THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

Universal *BRCA1* and *BRCA2* Genetic Testing for Ovarian Cancer Patients

An initiative to improve genetic counseling and genetic testing rates among patients with high grade, non-mucinous epithelial ovarian cancer

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Clinical Cancer Genetics and Flagship 1A Breast and Ovarian Cancers Moonshot
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Disclosures

- I have no conflicts of interest to disclose
- This study was funded by The University of Texas MD Anderson Cancer Center Breast and Ovarian Cancers Moon Shot Program and Phillips 66.

Outline

1 BACKGROUND

- Hereditary ovarian cancer
- National guidelines

2 UNIVERSAL TESTING

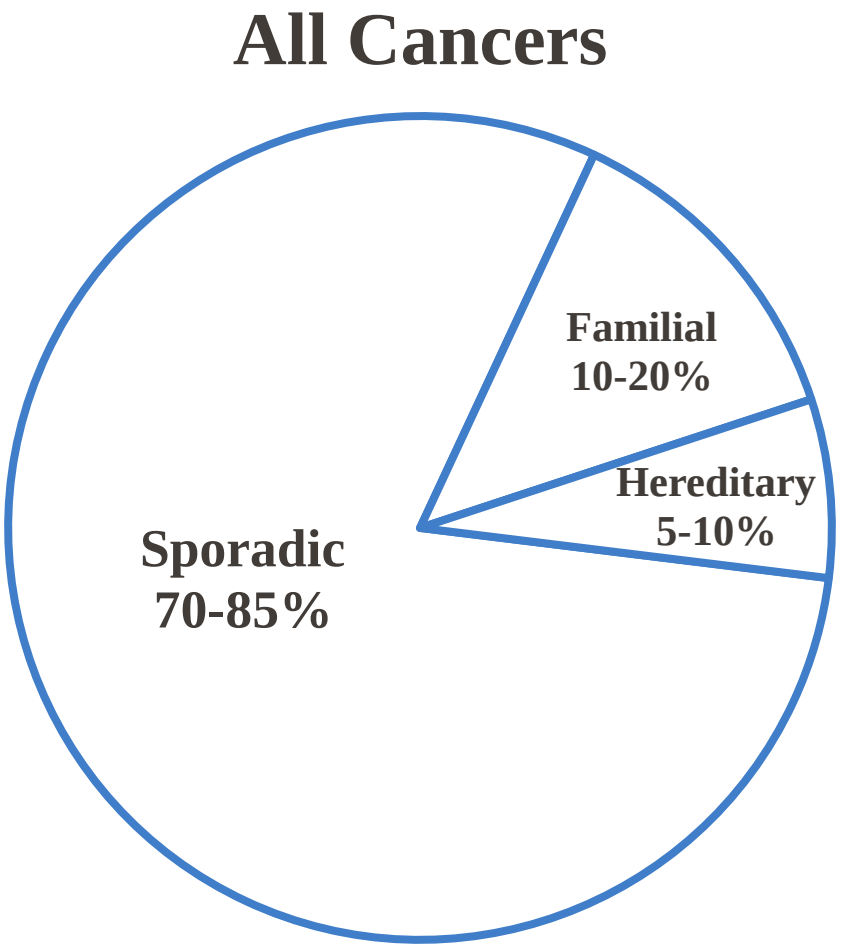
- Preliminary results

3 DISCUSSION

- Future Plans

Background

Background



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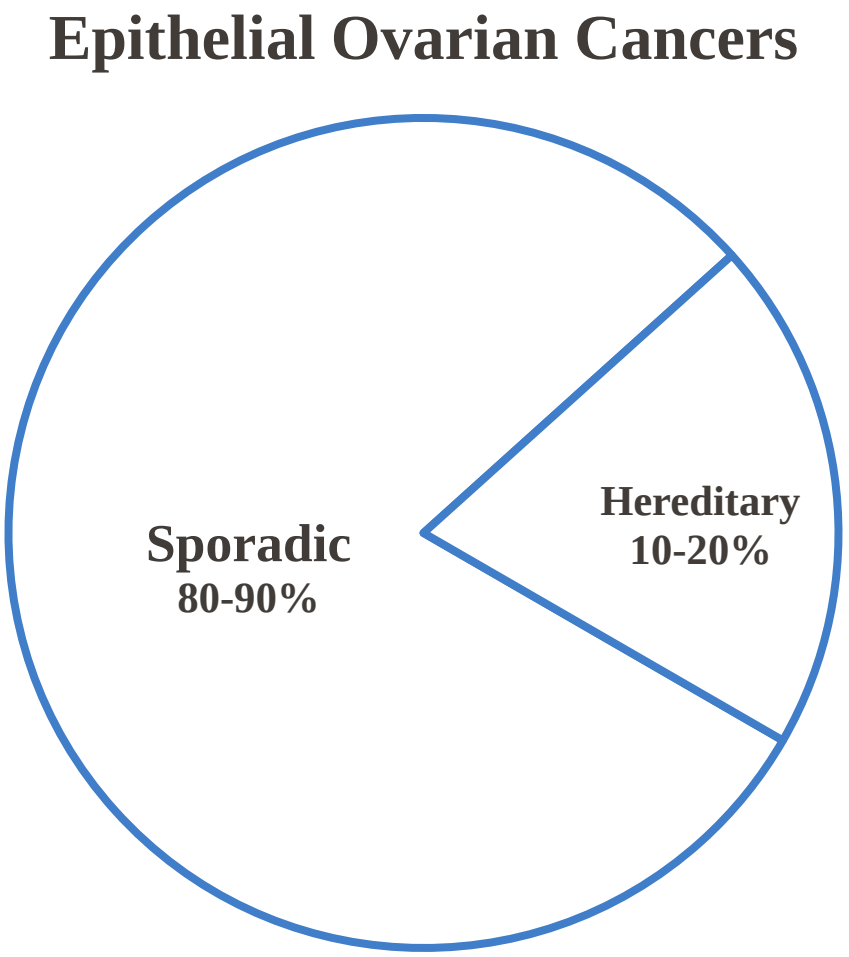

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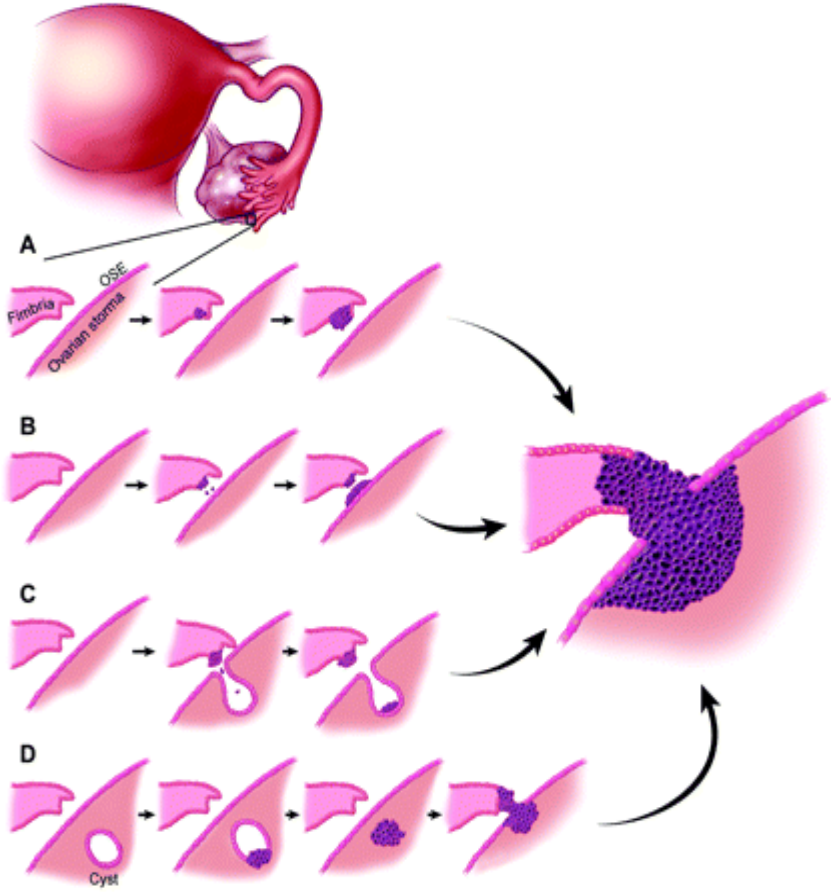
Walsh et al. "Mutations in 12 genes for inherited ovarian, fallopian tube, and peritoneal carcinoma identified by massively parallel sequencing." *PNAS* 108.44 (2011):18032

Background

Examples of Epithelial Ovarian Cancer Histology Types:

- Serous
- Endometrioid
- Clear cell



UpToDate. "Origins of ovarian tumors." ©2016 UpToDate Graphic 72286 Version 6.0 www.uptodate.com/contents/83397
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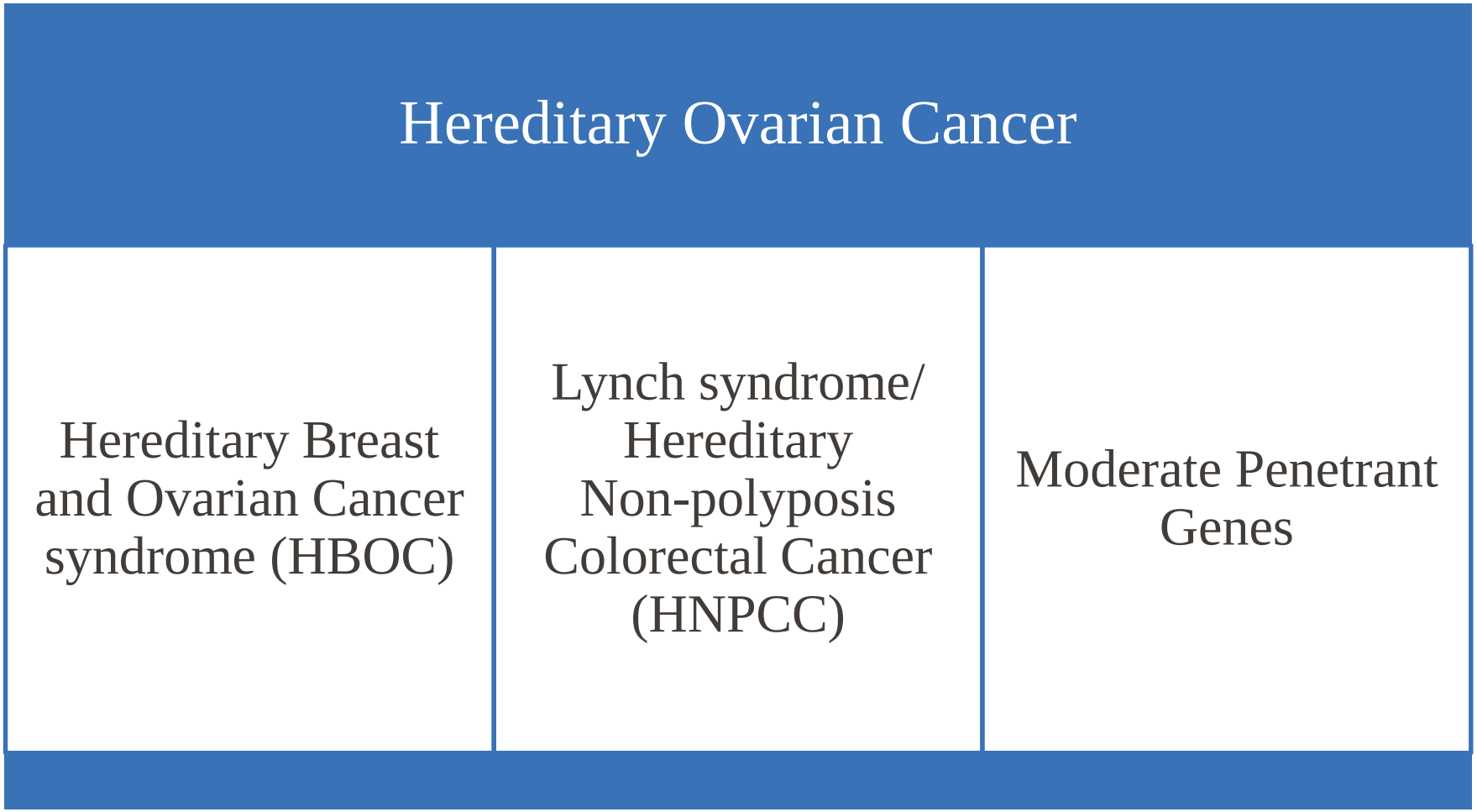
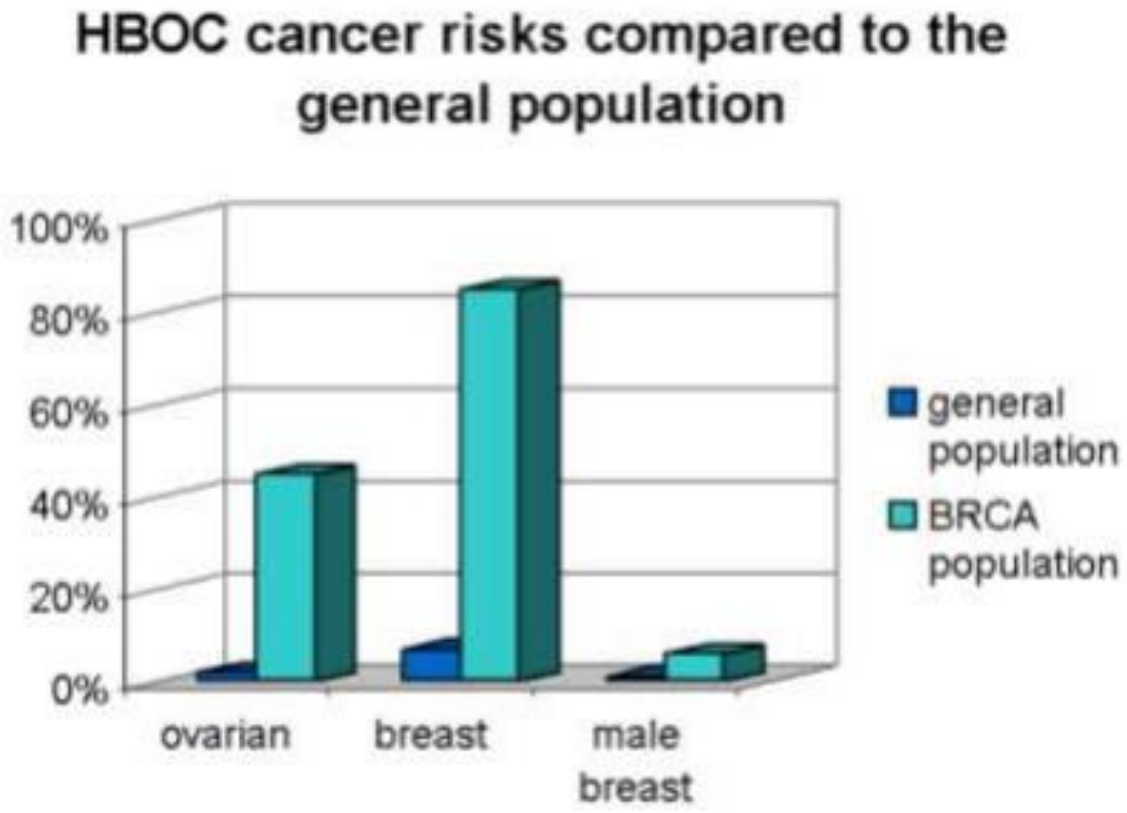
Background

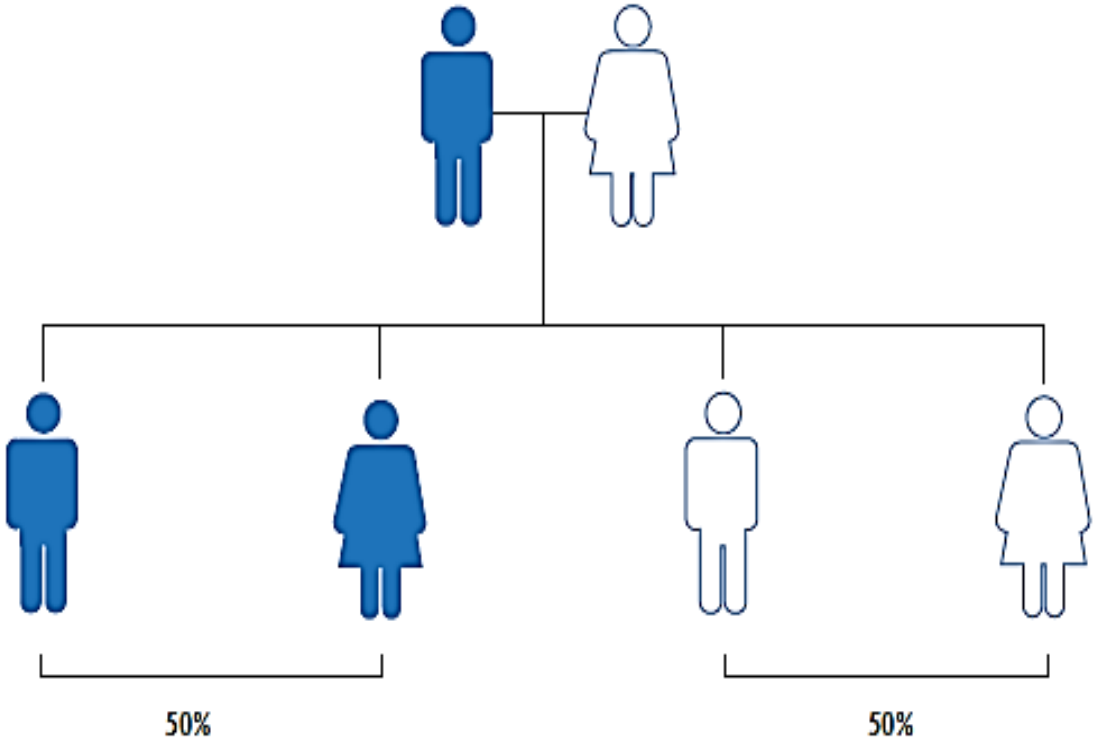

Hereditary Ovarian Cancer
Hereditary Breast and Ovarian Cancer syndrome (HBOC)
Lynch syndrome/ Hereditary Non-polyposis Colorectal Cancer (HNPCC)
Moderate Penetrant Genes

Background



Hereditary Breast and Ovarian Cancer Syndrome
The University of Texas MD Anderson Cancer Center ©2006
Revised 09/2013, Patient Education 2361

Background



- Increased lifetime risk for cancer
- Guidelines for screening and risk reducing options
- General population cancer risks and screening recommendations

Background

National Guidelines for *BRCA1* and *BRCA2* Genetic Testing

National Comprehensive Cancer Network (NCCN)

- v.1.2008
- "Personal history of epithelial ovarian cancer"

Medicare (CMS) Guidelines

- Original effective date: 12/1/2006
- "Personal history of epithelial ovarian/fallopian tube/primary peritoneal cancer"

Medicare Coverage Database Archive. http://localcoverage.cms.gov/mcd_archive/overview.aspx?from2=overview.aspx&. LCD: L24308
National Comprehensive Cancer Network Clinical Practice Guidelines in Oncology, v.1.2008

Background

Consensus Statements for *BRCA1* and *BRCA2* Genetic Testing

2009

- American Congress of Obstetrics and Gynecologists (ACOG)[1]

2014

- Society of Gynecologic Oncology (SGO)
- American Society of Clinical Oncology (ASCO)
- American College of Medical Genetics (ACMG)

ACOG Committee on Practice Bulletins-Gynecology, ACOG Committee on Genetics, and SGO members, et al. "ACOG Practice Bulletin: Clinical Management Guidelines for Obstrician-Gynecologists. Hereditary Breast and Ovarian Cancer Syndrome" *Obstetrics and Gynecology* 113.4 (2009) 957-966.
Lancaster, et al. "Society of Gynecologic Oncology statement on risk assessment for inherited gynecologic cancer predispositions" *Gynecologic Oncology* 136 (2014) 3-7.
Lu, et al. "American Society of Clinical Oncology Expert Statement: Collection and Use of a Cancer Family History for Oncology Providers." *Journal of Clinical Oncology* 32.8 (2015) 833-841.
Hampel, et al. "A practice guideline from the American College of Medical Genetics and Genomics and the National Society of Genetic Counselors: referral indications for cancer predisposition assessment." *Genetics in Medicine* 17 (2014) 70-87

Background

Adherence to guidelines and recommendations?

Reported genetic counseling recommendation and referral rates for epithelial ovarian, fallopian tube, and primary peritoneal cancers between **11% and 49.3%.**

Backman et al. "Referrals to Genetic Counseling in Patients with Ovarian, Fallopian Tube, or Primary Peritoneal Cancer, an Institutional Review." *Gynecologic Oncology* 139.3 (2015): 586.
Febbraro, et al. "Adherence Patterns to National Comprehensive Cancer Network (NCCN) Guidelines for Referral to Cancer Genetic Professionals." *Gynecologic Oncology*138.1 (2015): 109-14.
Petzel, et al. "Improving Referral for Genetic Risk Assessment in Ovarian Cancer Using an Electronic Medical Record System." *International Journal of Gynecological Cancer* 24.6 (2014): 1003
Powell, et al. "Does the Diagnosis of Breast or Ovarian Cancer Trigger Referral to Genetic Counseling?" *International Journal of Gynecological Cancer* 23.3 (2013): 431-36.
Swanson, et al. "Increasing Genetic Counseling Referral Rates after Ovarian Cancer Diagnosis: Improving the Quality of Ovarian Cancer Care." *Gynecologic Oncology*141 (2016): 194.
Wright, et al. "Underuse of BRCA Testing in Patients with Breast and Ovarian Cancer." *American Journal of Obstetrics and Gynecology* 214.6 (2016): 761-63.

Background

MD Anderson Gyn Onc referral rates of ovarian cancer patients (1999-2007)

- "High Risk" criteria used:
- 1999: ~12% Referred
- 2007: ~48% Referred

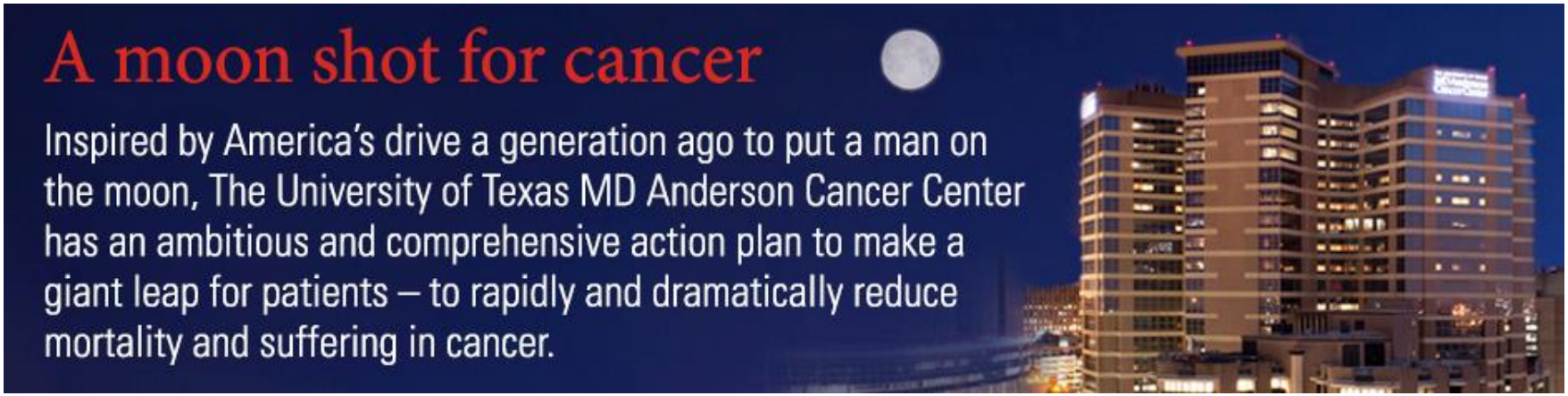
- Breast and ovarian cancer
- Ovarian cancer and Ashkenazi Jewish ancestry
- Ovarian cancer and blood relative with breast cancer ≤50 or ovarian cancer

- Median time to referral was >3 years
- African American patients were less likely to be referred than White or Hispanic patients

Meyer et al. "Evaluating Women With Ovarian Cancer for BRCA1 and BRCA2 Mutations: Missed Opportunities." *Obstetrics and Gynecology* 115.5 (2010): 945.

Universal Testing Initiative

Universal Testing



Universal Testing

Aim

- At least 80% of patients with high grade, non-mucinous epithelial ovarian cancer (HGOC) will be offered standard of care genetic counseling and/or genetic testing for BRCA1/2

Universal Testing

Interventions

Physician Level

- Education and engagement
- Physician-coordinated genetic testing

Clinic Level

- Improved new-patient screening forms
- Genetic counseling appointments coincide with other departmental visits
- Optimized genetic counseling scheduling template

Supportive

- Created patient education document
- Group email for urgent genetic counseling appointment requests
- Patient/clinic tracking and assisted genetic counseling referral placement

Universal Testing

Preliminary outcomes presented at SGO and ASCO meetings 2016

- All patients presenting to MD Anderson Gynecologic Oncology department for HGOC:
  - Includes cases of newly diagnosed and recurrent ovarian cancer.
  - Visit types: new diagnosis and treatment, treatment planning and coordination, and second opinions
- Initial appointments occurred between 9/1/2012 and 8/31/2015 (3 years)
- Data collection through 8/31/2016
- Collected: documentation of genetic counseling (GC) and/or genetic testing (GT), documented referrals/recommendations, results of genetic testing, and treatment implications (PARP inhibitor)

Universal Testing

- Preliminary data not available for archived slides

Universal Testing

Core Interventions:

Physician-Coordinated Genetic Testing

- Gyn Onc physician completes pre-test counseling and coordination genetic testing per national guidelines
- Referral to Genetic Counselor made if:
  - Patient has BRCA+/VUS result
  - Physician chooses to have Genetic Counselor coordinate testing
  - Patient requests genetic counseling, or has additional questions or needs

Universal Testing

Core Interventions:

Integrated Genetic Counseling Services

- 2.5 FTE Genetic Counselors in the Gyn Onc Department
- 4-5 Appointments available daily, Monday-Friday
- Appointments often available for same/next day requests
- Genetic counseling schedule optimization

Universal Testing

Core Interventions:

Assisted Genetic Counseling Referrals

- Staff screen clinic schedules for HGOC patients, genetic counseling, and genetic testing status
- If no documented genetic counseling or testing, the patient care team is notified, and a referral to genetic counseling is drafted, pending physician signature

Discussion

Discussion

What worked well

- Three core interventions:
  - Physician coordinated GT at Houston-area Locations
  - Integrated Genetic Counseling Services
  - Assisted Genetic Counseling Referrals
- Institution and department-wide effort (Moon shot)

What didn't work well

- Texas Medical Center campus physician coordinated testing
- Occasional physician coordinated testing issues at Houston-area locations
- Clinic tracking has been time and labor intensive

Discussion

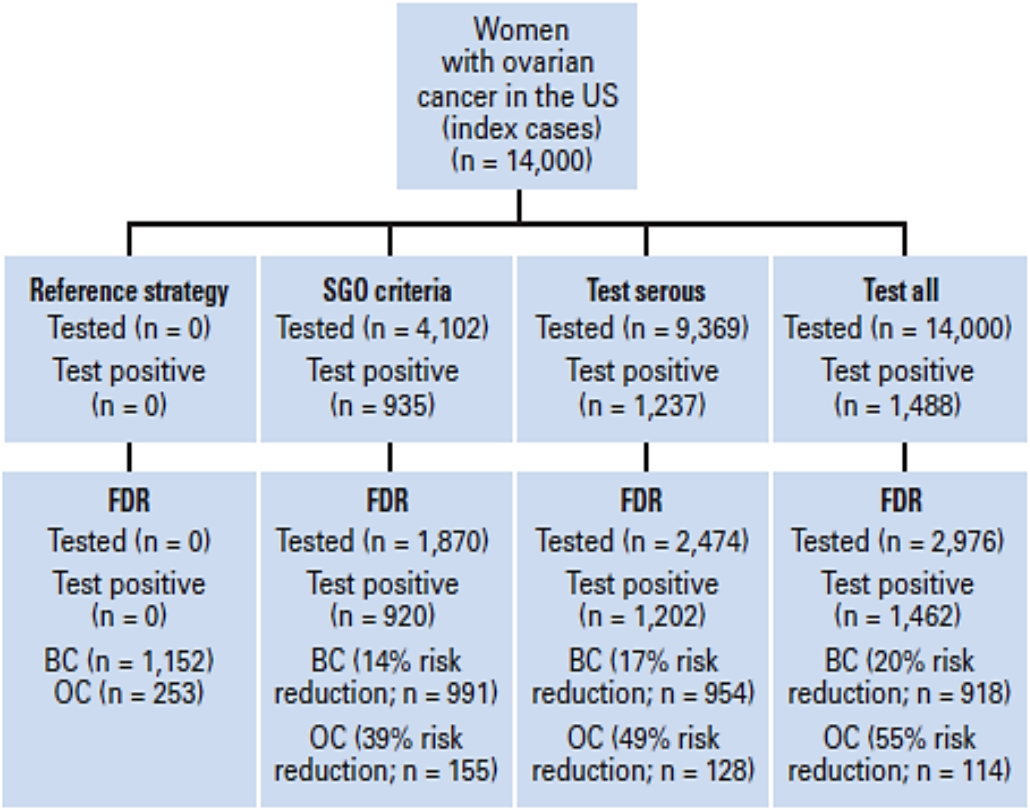
Limitations of our study

- Unique patient population?
- Patients with outside testing and incomplete clinical documentation
- How to account for the “Jolie Effect,” availability of gene panels, FDA approval of Lynparza™ (PARP inhibitor)?
- Implemented more than one intervention at one time, rather than discrete studies

Discussion

Areas for future research

- Combining additional interventions
- Determining patient perception, understanding, satisfaction
- Replicating results in other care settings
- IT or EMR interventions (sustainability?)
- Implications for families



Kwon, et al. "Preventing Future Cancers by Testing Women With Ovarian Cancer for BRCA Mutations." *Journal of Clinical Oncology* 28.4 (2009): 675-682.

Dissemination

Flagship 1A has partnered with MD Anderson Cancer Prevention and Control Platform.

CPCP develops, tailors, implements and disseminates evidence-based, community-focused programs involving public policy, public/professional education, or service delivery to advance cancer prevention, screening, early detection and survivorship. The goal is to achieve a measurable and sustainable reduction in the cancer burden, especially in the underserved in whom cancer and cancer risk factors predominate.

Dissemination

Dissemination

Dissemination Goals:

- Increase standard of care HBOC associated genetic counseling and genetic testing referrals, and improve adherence to guidelines
- Improve access to genetics services for cancer patients by anticipating and identifying barriers at each site
- Use insights gained at MD Anderson and Physician Network sites to help guide national recommendations and/or policy development

Acknowledgments

Flagship 1A team:
- Dr. Karen Lu, PI
- Dr. Banu Arun
- Holly Oakley
- Kimberly Muse

Gyn Onc Department:
- Cathy Burke
- Beth Garcia
- Dr. Charlotte Sun
- Dr. Shannon Westin
- Molly Daniels
- Nadine Rayes
- Brittany Batte
- Kate Dempsey

Thank you to all of our Gyn Onc department and Moon Shot physicians, staff, and patients!

Questions?

Contact

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