Working together to improve health care quality, outcomes, and affordability in Washington State.

Hysterectomy

January 2018

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Dr. Robert Bree Collaborative Background

The Dr. Robert Bree Collaborative was established in 2011 by Washington State House Bill 1311 *"…to provide a mechanism through which public and private health care stakeholders can work together to improve quality, health outcomes, and cost effectiveness of care in Washington State."* The Bree Collaborative was modeled after the Washington State Advanced Imaging Management (AIM) project and named in memory of Dr. Robert Bree, a pioneer in the imaging field and a key member of the AIM project.

Members are appointed by the Washington State Governor and include public health care purchasers for Washington State, private health care purchasers (employers and union trusts), health plans, physicians and other health care providers, hospitals, and quality improvement organizations. The Bree Collaborative is charged with identifying up to three health care services annually that have substantial variation in practice patterns, high utilization trends in Washington State, or patient safety issues. For each health care service, the Bree Collaborative identifies and recommends best-practice evidence-based approaches that build upon existing efforts and quality improvement activities aimed at decreasing variation. In the bill, the legislature does not authorize agreements among competing health care providers or health carriers as to the price or specific level of reimbursement for health care services. Furthermore, it is not the intent of the legislature to mandate payment or coverage decisions by private health care purchasers or carriers.

See **Appendix A** for a list of current Bree Collaborative members.

Recommendations are sent to the Washington State Health Care Authority for review and approval. The Health Care Authority (HCA) oversees Washington State's largest health care purchasers, Medicaid and the Public Employees Benefits Board Program, as well as other programs. The HCA uses the recommendations to guide state purchasing for these programs. The Bree Collaborative also strives to develop recommendations to improve patient health, health care service quality, and the affordability of health care for the private sector but does not have the authority to mandate implementation of recommendations.

For more information about the Bree Collaborative, please visit: www.breecollaborative.org.

Hysterectomy is a common surgical procedure for women. However, there is a high degree of variation in rates of the procedure, indicating a lack of appropriateness standards and potential overuse. The Bree Collaborative elected to address this topic and convened a workgroup to develop recommendations that met from March 2017 – January 2018.

See **Appendix B** for the Hysterectomy workgroup charter and a list of members.

See **Appendix C** for results of the Guideline and Systematic Review Search Results.

Problem Statement

Hysterectomy is one of the most frequent surgical procedures in the United States with approximately 600,000 performed annually.[1] Hysterectomy rates are highly variable by hospital and by region, being one of the first published surgical procedures with rates differing primarily based on location, indicating overuse.[2] Cost of hysterectomy also varies by region, from an average of $9,661 (range $6,243 - $15,335) in the Mid-Atlantic to $22,534 (range $15,380 - $33,797) in the Pacific region.[3] Rates are also shown to be highly variable based on location in Washington State through Washington Health Alliance analysis.[4]

Nationally, the most common indication for hysterectomy is uterine fibroids with 150,000 – 200,000 cases annually. Other indications include abnormal menstrual bleeding, gynecologic cancer, endometriosis, chronic pelvic pain, and uterine prolapse. [5,6] Types of hysterectomy include:[7]

- Total – removal of entire uterus including the cervix
- Supracervical (subtotal or partial) – removal of the upper part of the uterus not including the cervix (must be done laparoscopically or abdominally)
- Radical – typically in cases involving cancer and therefore outside of the scope of these recommendations – removal of the entire uterus including the cervix, parametrium, and part of the vagina. Can also include removal of other structures around the uterus (e.g., ovaries, fallopian tubes), but not necessarily.

However the procedure has a risk of complications including bladder or bowel injury, bleeding, urinary incontinence, wound infection, blood clots, nerve and tissue damage, among others.[5,7] Satisfaction rates tend to be comparable to medical management, with higher patient-reported sexual functioning after less invasive procedures (i.e., uterine artery embolization compared to hysterectomy after 2 years).[8,9] Use of medical management or alternatives to hysterectomy that spare the uterus for abnormal uterine bleeding, uterine fibroids, endometriosis, or pelvic pain are underutilized, especially for women over 40.[10]

Disparities

Type of hysterectomy offered to patients has been found to vary based on surgeon-specific factors, including surgeon's training and experience as well as the patient's insurance type.[11,12] Racial and ethnic differences in the rate, route, and probability of complications are also commonly found, partially due to differences in disease burden from fibroids and endometriosis.[13] Black women are significantly more likely to undergo hysterectomy for fibroids, potentially due to larger fibroid size and greater numbers, however black women are also more likely to experience complications as compared to white non-Hispanic women.[12] White women are also more likely to undergo minimally invasive hysterectomy (i.e., vaginal, laparoscopic, or robotic-assisted procedures) vs. laparotomy or open surgery as compared to Hispanic and black patients.[8]

Recommendation Development

The workgroup's goal is to promote appropriate use of hysterectomy, including pre-surgical counseling and evaluation, while recognizing individual variation based on clinical opinion and patient preference. Workgroup members developed the recommendations to encourage clinicians to review guidelines with patients prior to hysterectomy to reduce unnecessary or inappropriate hysterectomies. The workgroup developed three focus areas:

1. Assessment and medical management, by indication
2. Uterine sparing procedures, by indication
3. Surgical procedure including follow-up care, emphasizing the enhanced recovery after surgery protocol and use of a minimally invasive approach

The workgroup reviewed clinical practice guidelines, available evidence, and relied on clinical expertise where evidence was lacking. See **Appendix C** and the references for a complete list of available guidelines and systematic reviews.

The recommendations apply to the following conditions (i.e., inclusions):

- Uterine leiomyoma (Fibroids)
- Abnormal menstrual bleeding
- Endometriosis
- Uterine prolapse
- Adenomyosis
- Pain

The recommendations do not address the following clinical scenarios (i.e., exclusions):

- Pregnancy
- Cancer and cancer prevention
- Emergency situations (e.g., due to trauma, childbirth)
- Gender reassignment surgery
- Incidental hysterectomy with indicated oophorectomy

Assessment and Medical Management

1. Full gynecologic workup
    a. Confirmation of lack of viable pregnancy
    b. Discussion of desire for future fertility.
    c. Discussion and documentation of symptoms (e.g., pain, bleeding).
    d. Discuss comorbidities
    e. Endocrine assessment (e.g., thyroid)
    f. Coagulation testing
    g. Assessments by indication in **Table 1**.
    h. Additional assessments, as indicated
2. Engage the patient. Shared decision making using a patient decision aid approved by the Washington State Health Care Authority, if available. If not available, use a patient decision aid that includes a conversation about the patient's goals of care including desire for future pregnancy and gains patient understanding of the risks and benefits of medical management and uterine sparing procedures for the specified indication.[14,15]
3. Trial of medical management unless symptoms are severe. Use checklist by indication (e.g., uterine leiomyoma or fibroids, abnormal menstrual bleeding, endometriosis, uterine prolapse, adenomyosis, and/or pain) as defined in Table 1.
4. Document use of medical management, severe symptoms, or patient preference and selection to move forward with uterine sparing procedures.

Table 1: Assessment and Medical Management by Indication

Indication	Assessment	Medical Management
Uterine Leiomyoma (Fibroids)[16,17]	*Patients will present with variable clinical manifestations as symptoms associated with fibroid(s) relate to location, size, and number* • Confirmation of absence of an active infection • Confirmation of diagnosis through cross-sectional imaging (preferably ultrasound)	*Treatment will be based on size, number, and location* • Trial of nonsteroidal anti-inflammatory drug (NSAID), if not contraindicated • Trial of hormonal management, if not contraindicated • Gonadotropin-releasing hormone (GnRH) agonist, unless contraindicated. More than six months without hormonal add-back therapy is not recommended. • Other hormonal modulators

Indication	Assessment	Medical Management
Abnormal Menstrual Bleeding[18]	• Assessment for signs of hypovolemia and anemia • Assessment for hemodynamic instability • Classification of cause as structural or nonstructural using PALM-COEIN system (Polyp, Adenomyosis, Leiomyoma, Malignancy and hyperplasia – Coagulopathy, Ovulatory dysfunction, Endometrial, Iatrogenic, Not yet classified) • Diagnostic imaging testing if indicated (i.e., saline infusion sonohysterography (SIS), transvaginal ultrasonography, Hysteroscopy) • Additional diagnostic testing when appropriate (i.e., HCG, CBC, thyroid function and prolactin, liver function, coagulation studies, hormone assays; pap smear, endometrial sampling)	**Structural** • Surgical treatment precludes any hormonal management **Non-Structural** • Ovulatory dysfunction: o Trial of hormonal (combined hormonal contraceptive and progestin only therapies) management, unless contraindicated o Pharmacotherapy (e.g., NSAIDs, tranexamic acid) • Thyroid dysfunction: adjustment of thyroid medication • Coagulopathy: combined hormonal contraceptive • Hyperprolactinemia: Bromocriptine and Cabergoline • Endometrial Hyperplasia (non-atypical): oral progestins, levonorgestrel intrauterine device
Endometriosis[19,20]	*Variable clinical manifestations are possible that can be symptomatic or asymptomatic. Refer to the abnormal uterine bleeding or pain assessment, if relevant.* • Confirm endometriosis by histology on biopsy, laparoscopic visualization, or identification of endometrioma on transvaginal ultrasound	• Trial of NSAID, if not contraindicated • Trial of hormonal management, if not contraindicated • GnRH agonist • Aromatase inhibitor (AI) • Trial of Danazol
Uterine Prolapse[21,22,23]	• Assess urinary and fecal incontinence and/or retention • Assess for multi-compartment pelvic wall defects	• Consider therapeutic alternatives including pelvic floor exercises and pessaries. • Advise on risks of long-term pessary use and do not use if there is evidence of an active infection, severe ulceration, silicone or latex allergy, or if the patient is unlikely to follow-up.

Adenomyosis[24]	• Ultrasound • Imaging as needed	• Trial of (if not contraindicated): o Non-steroidal anti-inflammatory drugs o Oral contraceptives o LNg IUD o GnRH o Aromatase inhibitors o Trial of Danazol o Antidepressants
Pelvic Pain	• Pelvic ultrasound • Consider other sources (e.g., urinary, gastrointestinal, musculoskeletal, psychological) • Diagnostic laparoscopy, endoscopy, cystoscopy • Imaging as needed	• Trial of (if not contraindicated): o Non-steroidal anti-inflammatory drugs o Oral contraceptives o LNg IUD o GnRH o Aromatase inhibitors o Trial of Danazol o Antidepressants • Pelvic floor rehabilitation

Uterine Sparing Procedures

1. Discuss uterine sparing procedures with the patient. Use checklist by indication as defined in **Table 2**.
2. Document use of uterine sparing procedures, severe symptoms, or patient preference and selection to move forward with hysterectomy. Discuss the hysterectomy approach with the patient including which route will maximize benefits and minimize risks based on the patient's individual clinical situation.[24]

Table 2: Uterine Sparing Procedures by Indication

Indication	Uterine Sparing Procedure
Uterine Leiomyoma (Fibroids)[16, 17]	*Discuss possible recurrence of leiomyomas with the patient and whether alternative treatment would be appropriate based on the severity of the condition and risk of recurrence.* • Uterine artery embolization. • For submucosal leiomyomas, the selection of endometrial ablation versus hysteroscopic myomectomy depends on size, number, and intracavitary involvement. • Myomectomy (laparoscopic or open), if amenable based on clinical opinion. Type (i.e., abdominal, laparoscopic, hysteroscopic) should be made at the surgeon's discretion based on patient-specific factors (e.g., size).
Abnormal Menstrual Bleeding[18]	**Structural** • Endometrial ablation • Hysteroscopic endometrial polypectomy • Hysteroscopic myomectomy • Hysterectomy for atypical complex endometrial hyperplasia
	Non-Structural Refractory or contraindication to medical management for nonstructural abnormal menstrual bleeding causes: Surgical options • Endometrial ablation
Endometriosis[19,20]	• Laparoscopic/open surgery- excision or ablation of endometriotic lesions, lysis of adhesions, removal of endometrioma.

Indication	Uterine Sparing Procedure
Uterine Prolapse[21,22,23]	• Repair of cystocele, rectocele/enterocele • Colpocleisis
Adenomyosis[24]	• Endometrial ablation • Laparoscopic/open adenomyomectomy
Pelvic Pain	Refer to earlier section

Surgical Procedure

We recommend following the enhanced recovery after surgery (ERAS) protocol and using a minimally invasive approach, when appropriate. The ERAS protocol fits well with gynecological surgery and has been associated with reduced opioid use, length of stay, cost; stable readmission and incidence of side effects, and improved patient satisfaction.[25,26] We also recommend using a minimally invasive approach, if not contraindicated. Multiple studies have shown a minimally invasive approach to have fewer complications (e.g., infection, urinary tract injuries) and a shorter hospital stay.[15,27,28,29] We recommend using a decision pathway as similar to that in Schmidt et al 2017 to facilitate a minimally invasive approach.[30] Laparoscopic or robotic surgical approaches are recommended over abdominal routes when a vaginal approach is not appropriate.[31] In line with the Health Technology Assessment Program review of robotic assisted surgery, the Collaborative recommends no additional payment for use of robotic assisted surgery beyond that for the underlying procedure is currently indicated.[32] Providers could consider referrals to providers and/or hospitals or health systems that can perform a minimally-invasive approach if not available in their facility.

1. Prior to surgery:
    a. Minimize preoperative fasting.
    b. Avoid bowel preparation.
    c. Preemptive analgesia.[33]
    d. Prophylactic antibiotics. Administer appropriate peri-operative course of antibiotics according to guidelines set forth in the Surgical Care Improvement Project (SCIP): SCIP-Inf-1b, 2b, 3b; CMS Measure 1, 2, 3.[34]
    e. Use appropriate skin prep by patient prior to surgery.
2. Limit use of nasogastric tubes and drains.
3. Minimize risk of deep venous thrombosis and embolism according to guidelines set forth in the SCIP VTE-2, CMS Measure 4 (e.g., thromboprophylaxis).
4. Optimize pain management and anesthesia pre- and post-operatively with multimodal analgesia to minimize opioid use. Prescribe according to Washington State Agency Medical Director's Group Opioid Prescribing Guidelines, 2015 Interagency Guidelines or more recent if available.
5. Use a minimally invasive approach, if not contraindicated, using a decision pathway as similar to that in Schmidt et al 2017 for benign disease, summarized as follows:[30]
    a. If uterus is accessible transvaginally
        i. Yes
            1. Uterus <280 grams (<12 weeks gestation)
                a. Yes – **Vaginal hysterectomy**
                b. No – Uterine size <18 weeks gestation
                    i. Yes – **Laparoscopic or robotic hysterectomy**
                    ii. No – **Abdominal hysterectomy**

ii. No

1. Uterine size <18 weeks gestation

a. Yes – **Laparoscopic or robotic hysterectomy**

b. No – **Abdominal hysterectomy**

6. Consider need to reduce the risk of post-hysterectomy prolapse.[35]
7. Removal of urinary catheters within six hours of surgery.[36]
8. Enhance gastrointestinal motility with early nutrition.
9. Facilitate early postoperative mobilization.
10. Discharge planning including patient education and care plan:
    a. Signs or symptoms that warrant follow up with provider.
    b. Guidelines for emergency care and alternatives to emergency care.
    c. Contact information for surgeon and primary care provider.
    d. Functional restrictions (e.g., bathing, lifting, driving, pelvic rest).
    e. Schedule follow-up visits as appropriate.

Additional Stakeholder Actions and Quality Improvement Strategies

Do not use these recommendations in lieu of medical advice.

Patients

- Discuss any concerns or symptoms with your provider and care team.
- Review the American Congress of Obstetricians and Gynecologists (ACOG) frequently asked questions about hysterectomy here: www.acog.org/Patients/FAQs/Hysterectomy. ACOG also has information for patients by specific indication, such as for Pelvic Organ Prolapse here: www.acog.org/Patients/FAQs/Surgery-for-Pelvic-Organ-Prolapse.
- Review Choosing Wisely recommendations – a partnership between the American Board of Internal Medicine and Consumer Reports to "*identify areas of wasteful or unnecessary medical tests, treatments, or procedures*" from the American Association of Gynecologic Laparoscopists (AAGL) here:[37] www.choosingwisely.org/clinician-lists/aagl-unaided-removal-of-endometrial-polyps-without-direct-visualization/
- Talk with your provider and care team about assessment, medical management, and uterine sparing procedures as outlined in tables 1 and 2. These conversations might be helped through use of a patient decision aid. Patient decision aids are tools to help patients and providers have an informed conversation about goals of care, symptoms, risks, and benefits. Options are below:
    - General questions to ask your provider from HealthWise: www.healthwise.net/cochranedecisionaid/Content/StdDocument.aspx?DOCHWID=hw217755
    - Abnormal Uterine Bleeding: Should I Have a Hysterectomy? www.healthwise.net/cochranedecisionaid/Content/StdDocument.aspx?DOCHWID=aa117176
    - Endometriosis: Should I Have a Hysterectomy and Oophorectomy? www.healthwise.net/cochranedecisionaid/Content/StdDocument.aspx?DOCHWID=tv7242
    - Hysterectomy: Should I Also Have My Ovaries Removed? www.healthwise.net/cochranedecisionaid/Content/StdDocument.aspx?DOCHWID=tb1884#av2363
    - Web-based decision aid for women considering elective hysterectomy http://beckwithinstitute.org/decision-aid-for-women-considering-elective-hysterectomy/
- If you decide to have a hysterectomy, talk with your doctor about use of a minimally invasive approach.

Health Plans

- Develop prior authorization protocol for hysterectomy in-line with this guideline including documentation of discussion of medical management and uterine sparing procedures to reduce administrative burden on providers.

Employers

Employees can inform their employers about their type of surgery at their own discretion. Hysterectomy, while common, is a major surgery. Recovery from hysterectomy is variable depending on why the surgery was recommended, how the surgery was performed, and whether there are complications during recovery. Patients may be on pain medications which restrict driving for about one to two weeks. A common recommendation to ensure positive recovery is restricting lifting (about 10 pounds maximum) for about six weeks routinely. Irritation to the internal organs during surgery can require flexible breaks for walking or resting, or bathroom use. Hysterectomy patients may also experience major changes in hormone levels and symptoms of menopause (sweating, insomnia, changes in mood or concentration). Fatigue is common after any major surgery, and can impact productivity for up to months after.

- Support employees in following clinical recommendations to avoid complications.

Washington State Health Care Authority

- Certify patient decision aids for hysterectomy.

Measurement

There are currently no applicable HEDIS 2017 measures. As this recommendation is meant as a foundational guideline, the workgroup encourages further investigation of metrics related to hysterectomy outcomes that are useful for quality improvement and relevant to patients. The American Congress of Obstetricians and Gynecologists has proposed the following measures, which may serve as a blueprint for further work:[38]

- Emergency room visits, inpatient admissions, and outpatient hospital visits for conditions related to the hysterectomy within 45 days of the procedure including:
    - Disruption of the wound
    - Gastrointestinal (GI) complaints and complications (nausea, vomiting, bowel obstruction, etc.)
    - Hemorrhage
    - Infection
    - UTI
    - Pain
    - Post-procedural circulatory complications (including PE/DVT)
    - Post-procedural respiratory complications (pneumonia, etc.)
    - Nerve injury
    - Urine retention

- Use of non-procedural therapy for patients under age 55 with abnormal uterine bleeding (AUB) and fibroids in the year prior to the hysterectomy.

- Oophorectomy in women under age 65 without a family history of relevant cancer.

- Patient-reported outcomes
    - Pain
    - Regret
    - Fatigue
    - Sexual function, and
    - Satisfaction

Appendix A: Bree Collaborative Members

Member	Title	Organization
Susie Dade MS	Deputy Director	Washington Health Alliance
John Espinola MD, MPH	Executive Vice President, Health Care Services	Premera Blue Cross
Gary Franklin MD, MPH	Medical Director	Washington State Department of Labor and Industries
Stuart Freed MD	Chief Medical Officer	Confluence Health
Richard Goss MD	Medical Director	Harborview Medical Center – University of Washington
Jennifer Graves, RN, MS	Senior Vice President, Patient Safety	Washington State Hospital Association
Christopher Kodama MD	President, MultiCare Connected Care	MultiCare Health System
Daniel Lessler MD, MHA	Chief Medical Officer	Washington State Health Care Authority
Paula Lozano MD, MPH	Associate Medical Director, Research and Translation	Kaiser Permanente
Wm. Richard Ludwig MD	Chief Medical Officer, Accountable Care Organization	Providence Health and Services
Greg Marchand	Director, Benefits & Policy and Strategy	The Boeing Company
Robert Mecklenburg MD	Medical Director, Center for Health Care Solutions	Virginia Mason Medical Center
Kimberly Moore MD	Associate Chief Medical Officer	Franciscan Health System
Carl Olden MD	Family Physician	Pacific Crest Family Medicine, Yakima
Mary Kay O'Neill MD, MBA	Partner	Mercer
John Robinson MD, SM	Chief Medical Officer	First Choice Health
Terry Rogers MD (Vice Chair)	Chief Executive Officer	Foundation for Health Care Quality
Jeanne Rupert DO, PhD	Family Physician	One Medical
Kerry Schaefer	Strategic Planner for Employee Health	King County
Bruce Smith MD	Medical Director	Regence Blue Shield
Lani Spencer RN, MHA	Vice President, Health Care Management Services	Amerigroup
Hugh Straley MD (Chair)	Retired	Medical Director, Group Health Cooperative; President, Group Health Physicians
Shawn West MD	Family Physician	Edmonds Family Medicine

Appendix B: Hysterectomy Workgroup Charter and Members

Problem Statement

Hysterectomy is one of the most frequent surgical procedures in the United States with approximately 600,000 performed annually.[1] The most common indications for hysterectomy are uterine fibroids, endometriosis, and prolapse, however the procedure has a risk of complications including bladder or bowel injury, bleeding, and urinary incontinence among others.[2][3] Hysterectomy rates are also highly variable, being one of the first published surgical procedures with rates differing primarily based on location, indicating overuse.[4] Rates continue to be highly variable based on location in Washington State.[5]

Aim

To align care delivery with existing evidence-based indications, route, and use of robotics for benign hysterectomy across Washington State and decrease inappropriate use.

Purpose

To propose recommendations to the full Bree Collaborative on:

- Evidence-based indications for, route, and use of robotics for benign hysterectomy.
- Increasing state-wide adherence to appropriate benign hysterectomy indications, route, and use of robotics.
- Measuring improvements in appropriate hysterectomy procedures.
- Identifying additional areas for recommendations within the scope of the workgroup.

Duties & Functions

The Hysterectomy workgroup will:

- Research evidence-based guidelines and best practices (emerging and established).
- Consult relevant professional associations and other stakeholder organizations and subject matter experts for feedback, as appropriate.
- Meet for approximately nine months, as needed.
- Provide updates at Bree Collaborative meetings.
- Post draft report on the Bree Collaborative website for public comment prior to sending report to the Bree Collaborative for approval and adoption.
- Present findings and recommendations in a report.
- Recommend data-driven and practical implementation strategies.
- Create and oversee subsequent subgroups to help carry out the work, as needed.
- Revise this charter as necessary based on scope of work.

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[1] Wu JM1, Wechter ME, Geller EJ, Nguyen TV, Visco AG. Hysterectomy rates in the United States, 2003. Obstet Gynecol. 2007 Nov;110(5):1091-5.

[2] Broder MS, Kanouse DE, Mittman BS, Bernstein SJ. The Appropriateness of Recommendations for Hysterectomy. Obstet Gynecol. 2000 Feb;95(2):199-205.

[3] The American Congress of Obstetricians and Gynecologists. Choosing the Route of Hysterectomy for Benign Disease. November 2009. Available: http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Gynecologic-Practice/Choosing-the-Route-of-Hysterectomy-for-Benign-Disease. Accessed: August 2015.

[4] Wennberg J, Gittelsohn. Small area variations in health care delivery. Science. 1973 Dec 14;182(4117):1102-8.

[5] Washington Health Alliance. Different Regions, Different Health Care: Where you Live Matters. January 2015. Available: http://wahealthalliance.org/wp-content/uploads.php?link-year=2015&link-month=01&link=Different-Regions-Different-Care.pdf. Accessed: August 2015.

Structure

The workgroup will consist of individuals confirmed by Bree Collaborative members or appointed by the chair of the Bree Collaborative or the workgroup chair.

The chair of the workgroup will be appointed by the chair of the Bree Collaborative.

The Bree Collaborative project director will staff and provide management and support services for the workgroup.

Less than the full workgroup may convene to: gather and discuss information; conduct research; analyze relevant issues and facts; or draft recommendations for the deliberation of the full workgroup. A quorum shall be a simple majority and shall be required to accept and approve recommendations to send to the Bree Collaborative.

Meetings

The workgroup will hold meetings as necessary. The program director will conduct meetings along with the chair, arrange for the recording of each meeting, and distribute meeting agendas and other materials prior to each meeting. Additional workgroup members to be added at the discretion of the chair.

Name	Title	Organization
Jeanne Rupert, DO, PhD (Chair)	Family Physician	One Medical
Pat Kulpa, MD,MBA	Medical Director	Regence BlueShield
Sharon Kwan, MD, MS	Interventional Radiologist	University of Washington Medical Center
John Lenihan, MD	Medical Director of Robotics and Minimally Invasive Surgery	MultiCare Health System
Jennie Mao, MD	Clinical Assistant Professor, Department of Obstetrics and Gynecology	University of Washington Medical Center
Rachelle McCarty, ND, MPH	Patient Advocate	
Sarah Prager, MD	Chair	Washington State Section of ACOG
Kevin Pieper, MD	Chief, Women's and Children's	Providence Regional Medical Center Everett
Kristin Riley, MD, FACOG	Assistant Professor, Department of Obstetrics and Gynecology	University of Washington Medical Center
Anita Showalter, DO, FACOOG	Associate Professor and Chair, Women's Health	Pacific Northwest University of Health Sciences
Susan Warwick, MD	Obstetrics and Gynecology	Kaiser Permanente

Appendix C: Hysterectomy Guideline and Systematic Review Search Results

Results as of August 2017.

Source	Guidelines or Systematic Reviews
AHRQ: Research Findings and Reports (including USPSTF reviews)	(2017 – Research protocol to update 2012) Nonsurgical Treatments for Urinary Incontinence in Adult Women: A Systematic Review Update (2016 – research protocol) Management of Uterine Fibroids (2014) Chronic Urinary Retention: Comparative Effectiveness and Harms of Treatments (2015) Noncyclic Chronic Pelvic Pain Therapies for Women: Comparative Effectiveness (2014) Benefits and Harms of Routine Preoperative Testing: Comparative Effectiveness (2013) Primary Care Management of Abnormal Uterine Bleeding (2012) Nonsurgical Treatments for Urinary Incontinence in Adult Women: Diagnosis and Comparative Effectiveness
Cochrane Collection	(2016) Surgery versus medical therapy for heavy menstrual bleeding (2016) Surgical management of pelvic organ prolapse in women (2016) New health evidence gives women informed choice in the prolapse surgery debate (2015) Surgical approach to hysterectomy for benign gynaecological diseases (vaginal vs. abdominal vs. laparoscopic vs. robot-assisted) (2015) Use of progesterone or progestogen-releasing intrauterine systems for heavy menstrual bleeding (2014) Robot-assisted surgery in gynaecology (2014) Use of computer or robotic technology to assist surgeons in performing gynaecological surgery (2014) Uterine artery embolization for symptomatic uterine fibroids (2014) Minimally invasive surgical techniques versus open myomectomy for uterine fibroids (2014) Interventions to reduce haemorrhage during myomectomy for treating fibroids (2013) Endometrial destruction techniques for heavy menstrual bleeding using newer global ablation techniques and established hysteroscopic techniques (2013) A comparison of the effectiveness and safety of two different surgical treatments for heavy menstrual bleeding (endometrial resection or ablation vs. hysterectomy) (2013) Pre-operative endometrial thinning agents before endometrial destruction for heavy menstrual bleeding (2013) Progestogens or progestogen-releasing intrauterine systems for uterine fibroids (2012) Subtotal versus total hysterectomy (whether to remove cervix) (2012) Mifepristone for uterine fibroids
Specialty Society Guidelines (via Guideline Clearinghouse including Choosing Wisely)	(2017) American Congress of Obstetricians and Gynecologists Five Things Patients and Providers Should Question (published November 2017, added January 2018) (2017) The American College of Obstetricians and Gynecologists Choosing the Route of Hysterectomy for Benign Disease (2017) The American College of Obstetricians and Gynecologists Pelvic Organ Prolapse

	(2014) American College of Physicians Nonsurgical management of urinary incontinence in women: a clinical practice guideline from the American College of Physicians (2014) American College of Radiology ACR Appropriateness Criteria® pelvic floor dysfunction. (2013) Society of Obstetricians and Gynaecologists of Canada Abnormal uterine bleeding in pre-menopausal women (2013) The American College of Obstetricians and Gynecologists Management of abnormal uterine bleeding associated with ovulatory dysfunction (2012) American College of Radiology ACR Appropriateness Criteria® Radiologic Management of Uterine Leiomyomas (2012) Society of Obstetricians and Gynaecologists of Canada Antibiotic Prophylaxis in Gynaecologic Procedures (2008) The American Congress of Obstetricians and Gynecologists Alternatives to hysterectomy in the management of leiomyomas (2007) American College of Obstetricians and Gynecologists Endometrial ablation (2006) American Academy of Family Physicians Diagnosis and Management of Endometriosis
Health Technology Assessment Program	(2012) Robotic assisted surgery. Coverage Determination: Robotic Assisted Surgery is a covered benefit with conditions. Limitations of Coverage: Among patients undergoing surgery where RAS is recommended by the attending surgeon, when the underlying procedure is a covered procedure: No additional payment for use of RAS beyond that for the underlying procedure is currently indicated. Agencies may require (billing) providers to clearly identify when RAS is used in order to track utilization and outcome
Center for Disease Control	Data on hysterectomies from National Survey of family growth www.cdc.gov/nchs/nsfg/key_statistics/s.htm#sterilizationfemale
Institute for Clinical and Economic Review	No relevant reviews
BMJ Clinical Evidence Guidelines	(2014) Royal Australian and New Zealand College of Obstetricians and Gynaecologists: Uterine artery embolisation for the treatment of uterine fibroids (2014) Advancing Minimally Invasive Gynecology Worldwide (AAGL) practice report: practice guidelines on the prevention of apical prolapse at the time of benign hysterectomy (2010) Society of Obstetricians and Gynaecologists of Canada: Supracervical Hysterectomy (2007) National Institute for Health and Care Excellence: Laparoscopic techniques for hysterectomy (heavy menstrual bleeding overview) (2002) Society of Obstetricians and Gynaecologists of Canada: hysterectomy
Veterans Administration Evidence-based Synthesis Program	(2013 September) Screening Pelvic Examinations in Asymptomatic Average Risk Adult Women

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[1] Wu JM1, Wechter ME, Geller EJ, Nguyen TV, Visco AG. Hysterectomy rates in the United States, 2003. Obstet Gynecol. 2007 Nov;110(5):1091-5.
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[3] Sheyn D, Mahajan S, Billow M, Fleary A, Hayashi E, El-Nashar SA. Geographic Variance of Cost Associated With Hysterectomy. Obstet Gynecol. 2017 May;129(5):844-853.
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