

Evaluating the Baseline Prevalence of Menopausal Symptom Management and Change in Management Following Pharmacist-Led Education at a Rural VA Medical Center

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Women undergoing the menopausal transition period often experience bothersome symptoms that may negatively impact their quality of life. The most common symptoms are vasomotor symptoms (VMS) including hot flashes and night sweats and occur in up to 80% of menopausal women.¹ Hormone therapy (HT) is the most effective treatment for VMS and genitourinary syndrome of menopause (GSM).¹ However, HT is largely underutilized in symptomatic women and the undertreatment of symptoms has been shown to result in overall increased healthcare resource utilization and work productivity loss.^{1,2} A retrospective matched-cohort study collected health insurance claims (1999-2011) to match (1:1) women with untreated VMS with control.² The authors compared effects on healthcare resource utilization, work productivity loss, and associated costs between the two cohorts. They found that women with untreated VMS had significantly higher healthcare resource utilization than women in the control cohort with 82% higher for all-cause outpatient visits (95% CI, 81-83; $P < 0.001$) and 121% higher for VMS-related outpatient visits (95% CI, 118-124; $P < 0.001$).² In addition, the untreated VMS patients were found to have more indirect work productivity loss days than controls at 57% (95% CI, 51-63; $P < 0.001$) and more indirect cost per patient per year of \$770 (95% CI, 726-816 ($P < 0.001$)).² Undertreatment of menopause symptoms not only has a large impact on specific patient quality of life, but also on healthcare resource utilization and associated costs.

There are more than 2 million women

Abstract

Background: To determine the baseline prevalence of menopausal symptom management within primary care visits at Oscar G. Johnson VA Medical Center (OGJVAMC) and to identify the effectiveness of pharmacist-led education provided to primary care providers (PCPs) on menopause symptom management.

Methods: A retrospective chart review was completed to collect baseline data for women veterans aged 45-60 years old enrolled at OGJVAMC during June 2023. Charts were reviewed to determine if there were assessment, treatment plans, and diagnoses for vasomotor symptoms (VMS) and genitourinary syndrome of menopause (GSM). Pharmacist-led education and tools for enhanced symptom management were delivered. Another retrospective review was performed post-intervention to determine any increase in assessment, treatment discussions, treatment prescribed, and diagnoses.

Results: Baseline data was analyzed for 48 veterans, and 81% were assessed by PCPs for VMS and GSM. Ten veterans had experienced symptoms, and appropriate diagnosis was documented for two veterans. Seven veterans were on treatment with two on treatment initiated by a VA provider. Post-intervention, 24 veterans met criteria and 75% were assessed by PCPs for VMS and GSM. Eleven veterans were experiencing symptoms and four had documentation in the problem list. Seven had documented treatment discussions and six had treatment prescribed with four on treatment initiated by a VA provider.

Conclusions: More veterans post-intervention were on treatment for menopause symptoms prescribed by a VA provider. Treatment discussions slightly increased post-intervention. Veterans assessed for VMS and GSM were similar pre- and post-intervention. Diagnoses added to problem lists remains an area for improvement.

Keywords: Menopause, pharmacist-led education, vasomotor symptoms, genitourinary syndrome of menopause

veterans currently living in the United States and over 600,000 receive care across Veterans Affairs (VA) institutions each year.³ Women veterans are the most rapidly growing veteran population with an expected increase from 4% in 2000 to 18% by 2040.⁴ As the women veteran population continues to expand, there will be an increased need for education provided to health care professionals surrounding their care. Pharmacists have a unique role in providing education and medication therapy management expertise.

A systematic review and meta-analysis were performed related to pharmacist-led educational interventions to reduce medication errors.⁵ There were twelve studies included and the educational interventions targeted nurses and resident physicians.⁵ All of the studies included didactic lectures as part of their intervention.⁵ Ten of the twelve studies found a significant decrease in the incidence of medication errors post-educational intervention.⁵ The pooled odds ratio was statistically significant 0.38 (95% CI 0.22 to 0.650 P=0.0004).⁵ This study shows the value that pharmacists have in providing education to other health care professionals. Pharmacist-led education can be applied to help improve patient care in a multitude of practice settings.

A cross-sectional, anonymous survey, including questions regarding knowledge of hormone therapy and other menopause management strategies, was e-mailed to trainees in family medicine, internal medicine, and obstetrics and gynecology at US residency programs in 2017.⁶ A total of 183 residents responded, and of the participants, 63 (34.4%) answered that they would not offer hormone therapy to a symptomatic menopausal woman without any contraindications.⁶ Of 177 respondents, 36 (20.3%) reported not receiving menopause lectures during residency.⁶ Only 12 (6.8%) of respondents reported feeling adequately prepared to manage women experiencing menopause.⁶ This survey identified important gaps in knowledge regarding menopause symptom management in family medicine, internal medicine, and obstetrics and gynecology residency trainees.

A health system-based, cluster-randomized intervention study was aimed at promoting greater detection

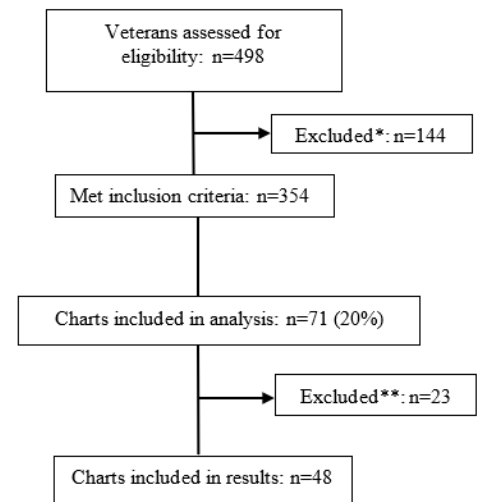
and treatment of GSM.⁷ They provided training surrounding diagnosis and treatment of GSM at nine total primary care and gynecology clinics, which served as the intervention group. The clinics in the control group received no training or notification about the tools implemented.⁷ The training consisted of electronic health record clinical decision support tools, an online continuing medical education (CME) video, an in-person educational presentation, and a printed guide to the electronic tools and online CME.⁷ The intervention groups received these trainings. The primary outcome was vulvovaginal diagnoses made at visits for women aged 55 years and older over a 1-year period.⁷ The authors found that the proportion of visits that included a vulvovaginal diagnosis with the intervention group versus control (7.2% vs 5.8%; odds ratio, 1.27; 95% CI 0.65 to 5.21 P=0.48) was not statistically significant.⁷ This led to the conclusion that further efforts for improving postmenopausal care should consider ongoing clinician education.⁷ This study emphasizes the importance of education to enhance assessment and diagnosis of genitourinary syndrome of menopause.

As the women veteran population ages, it is important that health care professionals be familiar with the pathophysiology, diagnosis, and symptom management of perimenopause and menopause. The aim of this quality improvement project was to assess and promote health care professional confidence related to menopausal symptom management through pharmacist-led education. The objectives were to determine the baseline prevalence of menopausal symptom management within primary care visits at Oscar G. Johnson VA Medical Center (OGJVAMC) and to assess the effectiveness of pharmacist-led education and associated tools delivered to primary care providers.

Methods

A retrospective chart review was completed to collect baseline data for women veterans aged 45-60 years old enrolled at OGJVAMC and corresponding community-based outpatient clinics during June 2023. Exclusion criteria included veterans who were not assigned a local Patient Aligned Care Team (PACT) or were deceased. Additional exclusion

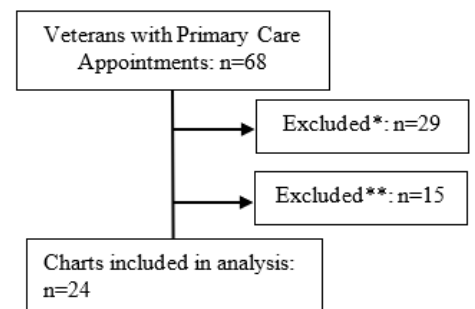
FIGURE 1. Number of Veteran Charts Reviewed for Baseline Data Analysis



*Excluded due to no local PACT or deceased

**Excluded due to not experiencing perimenopause, menopause, or early postmenopause yet in their life or experienced prior to being connected with VA

FIGURE 2. Number of Veteran Charts Reviewed for Post-Intervention Data Analysis



*Excluded due to primary care appointment was not annual or women's wellness visit

**Excluded due to not experiencing perimenopause, menopause, or early postmenopause yet in life

criteria included the onset of menopause prior to being connected with the VA, or if the veteran had not experienced perimenopause yet in their life. Inclusion criteria included women aged 45-60 years who were currently experiencing or had gone through perimenopause, menopause, or early postmenopause in the past. Veterans who were eligible for review are depicted in Figure 1.

Data collected included assessment of VMS and GSM during the time of perimenopause, menopause, and early

postmenopause. A veteran was determined to have been assessed for VMS and GSM if it was documented in the medical record during a primary care visit at the VA that they had been asked if they were having menopause-related symptoms including hot flashes and common symptoms of GSM such as vaginal dryness, painful intercourse, and dysuria. If a veteran was found to have been experiencing symptoms, further data collection was completed to determine if there was documentation of a treatment discussion, diagnosis on the problem list, and any treatment prescribed. Due to the consistency of the data across preliminary analysis, the project team decided to collect data for a randomized 20% of the eligible veterans. This data was utilized to support the request for increased education efforts surrounding management of menopausal symptoms.

As a result of the initial veteran data collected, a pharmacist-led educational in-service was conducted. This included an interactive, evidence-based didactic lecture focused on menopausal symptom management. There was information provided related to updated guideline recommendations, diagnosis, risks and benefits of treatment, monitoring, and documentation recommendations. In addition, a prescribing order menu was created to allow a more streamlined approach to choosing the most appropriate available treatment modalities at the facility as shown in Images 1-6 in the appendix. This order menu was created based upon VA formulary products as of June 14, 2024. A provider documentation template was created for enhanced assessment of VMS and GSM shown in Image 7.

Post-intervention, an additional retrospective chart review was conducted for women veterans aged 45-60 years who had a primary care appointment between March 8, 2024 and April 8, 2024. Veterans were excluded if they had not yet experienced perimenopause or menopause or if the primary care appointment was an acute visit and not the annual visit or women's wellness exam. Veterans who were eligible for review are depicted in Figure 2. Charts were reviewed to determine if there was any increase in assessment of VMS and GSM, documentation of treatment discussions if appropriate, treatment prescribed, and diagnoses added to patient problem lists

post-intervention. Principles outlined in the Declaration of Helsinki were followed throughout the duration of this project.

The primary outcome of this quality improvement project was to determine the baseline prevalence of menopausal symptom management within primary care visits at OGJVAMC. Secondary outcomes included determining the effectiveness of pharmacist-led education delivered to primary care providers. This was completed through evaluating if there was a change in percentage of patients assessed for VMS and GSM, documentation of treatment discussions if appropriate, and diagnoses added to patient problem lists.

Results

Of the 71 charts included in data analysis, 48 met inclusion criteria. Demographics are shown in Table 1.

Of the 48 eligible veteran charts evaluated, 39 (81%) were assessed for VMS and GSM symptoms during the time surrounding menopause. Ten (26%) veterans were experiencing VMS or GSM symptoms, and of those, six (60%) had a treatment discussion documented in the medical record. Seven (70%) veterans were on treatment for symptom management as shown in Table 2. The various treatments included gabapentin, clonidine, black cohosh, estradiol patch, estradiol tablet, and conjugated estrogens and medroxyprogesterone acetate. Of the seven veterans with symptoms, two had a diagnosis on their problem list. Of note, 38 (79%) of the total veterans included in analysis results did not have a diagnosis in their problem list of perimenopause, menopause, post-menopause, or menopause symptoms.

Twenty-four veterans were identified as meeting criteria for data analysis post-intervention. Demographics are shown in Table 3.

Of the post-intervention veterans analyzed, 18 (75%) were assessed for VMS or GSM symptoms. Eleven (46%) veterans were experiencing symptoms as outlined in Table 4, and seven (64%) of those had documented treatment discussions. Of veterans with symptoms, 4 (36%) had diagnoses added to the problem list. Six veterans were on treatment and four of those were on treatment originally prescribed by a VA provider.

TABLE 1. Baseline Data Veteran Demographics

Characteristic	No. (%) (n=48)
Age	
45-49	7 (14.58)
50-54	19 (39.58)
55-60	22 (45.83)

TABLE 2. Veterans with VMS or GSM Symptoms

Variable	No. (%) (n=10)
Documented treatment discussion	6 (60.00)
On treatment	7 (70.00)
On treatment originally prescribed at VA	2 (20.00)
On treatment originally prescribed in community	4 (40.00)
On treatment self-prescribed OTC	1 (10.00)
Diagnosis of symptoms on problem list	2 (20.00)

Abbreviations: OTC (over the counter), GSM (genitourinary syndrome of menopause), VA (Veterans Affairs), VMS (vasomotor symptoms)

TABLE 3. Post-Intervention Veteran Demographics

Characteristic	No. (%) (n=24)
Age	
45-49	5 (20.83)
50-54	6 (25.00)
55-60	13 (54.17)

Post-intervention data showed that assessment of VMS and GSM was similar pre- and post-intervention (percent change: -6.00%). Documentation of treatment discussions slightly increased post-intervention (percent change: 3.63%). Documentation of diagnoses on patient problem lists remains an area for improvement (percent change: 16.36%). More veterans post-intervention were prescribed treatment originally by a VA provider (percent change: 16.36%), which may indicate some increased comfortability

in prescribing various treatment options post-intervention.

Discussion

Pharmacist-led educational services surrounding the topic of menopausal symptom management may result in increased awareness and comfortability surrounding the various treatment modalities. The documentation templates developed were utilized by some providers to guide the assessment of VMS and GSM during patient encounters. This quality improvement project produced results similar to another study focusing on provider education on menopause symptom management topics and the effect education had on patient care.⁴ The study found that the difference in vulvovaginal diagnosis in the intervention group compared to the control group was not statistically significant.⁴ Our study showed mild improvement of diagnosis documented on patient problem lists with pre-intervention at 20% and post-intervention at 36.36%. However, this remains an area for improvement overall. Ongoing clinician education, versus singular education sessions should be considered to enhance awareness, diagnosis, and treatment of menopause related symptoms.

There are limitations associated with this quality improvement project. First, the amount of data collected post-intervention was modest due to having a limited timeframe. Education through oral presentation was only provided on one occasion, and several new providers started practice at the medical center in the weeks after the education was provided, which may have affected results. To remedy this limitation, another presentation will be provided and recorded for future viewing availability to new onboarding providers.

Conclusions

Pharmacist involvement in education surrounding women's health topics may be beneficial to provide improved quality of care surrounding menopausal symptom management. The baseline prevalence of menopause symptom management within primary care visits was identified as having opportunities for improvement. More specifically, diagnoses added to patient problem lists, treatment discussions, and prescribing treatment if warranted

were opportunities identified for further advancement of management at the local facility. Implementation of Women's Health Clinical Pharmacist Practitioners or a specific women's health e-consult service could help to enhance treatment of menopausal symptoms.

Pharmacists have a unique opportunity to provide education across many interprofessional groups on specific disease state topics. This quality improvement project showed that pharmacist-led education was useful in providing tools to improve the management of menopause symptoms at OGJVMC.

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TABLE 4. Post-Intervention Veterans with VMS or GSM Symptoms

Variable	No. (%) (n=11)
Documented treatment discussion	7 (63.63)
On treatment	6 (54.55)
On treatment originally prescribed at VA	4 (36.36)
On treatment originally prescribed in community	2 (18.18)
On treatment self-prescribed OTC	0 (00.00)
Diagnosis of symptoms on problem list	4 (36.36)

Abbreviations: VA - Veterans Affairs; OTC - over the counter

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Appendix

IMAGE 1. Menopause Symptom Management Prescribing Order Menu

[+] VASOMOTOR SYMPTOMS (VMS)
 [+] GENITOURINARY SYNDROME OF MENOPAUSE (GSM)

NONPHARMACOLOGIC
 Recommendations per the NAMS 2023 Nonhormone Therapy Position Statement

MOVE! Program
 --Weight loss MAY be considered for improving VMS based upon limited evidence consensus and expert opinion- level II-III recommendation

Mental Health Referral
 --Cognitive Behavioral Therapy has been shown to reduce the bother and interference associated with VMS (good and consistent scientific evidence - level I recommendation)

Whole Health Program
 --Whole health options are available and MAY be considered for improving various aspects of VMS and GSM based on limited evidence

DIETARY SUPPLEMENTS
 Recommendations per the NAMS 2023 Nonhormone Therapy Position Statement, NAMS 2020 Genitourinary Syndrome of Menopause Position Statement, AACE/ACE Position Statement on Menopause-2017 Update, and Endocrine Society 2015 Clinical Practice Guideline on Treatment of the Symptoms of the Menopause)

Limited or inconsistent evidence of benefit - not recommended
 --Soy foods or extracts
 --Soy metabolite equal
 --Pollen extract
 --Ammonium succinate
 --Lactobacillus acidophilus

Without demonstrated evidence of benefit - not recommended
 --Black cohosh

Lack of available evidence
 --Cannabinoids

Appear ineffective for genitourinary syndrome of menopause
 --Black cohosh
 --Multibotanical supplement
 --Soy

Additional resource for safety, efficacy, adverse effects, and drug interaction information:

[+] Natural Medicines Database
 [+] Menopause Medication Slides Link
 [+] Converting Between Estrogen Products

IMAGE 2. Vasomotor Symptom Management Prescribing Order Menu Main Page

VASOMOTOR SYMPTOMS (VMS)

[+] NONHORMONAL TREATMENT
 [+] HORMONAL TREATMENT WITH UTERUS
 [+] HORMONAL TREATMENT WITHOUT UTERUS

IMAGE 3. Vasomotor Symptom Management Nonhormonal Prescribing Order Menu

VMS NONHORMONAL TREATMENT

NONHORMONAL TREATMENT

Formulary
 [+] Paroxetine Tablet
 [+] Citalopram Tablet
 [+] Escitalopram Tablet
 [+] Venlafaxine IR Tablet
 [+] Venlafaxine XR Capsule
 [+] Desvenlafaxine [Eqv-Pristiq] SA Tablets
 [+] Gabapentin Capsule
 [+] Gabapentin Tablet
 [+] Oxybutynin Tablet
 [+] Oxybutynin Chloride SA Tablet

Nonformulary
 Paroxetine mesylate (BRISDELLE)
 Fezolinetant (VEOZAH)

[+] [CLICK HERE](#) to submit Nonformulary Request

Appendix Cont.

IMAGE 4. Vasomotor Symptom Management Hormonal Treatment with Uterus Prescribing Order Menu

VMS TREATMENT HORMONAL WITH UTERUS

HORMONAL TREATMENT WITH UTERUS

FORMULARY

COMBINATION THERAPIES

- (+) Estradiol 0.05/Norethindrone 0.14 Patch
- (+) Estradiol 0.05/Norethindrone 0.25 Patch
- (+) Estradiol 0.045/Levonorgestrel 0.015 Patch
- (+) Conjugated Estrogens 0.3/Medroxyprogesterone 1.5MG (PREMPRO)
- (+) Conjugated Estrogens 0.45/Medroxyprogesterone 1.5MG (PREMPRO)
- (+) Conjugated Estrogens 0.625/Medroxyprogesterone 2.5MG (PREMPRO)
- (+) Conjugated Estrogens 0.625/Medroxyprogesterone 5MG (PREMPRO)
- (+) Conjugated Estrogens 0.625/Medroxyprogesterone 5MG (PREMPHASE)
- (+) EE 2.5mcg/Norethindrone 0.5mg Tab (FEMHRT-LO)
- (+) EE 5mcg/Norethindrone 1mg Tablet (FEMHRT)

ESTROGENS (must choose additional progestogen)

- (+) Estradiol 0.025mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.0375mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.05mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.075mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.1mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.5mg Tablet
- (+) Estradiol 1mg Tablet
- (+) Estradiol 2mg Tablet

SECOND LINE OPTION ESTROGENS

- (+) Estradiol 0.025mg Patch (CLIMARA)
- (+) Estradiol 0.0375 Patch (CLIMARA)
- (+) Estradiol 0.05mg Patch (CLIMARA)
- (+) Estradiol 0.06mg Patch (CLIMARA)
- (+) Estradiol 0.075mg Patch (CLIMARA)
- (+) Estradiol 0.1mg Patch (CLIMARA)
- (+) Esterified Estrogens 0.3mg Tablet (MENEST)
- (+) Esterified Estrogens 0.625mg Tablet (MENEST)
- (+) Esterified Estrogens 1.25mg Tablet (MENEST)
- (+) Esterified Estrogens 2.5mg Tablet (MENEST)

PROGESTOGENS (must choose additional estrogen)

- (+) Medroxyprogesterone 2.5mg Tablet
- (+) Medroxyprogesterone 5mg Tablet
- (+) Medroxyprogesterone 10mg Tablet
- (+) Micronized Progesterone Capsule (PROMETRIUM)

NONFORMULARY

COMBINATION THERAPIES

- Estradiol/norethindrone Tablet (ACTIVELLA, AMBELZ, MIMVEY)
- Estradiol/drospirenone Tablet (ANGELIQ)
- Estradiol/norgestimate Tablet (PREFEST)
- Conjugated Estrogens/Bazedoxifene Tablet (DUAVEE)

ESTROGENS (must choose additional progestogen)

- Estradiol transdermal gel (DIVIGEL, ELESTRIN, ESTROGEL)
- Estradiol transdermal spray (EVAMIST)
- Estradiol acetate vaginal ring (FEMRING)

PROGESTOGENS (must choose additional estrogen)

- Norethindrone Tablet (AYGESTIN)
- Progesterone vaginal gel (CRINDONE)

(+) [CLICK HERE to submit Nonformulary Request](#)

IMAGE 5. Vasomotor Symptom Management Hormonal Treatment without Uterus Prescribing Order Menu

VMS HORMONAL TREATMENT WITHOUT UTERUS

HORMONAL TREATMENT WITHOUT UTERUS

FORMULARY

- (+) Estradiol 0.025mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.0375mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.05mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.075mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.1mg/Day Twice Weekly Patch (VIVELLE-DOT)
- (+) Estradiol 0.5mg Tablet
- (+) Estradiol 1mg Tablet
- (+) Estradiol 2mg Tablet

SECOND LINE OPTION ESTROGENS

- (+) Estradiol 0.025mg Patch (CLIMARA)
- (+) Estradiol 0.0375mg Patch (CLIMARA)
- (+) Estradiol 0.05mg Patch (CLIMARA)
- (+) Estradiol 0.06mg Patch (CLIMARA)
- (+) Estradiol 0.075mg Patch (CLIMARA)
- (+) Estradiol 0.1mg Patch (CLIMARA)
- (+) Esterified Estrogens 0.3mg Tablet (MENEST)
- (+) Esterified Estrogens 0.625mg Tablet (MENEST)
- (+) Esterified Estrogens 1.25mg Tablet (MENEST)
- (+) Esterified Estrogens 2.5mg Tablet (MENEST)

NONFORMULARY

- Estradiol transdermal gel (DIVIGEL, ELESTRIN, ESTROGEL)
- Estradiol transdermal spray (EVAMIST)
- Estradiol acetate vaginal ring (FEMRING)

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Appendix Cont.

IMAGE 6. Genitourinary Syndrome of Menopause Prescribing Order Menu

GENITOURINARY SYNDROME OF MENOPAUSE (GSM)

NONHORMONAL TREATMENT

FORMULARY

- (+) Lubricant Moisturizing Vaginal Gel (REPLENS)
- (+) Vaginal Lubricant (various)

NONFORMULARY

- Lubricant, Vaginal Lotion
- Lubricant, Vaginal Suppository

(+) [CLICK HERE to submit Nonformulary Request](#)

HORMONAL TREATMENT

FORMULARY

- (+) Estradiol 0.01% Vaginal Cream (ESTRACE)
- (+) Estradiol 10 mcg Vaginal Tablets (VAGIFEM, YUAFEM)

NONFORMULARY

- Estradiol Vaginal Inserts (IMVEXXY)
- Prasterone (DHEA) Vaginal Inserts (INTRAROSA)
- Estradiol Vaginal Ring (ESTRING)
- Estradiol Acetate Vaginal Ring (FEMRING)
- (FEMRING-systemic, only use if also experiencing VMS)
- Ospemifene Oral Tablet

(+) [CLICK HERE to submit Nonformulary Request](#)

IMAGE 7. Provider Documentation Template for Assessment of Vasomotor Symptoms and Genitourinary Syndrome of Menopause

All Required Fields have Values

Menopausal Symptom Management

Vasomotor Symptoms (VMS)

Frequency: _____

With Sweating: Yes No

Causes Cessation of Activity: Yes No

Severity: mild moderate severe

Past Treatment trials: _____

Genitourinary Syndrom of Menopause (GSM)

Vaginal Dryness: Yes No

Vaginal and/or vulvar irritation/itching: Yes No

Dysuria: Yes No

Vaginal pain associated with intercourse: Yes No

Vaginal bleeding associated with intercourse: Yes No

Other bothersome symptoms: _____

Past treatment trials: _____

Discussion of Nonhormonal Therapy today: _____

Discussion of Hormone Replacement Therapy today: _____

Any contraindications: _____