Detroit HealthLink for Equity in Cancer Care*

Michigan Department of Health and Human Services
Karen Brown
brownk34@michigan.gov
*Michigan Tobacco Quitline-Cancer Survivorship Partnership*
Michigan Department of Health and Human Services
Amber Daniels
danielsa3@michigan.gov

*Prescription Drug Overdose Prevention Project*

Michigan Department of Health and Human Services
Susan Deming
demings@michigan.gov

2 Posters

*Linkages: Oral Cancer-HPV-Tobacco-Health Disparities*

*Oral Cancer and the HPV Connection*

Michigan Department of Health and Human Services
Ann Garvin
garvin@michigan.gov

"The Fact that I have not heard of it or even come across it once…": A look at communication around HPV vaccination to Latino residents living in rural Michigan

Michigan Department of Health and Human Services
Bethany Hollender
HollenderB@michigan.gov

*Awareness, collaboration, and action: reducing disparities in breast and cervical cancer screening in gay, lesbian, bisexual, and transgender residents of Michigan*

Michigan Department of Health and Human Services
Angela McFall
mcfalla@michigan.gov

*Lung Cancer Screening Awareness Campaign in Rural Michigan*

Michigan Department of Health and Human Services
Audra Putt
putta@michigan.gov

2 Posters

*Collaborative Efforts to Reduce Barriers to Cancer Clinical Trial Participation*

*Improving Quality of Life with Survivorship Care Plan Resource Documents*

Michigan Department of Health and Human Services
Taylor Seaton
seaton1@michigan.gov

*Public Health Surveillance of Racial Disparities in Hereditary Cancer Counseling and Testing Using Clinical Cancer Genetics Data*

Michigan Department of Health and Human Services
Debbie Webster
websterd1@michigan.gov

2 Posters

*Identifying the Needs of Cancer Survivors in Michigan*

*Patient Navigation Promotion and Support Across the Cancer Continuum*
Michigan Radiological Society, Ascension Health
Paul Chuba
paul.chuba@ascension.org
*Changing Implant Technique and Survival in Intermediate to High Risk Prostate Cancer*

National Kidney Foundation of Michigan
Samantha Raad
sraad@nkfm.org
*Cancer Control Community Impact Project to Improve the Quality of Life for Cancer Survivors and Caregivers*

University of Michigan
Kyla Cross
kycross@umich.edu
*Impact of physical activity and spontaneous arm use on QoL in BCRL patients*

University of Michigan
Lynn McCain
lmccain@med.umich.edu
*Identifying Patients at Risk for Hereditary Cancers*

University of Michigan
Jaclyn Pontell
jpontell@umich.edu
*Balance deficits in patients with mild breast cancer-related lymphedema*

University of Michigan
Serena Saake
sjsaake@umich.edu
*The use of body worn sensor technology to monitor arm use in patients with breast cancer-related lymphedema*

West Michigan Cancer Center and Institute for Blood Disorders
Rebecca Jones, ANP-BC, MSN, MPH
bjones@wmcc.org
*Improved exercise capacity and quality of life in cancer survivors after completion of a survivorship focused exercise program*
# 2017 Peer-Reviewed Abstracts

<table>
<thead>
<tr>
<th>Abstract Title</th>
<th>Author(s)</th>
<th>Corresponding Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telehealth Technology Reaches Homeless with Cancer Risk Reduction Education</td>
<td>Loril Garrett, MS, BSN, RN, OCN, CMOM, Geralyn Roobol, LMSW, RN, BS, CMAC, Judy L. Smith, MD, MS, CPE, FACS, Susan Thomas, RN, BS</td>
<td>Loril Garrett, MS, BSN, RN, OCN, CMOM, Clinical Manager, Multi-Specialty Teams, Spectrum Health, Grand Rapids, MI (ph: 616-486-5578; e-mail: <a href="mailto:loril.garrett@spectrumhealth.org">loril.garrett@spectrumhealth.org</a>)</td>
</tr>
<tr>
<td>Implementation of Single Funnel Access for Lung Cancer Screening at Spectrum Health</td>
<td>Marcey Bowhuis, RN, BSN, PCCN, Marissa Endres, MA, Loril Garrett, MS, BSN, RN, OCN, CMOM, Courtney Lane DNP, NP-BC, Geralyn Roobol, LMSW, RN, BS, CMAC, Lisa L. Russo, Judy L. Smith, MD, MS, CPE, FACS, Glenn M. VanOtteren, MD, FCCP</td>
<td>Loril Garrett, MS, BSN, RN, OCN, CMOM, Clinical Manager, Multi-Specialty Teams, Spectrum Health, Grand Rapids, MI (ph: 616-486-5578; e-mail: <a href="mailto:loril.garrett@spectrumhealth.org">loril.garrett@spectrumhealth.org</a>)</td>
</tr>
<tr>
<td>Partnering Around Cancer Clinical Trials (PACCT): Preliminary Report of an Intervention to Improve Patient-Physician Communication and Clinical Trial Enrollment of Black &amp; White Men with Prostate Cancer</td>
<td>Lauren M. Hamel, PhD, Nicole Senft, PhD, Louis A. Penner, PhD, Elisabeth Heath, MD, Dina Lansey, MSN, RN, Michael Carducci, MD, Terrance L. Albrecht, PhD, Ellen Barton, PhD, Mark A. Manning, PhD, Tanina Foster, PhD, Mark Wojda, MA, Susan Eggly, PhD</td>
<td>Lauren M. Hamel, PhD, Assistant Professor, Department of Oncology, Communication and Behavioral Oncology, Population Studies and Disparities Research Program, Wayne State University School of Medicine/Barbara Ann Karmanos Cancer Institute, Detroit, MI (ph: 586-863-3884; e-mail: <a href="mailto:hamell@karmanos.org">hamell@karmanos.org</a>)</td>
</tr>
<tr>
<td>Evaluations of the Effectiveness of an Online, Evidence-Based Course on Prostate Cancer Survivorship Care for Primary Care Providers</td>
<td>Jacquelyn Keen, MPH Candidate, BS, Yvanna Marlin-Guanga, MPH Candidate, BA, Jinping Xu, MD, MS</td>
<td>Jinping Xu, MD, MS, Department of Family Medicine and Public Health Sciences, Wayne State University School of Medicine (ph: 313-577-0244; e-mail: <a href="mailto:jxu@med.wayne.edu">jxu@med.wayne.edu</a>)</td>
</tr>
</tbody>
</table>

These peer-reviewed abstracts will be published in full in the *Journal of Proceedings of the 2017 Michigan Cancer Consortium Annual Meeting*. 
African-American women develop and die from breast cancer at higher rates than white women. The reasons are multifactorial, but genetics play a significant part. This session will explore the prevalence and genetics of Triple-Negative breast cancer. Barriers to genetic counseling and testing of minorities will be discussed, as well as current state-level public health efforts underway to increase referrals and testing.
CDC Health Care Provider Education
Learn how to help young women lower their risk for early breast cancer.

Bring Your Brave link:
https://www.cdc.gov/cancer/breast/young_women/bringyourbrave/index.htm

The Bring Your Brave campaign provides information about breast cancer to women younger than age 45 by sharing real stories about young women whose lives have been affected by breast cancer.

Cancer is a disease in which cells in the body grow out of control. When cancer starts in the breast, it is called breast cancer. Except for skin cancer, breast cancer is the most common cancer in American women.

Most breast cancers are found in women who are 50 and older, but breast cancer also affects younger women. About 11% of all new cases of breast cancer in the United States are found in women younger than 45 years of age. While breast cancer diagnosis and treatment are difficult for women of any age, younger women may find this experience overwhelming.
This session will be a frank discussion about cancer survivorship across the lifespan. The panel will discuss topics that are important for providers when working with survivors. Topics addressed will include fertility, sexuality and aging.
Fertility Preservation for Patients With Cancer: American Society of Clinical Oncology Clinical Practice Guideline Update


ABSTRACT

Purpose
To update guidance for health care providers about fertility preservation for adults and children with cancer.

Methods
A systematic review of the literature published from March 2006 through January 2013 was completed using MEDLINE and the Cochrane Collaboration Library. An Update Panel reviewed the evidence and updated the recommendation language.

Results
There were 222 new publications that met inclusion criteria. A majority were observational studies, cohort studies, and case series or reports, with few randomized clinical trials. After review of the new evidence, the Update Panel concluded that no major, substantive revisions to the 2006 American Society of Clinical Oncology recommendations were warranted, but clarifications were added.

Recommendations
As part of education and informed consent before cancer therapy, health care providers (including medical oncologists, radiation oncologists, gynecologic oncologists, urologists, hematologists, pediatric oncologists, and surgeons) should address the possibility of infertility with patients treated during their reproductive years (or with parents or guardians of children) and be prepared to discuss fertility preservation options and/or to refer all potential patients to appropriate reproductive specialists. Although patients may be focused initially on their cancer diagnosis, the Update Panel encourages providers to advise patients regarding potential threats to fertility as early as possible in the treatment process so as to allow for the widest array of options for fertility preservation. The discussion should be documented. Sperm and embryo cryopreservation as well as oocyte cryopreservation are considered standard practice and are widely available. Other fertility preservation methods should be considered investigational and should be performed by providers with the necessary expertise.

J Clin Oncol 31:2500-2510. © 2013 by American Society of Clinical Oncology

INTRODUCTION

In 2006, the American Society of Clinical Oncology (ASCO) published a clinical practice guideline on fertility preservation for adults and children with cancer. ASCO guidelines are updated periodically by a subset of the original Expert Panel. In October 2012, the Update Panel reviewed the results of a systematic review of the new literature and determined that although the recommendations remained the same (with the exception of adding oocyte cryopreservation as a standard practice, whereas in the previous guideline, it was still considered experimental), some information and tables needed to be updated. In terms of who is responsible for discussing fertility preservation, the original language used by ASCO has been revised: The word “oncologist” was replaced with “health care provider” to include medical oncologists, radiation oncologists, gynecologic oncologists, urologists, hematologists, pediatric oncologists, and surgeons, as well as nurses, social workers, psychologists, and other nonphysician providers.

GUIDELINE QUESTIONS

This clinical practice guideline addresses four overarching clinical questions: (1) Are patients with cancer interested in interventions to preserve fertility?
Fertility Preservation for Patients With Cancer: American Society of Clinical Oncology Clinical Practice Guideline Update

**Intervention**
- Discuss the risk of infertility and fertility preservation options with patients with cancer anticipating treatment

**Target Audience**
- Medical oncologists, radiation oncologists, gynecologic oncologists, urologists, hematologists, pediatric oncologists, and surgeons, as well as nurses, social workers, psychologists, and other nonphysician providers

**Key Recommendations**
- Discuss fertility preservation with all patients of reproductive age (and with parents or guardians of children and adolescents) if infertility is a potential risk of therapy
- Refer patients who express an interest in fertility preservation (and patients who are ambivalent) to reproductive specialists
- Address fertility preservation as early as possible, before treatment starts
- Document fertility preservation discussions in the medical record
- Answer basic questions about whether fertility preservation may have an impact on successful cancer treatment
- Refer patients to psychosocial providers if they experience distress about potential infertility
- Encourage patients to participate in registries and clinical studies

**Adult Males**
- Present sperm cryopreservation (sperm banking) as the only established fertility preservation method
- Do not recommend hormonal therapy in men; it is not successful in preserving fertility
- Inform patients that other methods (eg, testicular tissue cryopreservation, which does not require sexual maturity, for the purpose of future reimplantation or grafting of human testicular tissue) are experimental
- Advise men of a potentially higher risk of genetic damage in sperm collected after initiation of chemotherapy

**Adult Females**
- Present both embryo and oocyte cryopreservation as established fertility preservation methods
- Discuss the option of ovarian transposition (oophoropexy) when pelvic radiation therapy is performed as cancer treatment
- Inform patients of conservative gynecologic surgery and radiation therapy options
- Inform patients that there is insufficient evidence regarding the effectiveness of ovarian suppression (gonadotropin-releasing hormone analogs) as a fertility preservation method, and these agents should not be relied on to preserve fertility
- Inform patients that other methods (eg, ovarian tissue cryopreservation, which does not require sexual maturity, for the purpose of future transplantation) are still experimental

**Children**
- Use established methods of fertility preservation (sperm cryopreservation and oocyte cryopreservation) for postpubertal minor children, with patient assent, if appropriate, and parent or guardian consent
- Present information on additional methods that are available for children but are still investigational
- Refer for experimental protocols when available

**Methods**
- A comprehensive systematic review of the literature was conducted, and an Update Panel was convened to review the evidence and guideline recommendations

**Additional Information**

Data Supplements (including evidence tables) and clinical tools and resources can be found at http://www.asco.org/guidelines/fertility.
(2) What is the quality of evidence supporting current and forthcoming options for preservation of fertility in males? (3) What is the quality of evidence supporting current and forthcoming options for preservation of fertility in females? (4) What is the role of the oncologist in advising patients about fertility preservation options? Special considerations addressing the fertility needs of children with cancer are also addressed.

RECOMMENDATIONS, CLINICAL TOOLS, AND RESOURCES

Table 1 provides the updated guideline recommendations. Clinical tools and resources, including links to related articles published in Journal of Oncology Practice and key Web sites, and Data Supplements are available at http://www.asco.org/guidelines/fertility, and a patient guide is available at http://www.cancer.net.

METHODS

The Update Panel included academic and community practitioners, in the fields of adult and pediatric oncology, obstetrics-gynecology, reproductive endocrinology and infertility, health services research, and psychosocial oncology, as well as a patient advocate (Appendix Table A1, online only). The Update Panel completed a review and analysis of evidence (Data Supplements 1 and 2) published between March 2006 and January 2013 to determine whether the recommendations needed to be updated. The Update Panel drafted the guideline manuscript and submitted it for review. The ASCO Clinical Practice Guideline Committee then reviewed and approved the Updated Guideline.

Details of the literature search strategy are provided in Data Supplement 3. In brief, articles were selected for inclusion in the systematic review of the evidence if they met the following criteria: (1) The study discussed a fertility intervention and reported primary data, and (2) the study population consisted of patients with cancer scheduled for or undergoing cancer treatments that threaten fertility. Articles were excluded from further consideration if they did not report specifically on a fertility intervention and did not report primary data. However, because of the limited nature of the data in many areas, the Update Panel made an a priori decision to also retain high-quality reviews or background articles. A QUOROM diagram that reports the results of the literature search is available in Data Supplement 4.

Guideline Policy

The practice guideline is not intended to substitute for the independent professional judgment of the treating physician. Practice guidelines do not account for individual variation among patients and may not reflect the most recent evidence. This guideline does not recommend any particular product or course of medical treatment. Use of the clinical practice guideline is voluntary.

Guideline and Conflicts of Interest

The Update Panel was assembled in accordance with the ASCO Conflicts of Interest Management Procedures for Clinical Practice Guidelines (Procedures, summarized at http://www.asco.org/guidelinescoi). Members of the Update Panel completed a disclosure form, which requires disclosure of financial and other interests that are relevant to the subject matter of the guideline, including relationships with commercial entities that are reasonably likely to experience direct regulatory or commercial impact as the result of promulgation of the guideline. Categories for disclosure include employment relationships, consulting arrangements, stock ownership, honoraria, research funding, and expert testimony. In accordance with the Procedures, the majority of the members of the Update Panel did not disclose any such relationships.

GUIDELINE RECOMMENDATIONS

After review and analysis of the evidence published since the original guideline appeared in Journal of Clinical Oncology in 2006, the Update Panel concluded that new evidence was not compelling enough to warrant substantive changes to any of the 2006 guideline recommendations. There were minor but significant changes worthy of attention; however, they did not necessitate a major revision of the guideline. Table 1 provides a summary of the 2013 guideline recommendations.

Literature Search Results

There were 18 new randomized controlled trials,2–20 six systematic reviews, meta-analyses, or previous guidelines,21–26 and dozens of narrative reviews, case series and case studies, and editorials. Evidence tables are presented in Data Supplements 1 and 2.

Limitations of the Literature and Future Research

Review of the fertility preservation literature revealed a paucity of large and/or randomized studies. Most data came from cohort studies, case series, small nonrandomized clinical trials, or case reports. Fertility preservation methods are still applied relatively infrequently in patients with cancer, limiting greater knowledge about the success and effects of different interventions and the long-term health of offspring. Insufficient attention is paid to the potential positive and negative effects, both physical and psychological, of fertility preservation. There is a need for research about decision making regarding the future use of cryopreserved tissue and posthumous reproduction.

Although there is current evidence that indicates a lack of effectiveness of hormonal suppression in fertility preservation, there is a need for a decisive study in which a large number of patients undergo follow-up involving sensitive ovarian reserve markers such as anti-Müllerian hormone and antral follicle counts as well as, if feasible, ovarian follicle counts assessed by histologic analysis of ovaries or by xenograft models with and without gonadotropin-releasing hormone agonist and antagonist (GnRHa) treatment during chemotherapy. The penultimate study should also have sufficient power and follow-up to compare pregnancy outcomes. Thus, the Update Panel encourages participation in clinical trials that meet these criteria as long as the patients also consider alternative and effective methods of fertility preservation.

In addition, little is known about the emotional impact of infertility or the use of fertility preservation options for people with cancer in ethnically, racially, or socioeconomically diverse groups, who may face even greater barriers to fertility preservation before treatment.

The Update Panel encourages additional well-designed studies evaluating methods of fertility preservation in people with cancer to help answer these questions. Research is also needed on the comparative effectiveness of different modes of fertility preservation. However, the Panel also acknowledges that the traditional gold standard of randomized, controlled, and blinded therapeutic studies may not be practical is in this area. ASCO believes that cancer clinical trials are vital to inform medical decisions and improve cancer care, and that all patients should have the opportunity to participate.

UPDATE

This guideline update provides a brief review of key new studies under each clinical question addressing fertility preservation in adults and
3. What is the quality of evidence supporting current and forthcoming options for preservation of fertility in females?

<table>
<thead>
<tr>
<th>Clinical Question</th>
<th>Recommendation</th>
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<tr>
<td>People with cancer are interested in discussing fertility preservation. Health care providers caring for adult and pediatric patients with cancer (including medical oncologists, radiation oncologists, gynecologic oncologists, urologists, hematologists, pediatric oncologists, surgeons, and others) should address the possibility of infertility as early as possible before treatment starts.</td>
<td>1.1</td>
</tr>
<tr>
<td>Health care providers should refer patients who express an interest in fertility preservation (and patients who are ambivalent) to reproductive specialists.</td>
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</tr>
<tr>
<td>Fertility preservation is often possible, but to preserve the full range of options, fertility preservation approaches should be discussed as early as possible, before treatment starts. The discussion can ultimately reduce distress and improve quality of life. Another discussion and/or referral may be necessary when the patient returns for follow-up if pregnancy is being considered. The discussions should be documented in the medical record.</td>
<td>1.3</td>
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2.3 Other methods to preserve male fertility: Other methods, such as testicular tissue cryopreservation and reimplantation or grafting of human testicular tissue, should be performed only as part of clinical trials or approved experimental protocols.

2.4 Postchemotherapy: Men should be advised of a potentially higher risk of genetic damage in sperm collected after initiation of therapy. It is strongly recommended that sperm be collected before initiation of treatment because the quality of the sample and sperm DNA integrity may be compromised after a single treatment session. Although sperm counts and quality of sperm may be diminished even before initiation of therapy, and even if there may be a need to initiate chemotherapy quickly such that there may be limited time to obtain optimal numbers of ejaculate specimens, these concerns should not dissuade patients from banking sperm. Intracytoplasmic sperm injection allows the future use of a very limited amount of sperm; thus, even in these compromised scenarios, fertility may still be preserved.

3. Embryo cryopreservation: Embryo cryopreservation is an established fertility preservation method, and it has routinely been used for storing surplus embryos after in vitro fertilization.

3.2 Cryopreservation of unfertilized oocytes: Cryopreservation of unfertilized oocytes is an option, particularly for patients who do not have a male partner, do not wish to use donor sperm, or have religious or ethical objections to embryo freezing.

Oocyte cryopreservation should be performed in centers with the necessary expertise. As of October 2012, the American Society for Reproductive Medicine no longer deems this procedure experimental. More flexible ovarian stimulation protocols for oocyte collection are now available. Timing of this procedure no longer depends on the menstrual cycle in most cases, and stimulation can be initiated with less delay compared with old protocols. Thus, oocyte harvesting for the purpose of oocyte or embryo cryopreservation is now possible on a cycle day-independent schedule.

3.3 Ovarian transposition: Ovarian transposition (oophoropexy) can be offered when pelvic irradiation is performed as cancer treatment. However, because of radiation scatter, oocytes are not always protected, and patients should be aware that this technique is not always successful. Because of the risk of remigration of the ovaries, this procedure should be performed as close to the time of radiation treatment as possible.

3.4 Conservative gynecologic surgery: It has been suggested that radical trachelectomy (surgical removal of the uterine cervix) should be restricted to stage IA2 to IB cervical cancer with diameter < 2 cm and invasion < 10 mm. In the treatment of other gynecologic malignancies, interventions to spare fertility have generally centered on doing less radical surgery with the intent of sparing the reproductive organs as much as possible. Ovarian cystectomy can be performed for early-stage ovarian cancer.

3.5 Ovarian suppression: Currently, there is insufficient evidence regarding the effectiveness of GnRHa and other means of ovarian suppression in fertility preservation. GnRHa should not be relied upon as a fertility preservation method. However, GnRHa may have other medical benefits such as a reduction of vaginal bleeding when patients have low platelet counts as a result of chemotherapy. This benefit must be weighed against other possible risks such as bone loss, hot flashes, and potential interference with response to chemotherapy in estrogen-sensitive cancers. Women interested in this method should participate in clinical trials, because current data do not support it. In a true emergency or rare or extreme circumstances where proven options are not available, providers may consider GnRHa an option, preferably as part of a clinical trial.

3.6 Ovarian tissue cryopreservation and transplantation: Ovarian tissue cryopreservation and transplantation for the purpose of future transplantation does not require ovarian stimulation or sexual maturity and hence may be the only method available in children. It is considered experimental and should be performed only in centers with the necessary expertise, under IRB-approved protocols that include follow-up for recurrent cancer. A theoretic concern with reimplanting ovarian tissue is the potential for reintroducing cancer cells depending on the type and stage of cancer, although so far there have been no reports of cancer recurrence.

3.7 Other considerations: Of special concern in estrogen-sensitive breast and gynecologic malignancies is the possibility that fertility preservation interventions (e.g., ovarian stimulation regimens that increase estrogen levels) and/or subsequent pregnancy may increase the risk of cancer recurrence. Ovarian stimulation protocols using the aromatase inhibitor letrozole have been developed and may ameliorate this concern. Studies do not indicate increased cancer recurrence risk as a result of subsequent pregnancy.

(continued on following page)
children undergoing treatment for cancer. The language has been clarified and/or strengthened in several recommendations. Information has been added to address role of psychosocial providers, fertility preservation concerns, and options for children and adolescents with cancer, as well as considerations for patients receiving targeted and biologic therapies in this update.

After a systematic review and analysis of the literature for the preservation of fertility for patients with cancer, the Update Panel concluded that there was no new evidence compelling enough to warrant substantial changes to any of the guideline recommendations. However, minor adjustments were made to reflect progress in the field (eg, oocyte cryopreservation is no longer investigational). Certainly, further research is needed to determine the true effectiveness of different modes of fertility preservation. More research is also needed to establish the best methods to disseminate information and to determine the best time to talk with patients about their options. The discussion should be a part of the comprehensive treatment planning process (Fig 1). The treatment planning discussion should include consideration of scientific evidence, weighing potential harms and benefits, reproductive potential, anticipated delay of childbearing, and patient preferences. The Update Panel strongly encourages health care providers to have an open dialogue with patients or parents or guardians of children anticipating cancer treatment who express an interest in fertility preservation (and those patients who are ambivalent) and refer them as expeditiously as possible to a reproductive specialist, preferably before starting treatment. Electronic resources (eg, e-mail, Skype) are available that may facilitate novel methods of consultation, such as telephone- or Internet-based communication, for patients without geographic accessibility to these specialized providers.

**Are Patients With Cancer Interested in Interventions to Preserve Fertility?**

Current evidence suggests that discussions about fertility and fertility preservation are of great importance to patients with cancer. It may be difficult for physicians to know how important fertility preservation is to their patients unless they ask, because many patients may not bring up the topic. The failure of patients to mention infertility concerns or interest in fertility preservation can result from a variety of factors; they may be overwhelmed by and focused exclusively on the cancer diagnosis, they may be unaware that potential fertility loss may occur, or they may be concerned that pursuing

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**Table 1. ASCO 2013 Recommendations for Fertility Preservation for Patients With Cancer (continued)**

<table>
<thead>
<tr>
<th>Clinical Question</th>
<th>Recommendation</th>
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<tr>
<td>4. What is the role of health care providers in advising patients about fertility preservation options?</td>
<td>4.1 All oncologic health care providers should be prepared to discuss infertility as a potential risk of therapy. This discussion should take place as soon as possible once a cancer diagnosis is made and before a treatment plan is formulated. There are benefits for patients in discussing fertility information with providers at every step of the cancer journey.</td>
</tr>
<tr>
<td>What should providers discuss with patients about fertility preservation?</td>
<td>4.2 Encourage patients to participate in registries and clinical studies, as available, to define further the safety and efficacy of these interventions and strategies.</td>
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<td></td>
<td>4.3 Refer patients who express an interest in fertility, as well as those who are ambivalent or uncertain, to reproductive specialists as soon as possible.</td>
</tr>
<tr>
<td></td>
<td>4.4 Refer patients to psychosocial providers when they are distressed about potential infertility.</td>
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<tr>
<td>. Special considerations: Fertility preservation in children</td>
<td>5.1 Suggest established methods of fertility preservation (eg, semen or oocyte cryopreservation) for postpubertal minor children, with patient assent and parent or guardian consent.</td>
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<td></td>
<td>For prepubertal minor children, the only fertility preservation options are ovarian and testicular cryopreservation, which are investigational.</td>
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Abbreviations: ASCO, American Society of Clinical Oncology; GnRH analogs, gonadotropin-releasing hormone analog; IRB, institutional review board.

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**Fig 1.** Fertility preservation assessment and discussion algorithm for patients with cancer. (*) Patients should be encouraged to contact their insurance company to ascertain out-of-pocket costs. (†) Some patients may proceed with this without the prior step of seeing a reproductive specialist. However, consultation with a reproductive specialist is recommended.
fertility preservation will delay their treatment, leading to increased morbidity or mortality. 

However, there is evidence to suggest that at least among women, patients may make cancer treatment decisions based on fertility concerns. In the study by Partridge et al., 29% of women with breast cancer reported that infertility concerns influenced their treatment decisions.

**What Is the Quality of Evidence Supporting Current and Forthcoming Options for Preservation of Fertility in Males?**

The treatment of cancer often poses a threat to male fertility. Understanding the effects of different antitumor agents on sperm production in men has changed little in the 7 years since the original guideline was published. An updated table on the effects of different antitumor agents on sperm production and a summary of fertility preservation options in males are presented in Data Supplement 5.

The Panel reviewed recent information supporting sperm cryopreservation, testicular hormonal suppression, and testicular tissue cryopreservation. The new evidence continues to support the conclusion that sperm cryopreservation is an effective method of fertility preservation in males treated for cancer.52-39 In contrast, gonadoprotection through hormonal manipulation is ineffective. Testicular tissue or spermatogonial cryopreservation and transplantation or testis xenografting are still experimental and have not yet been successfully tested in humans. However, such approaches may be the only methods of fertility preservation potentially available to prepubertal boys. There are case reports and small case series of successful collection of sperm from a postmasturbation urine sample, rectal electroejaculation under anesthesia, and testicular sperm aspiration, but these remain uncommon and/or investigational. It also seems that testicular cryopreservation procedures can be combined with other medically indicated procedures to increase the feasibility and acceptability of these procedures.40 The Update Panel notes that if patients are promptly referred to a fertility specialist, there is likely to be little to no significant delay in the initiation of cancer treatment.

**What Is the Quality of Evidence Supporting Current and Forthcoming Options for Preservation of Fertility in Females?**

Understanding of the risks of permanent amenorrhea in women treated with modern chemotherapy and radiotherapy has changed little since the original guideline. However, there have been some advances in the science of fertility preservation that may affect patient decision making. An updated table on the risks of permanent amenorrhea in women treated with modern chemotherapy and radiotherapy and a summary of fertility preservation options in females is presented in Data Supplement 6.

The Panel reviewed the new literature supporting embryo and oocyte cryopreservation (with hormonal stimulation), ovarian transposition, surgical options other than radical trachelectomy, ovarian suppression, ovarian tissue cryopreservation and transplantation, and other considerations. Fertility preservation options in females depend on patient age, diagnosis, type of treatment, presence or participation of a male partner and/or patient preferences regarding the use of banked donor sperm, time available, and likelihood that cancer has metastasized to her ovaries. The Update Panel notes that because of requirements for scheduling and performing procedures, some (but not all) interventions may entail a delay in cancer treatment and wishes to emphasize that early referral to a subspecialist can minimize this delay.

**Embryo cryopreservation.** New data indicate that although it is ideal to stimulate ovaries within 3 days of the start of the menstrual cycle, random stimulation can be successful as well.41 This is an important and recent advance in the field of reproductive endocrinology. Furthermore, newer hormonal stimulation regimens (eg, letrozole and tamoxifen) may be effective as traditional methods, and their use may be preferred in women with hormone-sensitive cancers.5,6,12,42,43

Although aromatase inhibitors are primarily used as adjuvant treatment of hormone-positive breast cancers (in premenopausal women), they can act as ovarian stimulants yet suppress estrogen levels. As a result, letrozole has been used for ovulation induction in infertility patients and, in the last 10 years, for the purpose of ovarian stimulation for fertility preservation via oocyte or embryo cryopreservation in women with estrogen-sensitive cancer. When combined with standard fertility drugs, letrozole enhances ovarian stimulation while keeping estrogen levels near physiologic levels. Studies suggest that this approach results in similar numbers of eggs and embryos and similar pregnancy outcomes. Short-term follow-up indicated no impact on cancer-free survival. The Update Panel wishes to emphasize these developments because they may widen the opportunities for fertility preservation.

**Cryopreservation of unfertilized oocytes.** Success rates for this procedure have improved significantly, and it is no longer considered experimental by the American Society of Reproductive Medicine. Some reproductive specialty centers have reported success rates comparable to those obtained using unfrozen eggs, especially in younger women.9,44-46 Like embryo cryopreservation, this technique also requires ovarian stimulation and ultrasound-guided oocyte retrieval. Oocyte cryopreservation is of particular importance for women who do not have a male partner or prefer not to use donor sperm.

**Ovarian suppression.** The question regarding the effectiveness of GnRHa is still not resolved. One recent study with flaws cited a slight benefit for return of menstruation, but another article showed no significant difference in the outcome point of chemotherapy-induced amenorrhea 6 months after the end of chemotherapy. A recent study demonstrated no benefit of using GnRHa in patients with breast cancer receiving cyclophosphamide-based chemotherapy.48 In this study, no differences were observed in the menstruation resumption rates between GnRHa-treated patients versus the control group 12 months after termination of chemotherapy. Moreover, there were no differences in hormonal and ultrasound markers of fertility between patients receiving GnRHa and the control group. The use of GnRHa cotreatment did not predict independently the odds of menstruating at 12 months. Furthermore, a recent meta-analysis, which updates an earlier one, included 24 months of follow-up in the ZORO (Zoladex Rescue of Ovarian Function) study and failed to demonstrate a possible beneficial effect of GnRHa use on either maintenance of menstruation or fertility. There are not definitive data that show that GnRHa preserves fertility, and it remains the subject of ongoing research.

Given the current state of knowledge regarding these agents, it is the opinion of the Update Panel that GnRHa is not an effective method of fertility preservation. Furthermore, complete ovarian suppression is not achieved for several weeks after administration. However, there may be other potential benefits such as inhibiting menses...
during intensive chemotherapy, thus preventing complications such as menorrhagia. In emergency, rare, or extreme circumstances, where proven options are not available, providers may consider GnRHa an unproven option (preferably as a part of a clinical trial), with special consideration of the patient’s specific cancer and needs. This class of drugs also has adverse effects such as hot flashes and bone loss.

**Ovarian tissue cryopreservation and transplantation.** Although this process is still considered experimental, successful pregnancies have been reported. There is a theoretic concern with reimplanting ovarian tissue and the potential for reintroducing cancer cells depending on the type and stage of cancer, although so far there have been no reports of cancer recurrence in humans. In women who have survived cancer, at least 19 live births have been reported using cryopreserved ovarian tissue or oocytes.7,19,51-58

Other considerations. (1) With recent data supporting longer duration of hormonal therapies for estrogen receptor/progesterone receptor–positive breast cancer, larger numbers of women will be affected by the risk of compromised fertility.42 These women will be older and thus at higher risk for infertility at the time that their hormonal therapy is completed. (2) It has been shown that BRCA mutation carriers, especially those with BRCA1, have diminished ovarian reserve.59 There is a concern that BRCA mutation carriers may be more prone to chemotherapy-induced infertility as a result of already lower ovarian reserve and higher likelihood of low response to ovulation induction. This may be important when counseling women regarding their likelihood of infertility after chemotherapy. (3) For patients with inherited or familial cancers for which a mutation has been identified, there may be an added benefit of undergoing fertility preservation by oocyte or embryo cryopreservation, because embryos can be tested for these mutations by embryo biopsy, and preimplantation genetic diagnosis techniques can be considered. (4) A number of conservative surgical (eg, trachelectomy)60-64 and radiation therapy approaches with the aim of preserving fertility are available but are not discussed further in this guideline. Surgical and radiation oncologists should discuss individualized approaches with specific patients, taking into account patient preferences, risks, specific tumor anatomy, and other concerns.

**What Is the Role of the Health Care Provider in Advising Patients About Fertility Preservation Options? What Should Providers Discuss With Patients About Fertility Preservation?**

As with other potential complications of cancer treatment, all health care providers have a responsibility to inform patients about the risks that their cancer treatment will permanently impair fertility. Providers should encourage patients to look into insurance coverage (state-by-state differences) and out-of-pocket costs (which may be supported by charitable funding). An algorithm for triaging fertility preservation referrals is presented in Figure 1.

There are many new studies addressing the importance and timing of referral to reproductive specialists and psychosocial providers. Referrals should be made as soon as possible. Psychosocial providers such as social workers and psychologists can be particularly helpful when a patient is distressed about potential infertility. Some patients, after successful cancer treatment, may want to have a biologic child. The inability to conceive could be a great source of distress. Although it is ideal for a patient to discuss threats to fertility and potential options before cancer treatment, there are other family building options that can be used postcancer. These include the use of gestational carriers, embryo donation, egg or sperm donation, and adoption. Psychosocial providers can assist patients and families in the decision-making process about fertility preservation and disposition of stored gamete options that are morally and ethically acceptable to them.29,34,65-67

Fertility preservation does not diminish the chance of successful cancer treatment. However, if a patient received a treatment that affects cardiopulmonary function, she should be evaluated by an appropriate specialist (eg, maternal-fetal medicine, cardiology, or pulmonology) before attempting pregnancy. If a woman underwent pelvic irradiation, this should be discussed with a maternal-fetal medicine specialist as well, because pregnancy complications such as intrauterine growth retardation and preterm delivery may occur as a result of uterine dysfunction.

**Special Fertility Preservation Considerations for Children and Adolescents With Cancer**

There are new observational studies, as well as case studies, addressing fertility preservation of children and adolescents with cancer, including the risks of radiation as well as chemotherapy.88-92 Parents or guardians are often interested in information about fertility preservation on behalf of their children with cancer. Impaired future fertility is difficult for children to understand but potentially may be traumatic to them as adults. Use of established methods of fertility preservation (eg, semen cryopreservation and oocyte freezing) in postpubertal minor children requires patient assent and parental consent. Unfortunately, there are no standard modalities available for fertility preservation in prepubertal children. Current techniques are limited by the patient’s sexual immaturity, and all available approaches for children are experimental. Oocyte cryopreservation has been reported in children age 1 years and older. There have been numerous reports of ovarian cryopreservation in younger children, also, but there have been no reports of live births after ovarian cortical tissue cryopreserved prepubertally and reimplanted at a later date, primarily because of the young age of the study participants.93,94 Efforts to preserve fertility of children using experimental methods should be attempted only under institutional review board–approved protocols. Likewise, testicular cryopreservation has used in young children, but there are no reports of testicular transplantation in the peer-reviewed literature.

Several studies confirm that adult survivors of pediatric cancer wish they had been given more information and options about fertility, and these survivors are often uncertain about their fertility status or feel regret about no longer having an option.95,96 Parents may be uncertain about making fertility-related decisions on behalf of a minor; both the American Academy of Pediatrics97 and the American Society for Reproductive Medicine29 offer guidance for counseling parents of children with cancer.

**Special Fertility Preservation Considerations for Patients Receiving Targeted and Biologic Therapies**

Since the publication of the 2006 guidelines, the number of novel agents and classes of therapeutic agents has expanded significantly. The Panel acknowledges that there is little available information regarding the impact of these agents on fertility, at any level of evidence, for the vast majority of these treatment modalities. One important exception is bevacizumab, for which the US Food and Drug Administration issued a warning in October 2011, reporting that ovarian
failure occurred in 34% of women receiving a bevacizumab-containing regimen for colorectal cancer compared with 2% of women receiving the same regimen without bevacizumab. Only approximately one fifth of these women recovered ovarian function. The US Food and Drug Administration therefore recommends that oncologists inform females of reproductive potential of the risk of ovarian failure before starting treatment with bevacizumab. Another specific area of concern frequently encountered by clinicians is how to counsel young patients with chronic myeloid leukemia in chronic phase who are being managed with tyrosine kinase inhibitors (TKIs) such as imatinib. Although recommendations regarding management of these patients is beyond the scope of this guideline, the Update Panel wishes to note that a number of case reports, case series, and expert reviews have been published suggesting that young men receiving TKIs probably do not confer an increased risk of pregnancy-related complications or congenital anomalies to their partners and offspring,

Although ASCO clinical practice guidelines represent expert recommendations on the best practices in disease management to provide the highest level of cancer care, it is important to note that many patients have limited access to medical care. Racial, ethnic, and socioeconomic disparities in health care contribute significantly to this problem in the United States. Minority racial/ethnic patients with cancer suffer disproportionately from comorbidities, can experience substantial obstacles to receiving care, are more likely to be uninsured, and are at greater risk of receiving poorer quality care than other Americans. Many other patients lack access to care because they live at a distance from appropriate treatment or reproductive specialty facilities.

Awareness of these disparities in access to care should be considered in the context of this clinical practice guideline, and health care providers should strive to deliver the highest-level fertility preservation advice and treatment to these vulnerable populations. In particular, no patient should be excluded from consideration for discussion

**PROVIDER AND PATIENT COMMUNICATION**

Health care providers can use the following points for a discussion of infertility and fertility preservation with a patient (or parents or guardians):

Inform patient of individual risk
- Some cancer treatments can cause infertility or early menopause.
- To determine your individual risks, we have considered your individual factors such as your cancer type, age, and treatment plan.
- Based on that information, we believe that your risk is [high, medium, low, nonexistent].
- Your fertility status before cancer may also play a role in your individual risks [discuss if relevant].

Discuss common concerns

Options
- There are many available fertility preservation and parenthood after cancer options for you to consider.
- For men, the most common and successful option is sperm banking. Other experimental options exist, if sperm banking is not a viable option for you.
- For women, the most established options are embryo and egg freezing. Other experimental options exist, if these are not viable options for you.
- A referral can be made for you to an appropriate reproductive specialist for a consultation, if you would like to learn more.

Time
- Time is of the essence. Fertility preservation treatments need to be completed before you start chemotherapy and/or irradiation.
- For men, sperm banking can be done quickly and can be done every 24 hours, as long as necessary, to collect the desired number of samples.
- For women, fertility preservation may take 2 to 4 weeks for established techniques. However, some experimental approaches can implemented sooner, so timely referral to a reproductive specialist is important.

Costs
- Insurance coverage for fertility preservation for patients with cancer is improving. The fertility center/sperm bank will be able to check your benefits for you.
- Advocacy organizations such as LIVESTRONG Fertile Hope and some pharmaceutical companies may also provide cost-saving programs.

Risks of pregnancy and children after cancer
- Many patients worry about the safety of pregnancy after cancer. Data are limited, but there seems to be no increased risk of cancer recurrence from fertility preservation methods or pregnancy, even in hormonally sensitive tumors.
- Similarly, many patients worry about the risk of passing cancer along to their children. Aside from hereditary genetic syndromes and in utero exposure to some chemotherapy treatments, there is no evidence that a history of cancer, cancer therapy, or fertility interventions increases the risk of cancer or congenital abnormalities in the progeny.

Refer to appropriate specialists
- Reproductive specialists: For more information about fertility preservation, a referral can be provided you to a local fertility specialist/sperm bank.
- Mental health professionals: Many patients find cancer treatment–related infertility distressing. There is a lot to think about in addition to cancer. You can be referred to a counselor, if that would be helpful. Many of the reproductive centers also have counselors available to discuss these issues, so you may be able to see someone while there for your consultation.
- Advocacy organizations: Many advocacy organizations such as LIVESTRONG Foundation’s Fertile Hope Program and the Oncofertility Consortium also provide useful information and resources to help facilitate your decision making. They may also have financial assistance programs specifically designed to help with fertility preservation.

**HEALTH DISPARITIES**

www.jco.org
of fertility preservation for any reason, including age, prognosis, socioeconomic status, or parity. In discussion, all patients including parents or guardians of children and adolescents should be encouraged to consider fertility preservation, even though there may be financial or insurance barriers. Discussing infertility and introducing the possibility of fertility preservation leads to improved quality of life and diminished distress in all patient populations.

Data Supplements and clinical tools and resources can be found at http://www.asco.org/guidelines/fertility. Patient information is also available at http://www.cancer.net.

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Acknowledgment

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Appendix

Table A1. Fertility Preservation for Patients With Cancer Guideline Update Panel Members

<table>
<thead>
<tr>
<th>Member</th>
<th>Affiliation/Institution</th>
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<tbody>
<tr>
<td>Kutluk Oktay, MD, Co-Chair</td>
<td>Innovation Institute for Fertility Preservation, New York Medical College, Rye and New York City, NY</td>
</tr>
<tr>
<td>Alison W. Loren, MD, Co-Chair</td>
<td>Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA</td>
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Sexual Health: Improving Quality of Life for Female Cancer Survivors
Lisa Astalos Chism DNP, APRN, BC, FAANP, NCMP
Clinical Director, Women’s Wellness Clinic
Certified Menopause Practitioner
Sexual Health Counselor and Educator

Disclosures...

- Hologic Inc. Advisory Board Member
- JDS Therapeutics Speakers Bureau
- Valient Pharmaceuticals Speakers Bureau
- Amag Pharmaceuticals Speakers Bureau

Wayne State University
First ask yourself…

- Should we be discussing sexual health with cancer survivors?
- Are you comfortable talking with patients’ about their sexual health?
- Do you have a good understanding of how to address vaginal pain with penetration or dyspareunia?
- Do you feel comfortable addressing decreased desire?

For starters…

- Quality of life matters…
  “We saved your life for a reason”

Sexual Health Defined…

WHO defines sexual health as:
“Sexual health is a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual Health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled” (WHO, 2002).
Finally…

- Patients want their HCP to ask about their sexual health (Laumann et al., 2009).
- HCP are not comfortable assessing or addressing patients’ sexual health concerns (Reynold’s and Magnan, 2005; Magnan, Reynold’s, & Galvin, 2005).

How do we address your comfort addressing sexual health in 20 minutes?

- Focus, Focus, Focus….
- The two most common sexual health concerns for women with or without a history of cancer include dyspareunia (see, Wurtz, Kao & DiGregorio, 2013) and decreased desire (West et al., 2008).

Addressing Patients’ Sexual Health…

- Assess
- Educate
- Counsel/Offer Treatment
Assessing Cont…

• Sexual History
  – “Are you having any sexual health concerns?”
  Then if needed, get more specific…
  – “Are you sexually active with a male, female partner or both”?
  – “Are you having any difficulty with arousal?”
  – “Are you having pain with penetration of a penis/vibrator”?
  – “Are you able to achieve orgasm”?

Assessing Cont…

• The PLISSIT Model:
  – P=Asking Permission- “May I ask you about your pain with intercourse?”
  – LI=Limited Information- “How long has this been going on? How often does this happen?”
  – SS=Specific Suggestions- “Have you tried any vaginal moisturizers or lubricants?”
  – IT=Intensive Treatment referral- “Would you feel comfortable talking with someone about this?”

(Anon, 1970)

Next…Educate and Counsel…

• Educate and normalize sexual health concerns

• Counsel/Offer regarding possible treatments and therapies
Dyspareunia…

– Most common causes of dyspareunia:
  – Lack of lubrication
  – Vulvovaginal atrophy associated with Genitourinary Syndrome of Menopause (GSM)

(Other causes outside scope of this talk include vulvodynia and vaginismus)

Vaginal Moisturizers (Replens, Luvena)- First Line

• Does not cure vaginal atrophy
• Use vaginally every four days
• Attaches to vaginal epithelium
• Restores natural vaginal pH, increases moisture, elasticity (Replens = 60 x water)
• Reduces pain, itching, irritation
• Use lubricant with moisturizers

(NAMS, 2012; Feldhaus-Dahir, 2010)

The Exception: Hyaluronic Acid

• Vaginal moisturizers containing hyaluronic acid found to normalize vaginal pH, reduce itching, dryness, dyspareunia, and improve symptoms of vaginal atrophy equivalent to local CEE in some studies (Jokar et al., 2016)
• Used every 3-4 days intravaginally to maintain
• OTC
Vaginal Lubricants - First Line

- Petroleum based: (Vaseline, mineral oil)
  - Safe for PU condoms, can irritate vagina, destroy latex products
- Natural oil based: (Vegetable oil, olive oil, Crisco, coconut oil)
  - Safe to ingest, PU condoms, destroy latex products
- Water based: (Astroglide, KY, Wet)
  - Safe all condoms, latex products, dries out quickly, parabens irritate genitals

Lubricants cont...

- Silicone based: (Eros, Pink, KY Intrigue, Liquibeads, Wet Platinum)
  - Longer lasting, safe with all condoms and non-silicone products, odorless, tasteless, safe for sensitive skin, expensive, hard to find

Vulvar Vaginal Atrophy...

- Educate patients on cause:
  - Decreased estrogen levels
    - Menopause
    - Chemotherapy induced menopause
    - Surgical menopause
    - Pelvic floor radiation
    - Endocrine therapies

(NAMS, 2014)
Vulvar Vaginal Atrophy (VVA)

- Early stages associated with thin, dry, erythematous vaginal epithelium
- Later, labia minora less distinct
- pH greater than 5.0 (3.8-4.5), parabasal cells replace normal vaginal epithelium
- Repopulation with diverse vaginal flora occurs, resulting in frequent UTIs (More common with use of AIs) (NAMS, 2014)

2nd Line Therapies

- Local Estrogen - FDA Approved for Vaginal Atrophy (Boxed warning for breast/endometrial cancer)
- Osapemiphine (Osprena) - FDA Approved for dyspareunia (Not approved for breast cancer)
- DHEA (Intrarosa) - Recently FDA Approved for dyspareunia (Precaution for history of breast cancer)
Local Estrogen

- Vaginal Estrogen
  - NAMS 2013 Vulvar vaginal Atrophy Position Statement-
    Estrogen is second line therapy
  - Available in vaginal creams, ring (7.5 mcg a day over three months), and tablets (only available as 10mcg tablets)
  - Progesterone not generally indicated with use of topical estrogen-endometrial safety data > 1 year not available (NAMS, 2017)
  - Use with estrogen dependent cancers controversial

Local Estrogen and Breast Cancer

History…

- ACOG Opinion Paper published March 2016
- Non hormonal therapies remain first line
- No evidence to support reoccurrence of breast cancer in women using local estrogen therapy
- However, no level one evidence to support safety…
- Requires shared decision making with patients

Estrogen…
Ospemaphine (Osphena)

- Ospemifene (Osphena) 60mg/day
- Two 12-week studies showed improvements with daily use (60 mg) in
  - Vaginal maturation index
  - Vaginal pH
  - 1 year later patients sustained improvements with no cases of VTE, endometrial hyperplasia, or carcinoma

(Portman, Bachman & Simon, 2013)

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Ospemifene (Osphena)

- Risk for VTE-much like estrogen, other SERMS (1/1000 women/year).
- Not adequately studied in breast cancer population, however, magnitude anti-estrogen effect unknown, unstudied (Goldstein, 2013).
- Animal models suggest an inhibitory effect on breast tissue (Berga, 2014)
- Neutral in breast, minimal effects on endometrium (Berga, 2014)

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Intravaginal DHEA (Intrarosa)

- Prasterone DHEA Intravaginal Ovules (Dehydroepiandosterone)
- Labrie et al., (2009) (n=216) Seminal article/phase III
  - DHEA ovules .25%, .5%, 1% applied daily
  - After 2 weeks decreased parabasal cells and pH, increased vaginal secretions, color, epithelial integrity
  - No reported change in endometrial histology
  - No increase in serum sex steroids above PM range
  - Increased arousal reported-possibly due to increased vaginal nerve fibers
Recent Newer Therapies…

- Local lidocaine RCT double blinded placebo controlled study in breast cancer survivors (n=46)
  - Less pain with penetration (p=.007)
  - Sexual distress decreased (p < .001)
  - No report of penile numbness
  (Goetsch, Lim, & Caughey, 2015)

Vaginal CO₂ Laser Therapy

- Non surgical laser used to induce the production of new collagen and elastin fibers
- Overall, meta-analysis noted vaginal laser therapy was associated with decrease in symptoms of GSM as well as changes in histopathology, restoration of vaginal flora
- Body of evidence is low, more study needed (RCT)
  (Pitsouni, Grigoridi, Falagas, Salvatore, & Athanasiou, 2017)
### Vaginal Dilators

- Advise patients to begin using vaginal dilators approximately 2 weeks after therapies.
- Dilators come in various sizes and are used to provide gradual stretching of the vagina.
- Encourage women to moisturize before using dilators and use them alone or with a partner.

### Encourage Vaginal Stimulation

- Encourage women to provide stimulation to the vagina/clitoris regularly to increase blood flow.
- Be culturally sensitive.
- Suggest using alone or with a partner.
Vaginal Stimulation…

- Clitoral Pump-increases blood flow/engorgement directly to clitoris
- Study “prescribed” Eros Therapy
  - Pilot study of irradiated cervical cancer patients (prescribed 4 x weekly for 3 months) during foreplay or self stimulation
  - found significant improvements in sexual desire, arousal, lubrication, orgasm, sexual satisfaction and pain (Schroder et al., 2005).

Clitoral Pumps/Vibrators

Pelvic Floor Rehab

- Educate regarding possible benefits of pelvic floor rehab (especially after radiation)
  - Release tight muscles (helps with pain on vaginal entry)
  - Relax scar tissue
  - Exercises to promote the strength of the pelvic floor*
Decreased Desire/Lack of Interest…

Treatment/Therapies DD

- Assess history, history, history
- Is this a new problem since diagnosis?
- Are there underlying causes such as pain with penetration?
- Is there a relationship? If so, how is the relationship?
- Refer if needed
• Start by normalizing the problem...
• Sexual response cycle different for women than men
  – Master's and Johnson- started with a linear model based on orgasm
  – Kaplan refined the model and added desire
  – Basson more accurately described the sexual response model for women

Basson Model

Simplified Basson Model
Treatment/Therapies DD

- Rethink normal…
- Plan for intimacy and sexual activity
- Replace spontaneity with anticipation
- Communicate with your partner
- Treat underlying causes (pain, depression)
- Consider teaching patients about Sensate Focus…

Example of Sensate Focus:

- Phase 1:
  - Clothed or partially clothed
  - Begin touching non-obvious erogenous zones, areas that are normally visible when clothed
  - Sexual intercourse and orgasm not permitted
- Phase 2:
  - Bring touch to breast and genital areas
  - May introduce stimulation to genitals, gently increasing stimulation and slowing down, then begin again
- Phase 3:
  - May include penetration using fingers, sexual aids, penis
  - Pay attention to other parts of the body
  - Hold off on thrusting with penetration until having spent time with penetration
  - Aim is to continue to enjoy intimacy

A Few Words About Medications…

- Non FDA approved medications to treat decreased desire in women…
  - Testosterone
  - Bupropion
  - PDE-5 Inhibitors
Medications cont…

• Testosterone - Not FDA approved
  – RCT (n=549) testosterone patch for women with HSDD
  – Increased frequency of satisfying sexual activity and sexual desire
    (Shiffren et al., 2006)
  – Safety data still not conclusive regarding cardiovascular disease, breast cancer
    (Davis et al., 2005)
  – SE: hirsutism, voice changes, acne

Medications…

• Buproprion (wellbutrin) SR 300-400mg a day x 112 days (n= 66)
• Inhibits reuptake of dopamine and NE
• Increases in arousal and pleasure
• SE agitation, HTN, insomnia, dry mouth
• Off label use
  (Seagraves et al., 2004)

Medications…

• PDE 5 Inhibitors
  – n= 781 women with arousal disorder, 18-70 yrs
  – Sildenafil showed no significant difference compared to placebo, any endpoint, any dose
  (Basson et al., 2002)
Medications…Flibanserin

First FDA Approved Medication for HSDD
Flibanserin (Addyi)-5-HT1A-agonist & 5-HT2A antagonist; 100mg at HS
RCT (n=481) associated with improvement in sexual desire, improvement in the number of SSEs, and reduced distress associated with low desire
  – SE: somnolence, nausea, headache
  – Mentioned in Marie Claire, 2014

(Simon et al., 2013)

Flibanserin…

• It is contraindicated to drink any alcohol with flibanserin
• REMS certification required
• Should not be used with CYP3A4 inducers
• Takes 8 weeks for full effect
• On average 4 SSE a month

Final Thought…

Quality of life matters…consider all the options and take the time to assess, educate, counsel/treat

Thank You
Feeling overwhelmed by grant writing? This session is geared toward MCC organizations that need extra support to submit a successful grant application. Dr. Chamberlain will cover the ‘nuts and bolts’ of writing a grant and provide participants with the basic knowledge and understanding of completing the components of a grant application, including writing a cover letter, executive summary, statement of need, project description, SMART objectives, and developing a budget.
Cancer-Related Funding Opportunities

Community Tool Box:
Write a Grant Application for Funding

The "Community Tool Box" Web site is maintained by the University of Kansas Work Group on Health Promotion and Community Development in Lawrence, KS, and HEC/Community Partners in Amherst, MA. This link will take you to the "Write a Grant Application for Funding" section, where you will find an outline for a generic grant application and links to helpful resources and completed proposals. This generic grant application can be adapted by community-based organizations to fit a number of different government agencies, foundations, and civic and corporate funders.

Private Foundation & Corporate Funding Sources

American Cancer Society
www.cancer.org/research/we-fund-cancer-research/apply-research-grant.html
The American Cancer Society focuses its funding on investigator-initiated, peer-reviewed proposals. This process ensures that researchers propose projects that they believe are ready to be tackled with the available knowledge and techniques. This intellectual freedom encourages discovery in areas that scientists believe are most likely to solve the problems of cancer. The American Cancer Society also offers grants that support the clinical and/or research training of health professionals (nurses, physicians and social workers).

Blue Cross Blue Shield of Michigan Foundation
http://www.bcbsm.com/foundation/grant-programs/overview.html
Funding targets behavioral health, substance abuse, obesity and community issues.

Robert Wood Johnson Foundation
In support of this belief, we fund program and policy initiatives in four areas which are each critical to health equity—enabling everyone in our nation to live a healthier life:

- Health Systems: Catalyzing fundamental changes in health and health care systems to achieve measurably better outcomes for all.
- Healthy Children, Healthy Weight: Enabling all children to attain their optimal physical, social and emotional well-being, including growing up at a healthy weight.
- Healthy Communities: Creating the conditions that allow communities and their residents to reach their greatest health potential.
- Health Leadership: Engaging a diverse array of leaders in all sectors with the vision, experience, and drive to help build a Culture of Health.

Susan G. Komen for the Cure
Research Grants:
Komen is committed to supporting research that will identify and deliver the cures for breast cancer.

WK Kellogg Foundation
https://www.wkkf.org/grants
Our grant making supports thriving children, working families and equitable communities.

Government Funding Sources

Centers for Disease Control and Prevention
www.cdc.gov/niosh/oep/funding.html#res

Health Resources and Services Administration
www.hrsa.gov/grants/index.html

National Cancer Institute
www.cancer.gov/researchandfunding/announcements

National Institutes of Health
http://grants1.nih.gov/grants/index.cfm
Link Volunteer Navigator Program

Collaborating partners: St. Joseph Mercy Health System Cancer Centers, Cancer Support Community of Greater Ann Arbor and the American Cancer Society

Project description/outcomes: This volunteer program, based on the evidence-based Lay Health Advisor model, was developed initially in 2008. When St. Joseph Mercy Health System received a grant in 2014, this program grew to reach 779 of patients and caregivers, and was further extended in 2015 to include St. Joseph Mercy Brighton, Canton and Chelsea community cancer centers. The annual goal was to reach at least 1,600 patients and that number was far exceeded.

All three partner organizations collaborate to provide a comprehensive training to new volunteers, which, in addition to a thorough overview of psychosocial needs and resources, includes dedicated units on effective communication and cultural competence. Trainings and ongoing oversight by the program coordinator offer volunteers the opportunity to practice skills such as active listening, problem-solving and empathetic communication. When a volunteer meets with a patient and/or their family, the volunteer introduces them to all three organizations by offering brochures and information. For example, the American Cancer Society (ACS) offers a free "Personal Health Manager Kit" to any one diagnosed with cancer. The kits are diagnosis specific and provide both educational materials related to a patients specific type of cancer as well as a filing system for patients to keep track of paperwork related to their cancer. American Cancer Society also offers transportation assistance, resource referrals, insurance assistance and other programs. From the Cancer Support Community (CSC), patients receive the current program calendar which shows them all the free psychosocial support programs offered, including support groups, exercise and stress management, educational workshops, and more. And finally, patients receive a St. Joseph Mercy Cancer Center Support brochure which talks about oncology social work, nurse navigation program, nutrition program, and more. When a patient is interested in receiving an ACS kit, speaking to a CSC staff member for individual psychosocial needs assessment, or other referrals, the volunteer helps them complete a standardized referral form which is faxed to ACS and CSC. This is essentially how volunteers "Link" patients to all the partners.

From 2014 through August, 2017, 969 referral forms were completed with 3995 contacts being made. While some patients see volunteers multiple times during the course of their treatment, each contact is counted to show each touch made.

Learn more:
Jordan Sheppard-Cusumano
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Email: jordan.sheppard-cusumano@stjoeshealth.org
Detroit HealthLink for Equity in Cancer Care

Collaborating Partners: Community members, Voices of Detroit Initiative, Karmanos Cancer Institute/Wayne State University, Western Wayne Family Health Center/Inkster, ACCESS – Dearborn, and LGBT Detroit.

Project description/outcomes: Detroit HealthLink for Equity in Cancer Care is a region-wide coalition that addresses cancer related needs in the Metropolitan Detroit area. Under the umbrella of the Detroit HealthLink, several cancer action councils have been developed to empower cancer patients, caregivers, survivors and community members to address cancer issues in their communities through increased engagement in cancer research. To date, there are five cancer action councils: the Conner Creek/VODI Cancer Action Council, the Western Wayne Cancer Action Council, the Karmanos Cancer Institute/Midtown Cancer Action Council, the ACCESS-Dearborn Cancer Action Council, and the LGBT-Detroit Cancer Action Council. Because cancer affects all communities, it is vital to bring members of those communities into the research process. If community members and researchers work together, community-specific targeted research questions can be created.

Cancer Action Councils (CACs) are made up of community members and representatives from community-based organizations who share their knowledge and community experiences about local cancer issues to work together to identify possible ways to improve the lives of cancer patients, survivors and caregivers in their communities. Cancer action council members are actively engaged in their communities and are working to create healthier neighborhoods.

All of the councils have been or are being trained through the Building Your Capacity curriculum that consists of information covering an introduction to research, community engaged research, how to develop research questions, literature searches, research design, ethics and IRBs, qualitative and quantitative methods, grants and policy and advocacy. The councils also learned about cancer rates in their communities, the SEER Database/Epidemiology, and have been offered the opportunity to work with several researchers. The curriculum is designed to provide skills on how to partner with cancer researchers to develop projects, and set priorities for future cancer research and funding across the cancer continuum: prevention and early detection, diagnosis and treatment, survivorship and end of life.

Contact:
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Phone: 313-576-9691
Email: larkink@karmanos.org

Funded by: Patient Centered Outcomes Research Institute Engagement Award, Contracts# 2971 & 6252, Detroit Medical Center (DMC) Foundation
Knock Out Cancer

Collaborating Partners: Mel Trotter Ministries, Spectrum Health Cancer Program, Partial Grant from the Susan B. Komen Foundation, Education Materials from American Cancer Society

Project description/outcomes: “Knock Out Cancer” is a collaboration of the Spectrum Health Cancer Center and Mel Trotter Ministries. Mel Trotter is a ministry that provides shelter, warm meals, housing assistance, job assistance, medical and dental care, legal assistance, an inebriant clinic, and transportation. The homeless are identified as a vulnerable population, at risk for many cancers, and underserved in the area of health education. The Spectrum Health Cancer Center asked, how do we bridge that gap? The answer to the question was the was the creation of the “Knock Out Cancer” program, which was introduced in November 2016. This program provides cancer screening education and cancer risk reduction education utilizing oncology nurses and state of the art telehealth technology to meet with guests at Mel Trotter Ministries. The program uses two large computer monitors, one at Mel Trotter and one at Spectrum Health, which was made possible partially through a grant from the Susan G. Komen Foundation. During their stay, homeless guests are encouraged to become active participants in preparing for their return to the community. Mel Trotter offers the “Knock Out Cancer” program as an option for guests interested in learning more about taking charge of their health through minimizing their risk of developing cancer. Interestingly, the cancer risk reduction education parallels education to reduce the risk of developing heart disease and type II diabetes. Using guidelines incorporated from the American Cancer Society, oncology nurses at Spectrum Health developed a script for these interactions. Education is provided on: avoiding tobacco, being active, BMI, healthy eating, using sun protection, limiting alcohol, and knowing their body so they can report changes. As of August 2017, 39 guests, ages 18 to 77 have participated in the program. Nurses also inquire as to the age and family history of the guest and discuss appropriate screening guidelines and recommendations. The majority of guests verbalize their visit and the information provided was helpful. Over 50% verbally indicated they would make a change in their current lifestyle or health behaviors. The “Knock Out Cancer” program is an example of the successful strategy of combining two already effective community based organizations to reach an increased number of people with cancer prevention and cancer risk reduction education.

Learn more:  
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Email: loril.garrett@spectrumhealth.org
Lung Cancer Screening at Spectrum Health

Collaborating Partners: Spectrum Health Medical Group, Spectrum Health Regional Hospitals (9), Lung Cancer Alliance, American College of Radiology (National Database), Radiology/Radiologists, Spectrum Health Cancer Program, Physicians, Registered Nurses, Medical Assistants, Nursing Technicians, Nurse Practitioner, Lung Multi-specialty Team Clinic, Business Analysts, EPIC/Computer Analysts, and Billing/Coding Department

Project description/outcomes: Spectrum Health is committed to working to increase access for lung cancer screening and to ultimately reduce lung cancer deaths in the areas they serve. To participate in the Lung Cancer Screening program, patients who meet criteria for lung cancer screening are identified and have a low dose CT scan of the chest annually until they no longer meet criteria. Spectrum’s methodology includes the utilization of the multidisciplinary approach and having the program embedded in the Multispecialty Team Clinic with lung cancer providers and additional support staff. The goal of this screening program’s project was to increase the referral volume of patients accessing lung cancer screening, which proved successful over the past year. The Lung Cancer Screening Program became the single funnel for patient access in July of 2016. Since that time average referral volumes have increased from 17 patients per month to 91 patients per month. Over the last year, Spectrum also expanded its Lung Cancer Screening Program to include its regional hospitals, which has culminated in having 15 radiology locations for patients to access lung cancer screening. In April 2017 Best Practice Alerts (BPAs) were implemented in EPIC (electronic medical record), which identifies at risk patients who may be eligible for lung cancer screening. With the BPA initiation referrals doubled in just one month. One of the highlights of this project was simplifying many processes for physician referrals and patient participation. The single funnel referral method also ensures eligibility criteria are met as the Lung Multispecialty team is solely responsible for the functionality of the program. Education is provided to both patients and physicians and processes are in place to ensure appropriate and timely referrals, orders, authorizations and screenings. Annual reminder systems are in place for patients that continue to meet criteria for lung cancer screening. Additionally, all screening results are entered into the Lung Cancer Screening Registry by the Lung Multispecialty Team staff. As of August 31, 2017, Spectrum Health’s Lung Cancer Screening Program has identified 15 lung cancers, with 66% of them being diagnosed at Stage I. Seven incidental cancers have also been discovered. If an abnormality is found, many patients chose to participate in the Lung Mass Multispecialty team clinic, where they can have a team approach to their care.

Learn more:
Loril Garrett, Spectrum Health
Phone: 616-486-5578
Email: loril.garrett@spectrumhealth.org
Southeast Michigan FluFIT initiative

**Partners:** Macomb County Health Department; Oakland County Health Division; Wayne County Health, Veterans and Community Wellness; Beaumont Health; St. John Providence Health System; McLaren; Henry Ford Health System

The Colorectal Screening Initiative is a collaboration of community partners with a common goal of raising the colorectal screening rates in Michigan. This collaboration began in July 2016 as a direct result of a brainstorming session between the Oakland County Health Division (OCHD), Macomb County Health Department, Wayne County Health, Veterans and Community Wellness, the American Cancer Society (ACS) and four local hospital systems: Beaumont, Henry Ford Health System, St. John Providence Health System and McLaren. The effort began as a push to offer Fecal Immunochemical Test (FIT) kits at Health Department flu clinics. A team consisting of representatives from all 7 agencies met regularly to develop, refine and troubleshoot the launch of the screening initiative. Public Health Nurses assessed the resident’s eligibility to receive a FIT kit, based on age (between 50-75 years) and no history of colonoscopy in the past ten years or FIT screening in the past year. The resident chose which hospital system they preferred to submit their specimen to. The Health Departments tracked the hospital specific screening kits and provided weekly updates to the hospitals. Hospital labs were alerted to be on the lookout for these specimens. The hospital labs tested the specimens and mailed screening results to the residents who submitted kits. Residents whose screenings results indicated the need for further testing were referred for follow-up via their primary care physician.

To date over 350 residents have been provided a colorectal screening FIT kit of those 350, 94, or 26.7% completed their screening, with only 1 positive result. That person was contacted by the hospital and the primary care provider was informed to ensure the patient received the follow up care required.

**Learn more:**
Abby Moler  
Phone: 248-663-3429  
Email: abby.moler@cancer.org
The MCC Champion Award honors an individual who has demonstrated leadership, excellence, success and impact in the fight against cancer. This individual has through their proven efforts, reduced the burden of cancer, championed initiatives to prevent and control cancer and has improved the lives of those living with cancer. The MCC Champion is someone who is looked up to as a leader in cancer prevention and control.

2017 MCC Champion Award
Connie Szczepanek, RN, BSN, CCRP
Conflict of Interest Statement
The presenters have declared no conflict of interest or financial interest in this program. All presenters have signed an attestation that they will present fairly and without bias.

The planning committee members have declared no conflict of interest or financial interest in this program. All planners have signed an attestation that they evaluated sessions and presenters fairly and without bias.

Continuing Education
3.0 Nursing contact hours will be awarded upon completion of the requirements below:

- Sign In at registration desk at conference start
- Complete online evaluation and include contact information

ONS Approval Statement
“This continuing nursing education activity was approved by the Oncology Nursing Society, an accredited approver by the American Nurses Credentialing Center’s Commission on Accreditation.”

2017 Annual Meeting Online Evaluation
https://www.surveymonkey.com/r/TH7XTYZ
Certificate of Attendance

2017 Michigan Cancer Consortium Annual Meeting

Michigan Public Health Institute

2390 Woodlake Drive, Suite 360, Okemos, MI 48864

Date: November 8, 2017

Time: 8:45am-1:45pm

Location: The University Club & James B. Henry Center, Lansing, MI 48910

Ann Garvin, MS, CNM, RN

Nurse planner for CNE activity
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