Women Veterans' Reproductive Health Research Across the Life Cycle:
from pregnancy to menopause

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Jodie Katon, PhD, MS
VA Health Services Research & Development
Career Development Awardee
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Poll Question #1
Which of the following are true for you? (mark all that apply)

- I provide healthcare for women Veterans
- I conduct women Veterans research
- I am a student studying reproductive health
- I am a woman Veteran
- My spouse/partner/family member is a woman Veteran
What is Reproductive Health?

“...a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes.” World Health Organization
## Women Veterans: Reproductive health across the life cycle

<table>
<thead>
<tr>
<th>STAGE OF LIFE</th>
<th>&lt;45 years old</th>
<th>45 - 64 years old</th>
<th>≥65 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Childbearing years</td>
<td>Perimenopause</td>
<td>Menopause</td>
</tr>
<tr>
<td></td>
<td>Military (deployment/combat)</td>
<td>Separation from military</td>
<td>Veteran status</td>
</tr>
</tbody>
</table>

### Reproductive Needs

- Menstrual health and disorders
- Contraception
- Pregnancy
- Infertility
- Cervical cancer screening
- Menopausal disorders
- Osteoporosis
- Breast cancer screening
- Sexual dysfunction
- Sexually transmitted infections (STI)
- Pelvic floor disorders
- Urinary conditions including incontinence
- Gynecology basic and specialty care

### Other Needs

- Primary care, mental health, and specialty care needs

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Growing Support for Women Veterans’ Reproductive Health Research: 2010-11

Pregnancy and Mental Health Among Women Veterans Returning from Iraq and Afghanistan

Kristin M. Mattocks, Ph.D., Melissa Skanderson, M.A., Joseph L. Goulet, Ph.D., Cynthia Brandt, M.D., Julie Worman, C.N.M., Erin Krebs, M.D., Rani Desai, Ph.D., Amy Justice, M.D., Elizabeth Yano, Ph.D., and Sally Haskell, M.D.

Using Research to Transform Care for Women Veterans: Advancing the Research Agenda and Enhancing Research–Clinical Partnerships

Elizabeth M. Yano, PhD, MSPH, Lori A. Bastian, MD, MPH, Bevanee Bean-Mayberry, MD, MHS, Seth Eisen, MD, MSc, Susan Frayne, MD, MPH, Patricia Hayes, PhD, Ruth Klap, PhD, Linda Lipson, MA, Kristin Mattocks, PhD, Geraldine McGlynn, MEd, Anne Sadler, PhD, Paula Schnurr, PhD, Donna L. Washington, MD, MPH.
Identified Research Priorities: Reproductive health

- Determine reproductive health needs of women Veterans
- Understand impacts of military exposure on pregnancy outcomes
- Track reproductive health care needs of military women and women Veterans across the lifespan
- Investigate best models of specialty reproductive care
- Assess costs of reproductive health services among women Veterans
- Evaluate VA implementation of the new pregnancy and newborn care legislation
- Evaluate workforce development and integration
- Examine impacts of first experiences with reproductive health services
- Examine relationships between reproductive health and mental health
- Evaluate variations in screening for sexually transmitted diseases
- Evaluate impacts of potential reversal of “Don’t Ask Don’t Tell” policies on VA care
- Study needs and level of demand for care among transgendered Veterans

Women Veterans’ Reproductive Health Research: The growing literature

*Up to 8/2017

Evidence Map: Women Veterans’ Health Research Literature
## Reproductive Health Needs of Women Veterans using VA Healthcare

<table>
<thead>
<tr>
<th>Age Group</th>
<th>18-44 years old</th>
<th>45-64 years old</th>
<th>≥65 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Menstrual disorders and endometriosis</td>
<td>Menopausal disorders</td>
<td>Osteoporosis</td>
</tr>
<tr>
<td>2</td>
<td>Other female reproductive organ conditions</td>
<td>Urinary conditions</td>
<td>Urinary conditions</td>
</tr>
<tr>
<td>3</td>
<td>STI and vaginitis</td>
<td>Other female reproductive organ conditions</td>
<td>Menopausal disorders</td>
</tr>
<tr>
<td>4</td>
<td>Urinary conditions</td>
<td>Benign breast conditions</td>
<td>Breast cancer</td>
</tr>
<tr>
<td>5</td>
<td>Pregnancy-related</td>
<td>STI and vaginitis</td>
<td>Benign breast conditions and other female reproductive organ conditions</td>
</tr>
</tbody>
</table>

Pregnancy, Deployment, and VA Maternity Care
VA Maternity Care: A timeline

- **1996**: maternity benefits added to VHA medical benefits package
  - includes prenatal care, labor and delivery, and postpartum care

- **2010**: Public Law 111-163 added care for newborn for first 7 days of life

- **2012**: Maternity Care Coordination Policy

  Nearly all care purchased from the community
VA Maternity Care:
Increasing demand

Pregnancy Complications: OEF/OIF Veterans using VA maternity care


*GDM = gestational diabetes, SIR = standardized incidence ratio, standardized by age & year
Could deployment affect pregnancy outcomes?
Results: 2,276 Live births
(1,571 non-deployers, 705 deployers)

Deployment:
Preterm birth and low birth weight


*adjusted for race/ethnicity and age at outcome
Deployment and Pregnancy Outcomes: Potential mechanisms

**Biologic**
(e.g. HPA-axis, inflammation)

**Mental health**
posttraumatic stress disorder (PTSD), depression, anxiety

**Behaviors**
(e.g. smoking, drinking)

**Environmental**
e.g. burn pits, chemical exposures

**Adverse pregnancy outcomes**
low birth weight/preterm birth

Deployment
Posttraumatic Stress Disorder (PTSD): Associations with pregnancy complications

Summary and Next Steps

- Women Veterans using VA maternity benefits may be a high risk group
  - High prevalence of complications has implications for chronic disease risk

- Deployment may increase risk for low birth weight and preterm birth

- Mental health may be an important explanatory factor

- **Next steps**: Identifying means of enhancing care to improve clinical and behavioral outcomes (CDA)
VA Gynecology Care

Requires a gynecologist or specialized training

- Uro-gynecology
- Reproductive endocrinology
- Gynecologic oncology

Specialty care

- Surgical and medical management of benign gynecologic conditions
- Menopausal symptom management
- Cervix/uterus/vulva/vaginal diseases
- Pelvic pain and sexual dysfunction
- Fertilization, IUDs, implants

Sub-specialty care

Basic care

(may be provided by a designated women’s health provider in primary care)

- Preventative screenings and health care
- Primary care
- Basic family planning
- Sexually transmitted infections
VA Gynecologists: Where are they practicing?

- Currently 104 out of 140 VA Healthcare Systems have at least one gynecologist

<table>
<thead>
<tr>
<th>Characteristics of VAs with at least one gynecologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility complexity, n (%)</td>
</tr>
<tr>
<td>Least complex (3)</td>
</tr>
<tr>
<td>Moderately complex (2)</td>
</tr>
<tr>
<td>Most complex (1a/1b)</td>
</tr>
<tr>
<td>Non-Metropolitan, n (%)</td>
</tr>
<tr>
<td>≥2,715 women Veterans in catchment area, n (%)</td>
</tr>
</tbody>
</table>
VA Gynecologists: Where are they ‘missing’?

- There are 36 VA Healthcare Systems without a gynecologist
  - 42% of these sites provide select gynecology services (e.g. IUD insertion/removal)

<table>
<thead>
<tr>
<th>Characteristics of VA facilities without a gynecologist</th>
</tr>
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<tbody>
<tr>
<td>Site complexity, n (%)</td>
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<tr>
<td>Least complex (3)</td>
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<tr>
<td>Most complex (1a/1b)</td>
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<tr>
<td>Non-Metropolitan n (%)</td>
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<tr>
<td>Median female uniques in FY14 (IQR)¹</td>
</tr>
</tbody>
</table>

¹IQR = interquartile range (25th percentile-75th percentile)
Quality of VA Gynecology Care: Hysterectomy

- 2nd most frequent surgery among all US women
- Treats gynecologic malignancies and benign conditions (e.g. fibroids)
- Minimally invasive techniques reduce hospital stays, speed recovery, and reduce infection
  - Racial/ethnic disparities documented outside VA

National trends include:
- ↓ overall hysterectomy rates
- ↑ minimally invasive techniques
Hysterectomy Rates in VA: Benign indications (per 1,000 women Veterans)

Mode of Hysterectomy in VA:
Benign indications

VA Provided

VA Paid

Minimally Invasive Hysterectomy in VA: Racial/ethnic disparities

Summary

- VA gynecologists practice in a range of settings
- VA has kept pace with national hysterectomy trends
- BUT, there are racial/ethnic disparities in minimally invasive hysterectomy in VA
  - These could be due to clinical differences or differences in pathways to hysterectomy
- **Next Steps:** mixed methods examining role of system and clinical factors in surgical decision making
Women Veterans and Menopause
Menopausal Symptoms: Prevalence and impact among women Veterans

- Hot flashes and night sweats (aka vasomotor symptoms (VMS)) are common

- VMS are associated with:
  - Increased healthcare utilization
  - Impairment of activities of daily living

- Women Veterans may be particularly vulnerable to VMS
Women Veterans and VMS: Prevalence of hot flashes and night sweats

1Adjusted for age, race, education, time since menopause, obesity, pack years of smoking, depression, diabetes, hypertension and physical activity

Women Veterans and VMS: Associations with health related quality of life

**Women Veterans and VMS:**
Associations with health related quality of life

1Adjusted for age, race, education, overall QOL at baseline, obesity, pack years of smoking, depression, diabetes, hypertension and physical activity

Summary

- Women Veterans do not necessarily experience more frequent or severe menopausal symptoms than non-Veterans
- BUT women Veterans may have greater difficulty managing these symptoms
- AND be more negatively impacted
- The role of mental health should be further explored
Overall Conclusions

- Women Veterans’ reproductive health research is a rapidly growing area of inquiry
  - A systematic review is currently underway

- Mental health has an important role in reproductive health and healthcare of women Veterans

- As VA continues to build programs to deliver reproductive healthcare, on-going evaluation is needed to ensure quality and equity
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Uche Uchenna, MD, MPH

VA HSR&D (CDA 13-266)
VA Office of Academic Affiliations
VA Women’s Health Services
VA Office of Health Equity
Resources

Questions: Jodie Katon (jodie.katon@va.gov)

VA Women Veterans Research Network (WHRN)

Reproductive Health Working Group
Jodie Katon: jodie.katon@va.gov
Elizabeth Patton: elizabeth.patton@va.gov
Laurie Zephyrin: laurie.zephyring@va.gov

General
Elizabeth Yano: elizabeth.yano@va.gov
Ruth Klap: ruth.klap@va.gov

Practice Based Research Network
Susan Frayne: susan.frayne@va.gov
Diane Carney: diane.carney@va.gov

Evidence Map: Women Veterans’ Health Research Literature

State of Reproductive Health in Women Veterans
https://www.womenshealth.va.gov/WOMENSHEALTH/docs/SRH_FINAL.pdf