

CIGNA MEDICAL COVERAGE POLICIES– RADIOLOGY

Pelvis Imaging Guidelines

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EviCore
By EVERNORTH

Instructions for use

The following coverage policy applies to health benefit plans administered by Cigna. Coverage policies are intended to provide guidance in interpreting certain standard Cigna benefit plans and are used by medical directors and other health care professionals in making medical necessity and other coverage determinations. Please note the terms of a customer's particular benefit plan document may differ significantly from the standard benefit plans upon which these coverage policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a coverage policy.

In the event of a conflict, a customer's benefit plan document always supersedes the information in the coverage policy. In the absence of federal or state coverage mandates, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of:

1. The terms of the applicable benefit plan document in effect on the date of service
2. Any applicable laws and regulations
3. Any relevant collateral source materials including coverage policies
4. The specific facts of the particular situation

Coverage policies relate exclusively to the administration of health benefit plans. Coverage policies are not recommendations for treatment and should never be used as treatment guidelines.

This evidence-based medical coverage policy has been developed by EviCore, Inc. Some information in this coverage policy may not apply to all benefit plans administered by Cigna.

These guidelines include procedures EviCore does not review for Cigna. Please refer to the [Cigna CPT code list](#) for the current list of high-tech imaging procedures that EviCore reviews for Cigna.

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Table of Contents

Guideline	Page
General Guidelines (PV-1)	3
Abnormal Uterine Bleeding (PV-2)	14
Amenorrhea (PV-3)	19
Adenomyosis (PV-4)	24
Adnexal Mass/Ovarian Cysts (PV-5)	28
Endometriosis (PV-6)	46
Pelvic Inflammatory Disease (PID) (PV-7)	51
Polycystic Ovary Syndrome (PV-8)	56
Initial Infertility Evaluation, Female (PV-9)	60
Intrauterine Device (IUD) and Tubal Occlusion (PV-10)	63
Pelvic Pain/Dyspareunia, Female (PV-11)	70
Leiomyoma/Uterine Fibroids and other Uterine Masses (PV-12)	77
Periurethral Cysts, Urethral Diverticula, and Vaginal Masses (PV-13)	86
Congenital (Mullerian) Uterine and Vaginal Anomalies (PV-14)	91
Fetal MRI and Other Pregnancy Imaging (PV-15)	95
Molar Pregnancy and Gestational Trophoblastic Neoplasia (GTN) (PV-16)	105
Impotence/Erectile Dysfunction (PV-17)	108
Penis–Soft Tissue Mass (PV-18)	111
Male Pelvic Disorders (PV-19)	114
Scrotal Pathology (PV-20)	120
Fistulae, Abscess, and Pilonidal Cyst (PV-21)	126
Urinary Incontinence/Pelvic Prolapse/Fecal Incontinence (PV-22)	133
Patent Urachus (PV-23)	142
Bladder Mass (PV-24)	145
Ureteral and/or Bladder Trauma or Injury (PV-25)	148
Gender Affirmation Surgery; Pelvic (PV-26)	152

General Guidelines (PV-1)

Guideline	Page
Abbreviations for Pelvis Imaging Guidelines.....	4
General Guidelines (PV-1.0).....	6
General Guidelines – Overview (PV-1.1).....	7
References (PV-1).....	11

Abbreviations for Pelvis Imaging Guidelines

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v2.0.2026

Abbreviations for Pelvis Imaging Guidelines

CA-125	cancer antigen 125 test
CT	computed tomography
FSH	follicle-stimulating hormone
GTN	gestational trophoblastic neoplasia
HCG	human chorionic gonadotropin
IC/BPS	interstitial cystitis/bladder pain syndrome
IUD	intrauterine device
KUB	kidneys, ureters, bladder (frontal supine abdomen radiograph)
LH	luteinizing hormone
MRA	magnetic resonance angiography
MRI	magnetic resonance imaging
MSv	millisievert
PA	posteroanterior projection
PID	pelvic inflammatory disease
TA	transabdominal
TSH	thyroid-stimulating hormone

Abbreviations for Pelvis Imaging Guidelines

TV	transvaginal
UCPPS	Urologic Chronic Pelvic Pain Syndrome
WBC	white blood cell count

General Guidelines (PV-1.0)

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- A current clinical evaluation since the onset or change in symptoms is required before advanced imaging can be considered. The clinical evaluation should include a relevant history and physical examination including a pelvic and/or urological exam, appropriate laboratory studies, and non-advanced imaging modalities such as plain x-ray or Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or Transvaginal ultrasound (CPT® 76830) and/or Transperineal ultrasound (CPT® 76872).
 - Other meaningful contact (telehealth visit, telephone call, electronic mail or messaging) since the onset or change in symptoms for follow up visit by an established individual can substitute for a face-to-face clinical evaluation.
- The use of gynecology CPT®CPT codes for pregnant females is not supported. Therefore, transvaginal ultrasound (CPT® 76830) and pelvic ultrasound (CPT® 76856 or CPT 76857) are not medically necessary for those with a positive pregnancy test or known pregnancy. If a pregnancy test is positive, then obstetrical CPT codes are medically necessary.
- Abdominal imaging begins at the diaphragm and extends to the umbilicus or iliac crest
- Pelvic imaging begins at the iliac crest and extends to the pubis
- The uterus, tubes and ovaries arise out of the pelvis and are considered pelvic organs. If the uterus or adenxa rise out of the pelvic cavity, above the level of the iliac crest or umbilicus on physical exam or on previous imaging, abdominal imaging may be added for the completion of imaging.

Health Equity Considerations

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

General Guidelines – Overview (PV-1.1)

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- When medically necessary, pregnant females should be evaluated with ultrasound or MRI without contrast to avoid radiation exposure. In carefully selected clinical circumstances, evaluation with CT may be medically necessary with careful attention to technique and radiation protection as deemed clinically appropriate.

Ultrasound

- Transvaginal ultrasound is the standard modality for imaging; no alternative modality has demonstrated sufficient superiority to justify routine use, and Transvaginal (TV) ultrasound (CPT® 76830) is the optimal study to evaluate adult female pelvic organ pathology.
- Pelvic ultrasound (complete CPT® 76856, or limited CPT® 76857) is medically necessary if it is a complementary study to the TV ultrasound. It may substitute for TV in pediatric individuals or non-sexually active females assigned at birth.
- Transperineal ultrasound (CPT® 76872) is medically necessary for cases of suspected urethral abnormalities, urinary incontinence, pelvic prolapse, or vaginal cysts.
- CPT® 76942 is used to report ultrasound imaging guidance for needle placement during biopsy, aspiration, and other percutaneous procedures.

Soft Tissue Ultrasound

- Pelvic wall, buttocks, and penis - CPT® 76857

Scrotal Ultrasound

- See
 - **Impotence/Erectile Dysfunction (PV-17.1)**
 - **Penis-Soft Tissue Mass (PV-18.1)**
- Ultrasound scrotum and contents - CPT 76870

3D Rendering with Ultrasound

- 3D Rendering (CPT® 76376 or CPT® 76377)
 - CPT® 76377 (3D rendering requiring image post-processing on an independent work station) or CPT®

76376 (3D rendering not requiring image post-processing on an independent workstation) in the following clinical scenarios is medically necessary:

- Uterine intra-cavitary lesion when initial ultrasound is equivocal (See **Abnormal Uterine Bleeding (AUB) (PV-3.1)** and **Leiomyoma/Uterine Fibroids (PV-12.1)**)
- Hydrosalpinges or peritoneal cysts when initial ultrasound is equivocal (See **Complex Adnexal Masses (PV-5.3)**)
- Lost IUD (inability to feel or see IUD string) with initial ultrasound (See **Intrauterine Device (PV-10.1)**)
- Uterine anomaly is suspected on ultrasound (See **Uterine Anomalies (PV-14.1)**)
- Infertility if ultrasound is indeterminate or there is clinical suspicion for intra-cavitary lesion (such as polyp or fibroid), hydrosalpinx, uterine synechia, adenomyosis or uterine anomalies (See **Initial Infertility Evaluation, Female (PV-9.1)**)
- 3D-4D (CPT® 76376 or CPT® 76377) rendering is medically necessary in certain situations of abnormal pregnancy implantation like suspected C-section scar pregnancies or suspected cornual (interstitial) ectopic pregnancy, or to locate an IUD.
- 3D-4D (CPT® 76376 or CPT® 76377) rendering is medically necessary for surgical planning with diagnosis of complex CHD in the fetus or for surgical planning of other complex fetal malformations.

Other Ultrasound

- CPT® 93975 Duplex scan (complete) of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; complete study.
- CPT® 93976 Duplex scan (limited) of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; limited study.
- CPT® 93975 and CPT® 93976 should not be reported together during the same session.

CT

- CT is not medically necessary for evaluating pelvic anatomy because it is limited due to soft tissue contrast resolution.

MRI

- Is medically necessary when used as a more targeted study or for individuals allergic to iodinated contrast.
 - MRI Pelvis without contrast (CPT® 72195)
 - MRI Pelvis without and with contrast (CPT® 72197)
 - MRI Pelvis with contrast only (CPT® 72196) is rarely performed

Evidence Discussion (PV-1.1)

- Ultrasonography and magnetic resonance imaging (MRI) are the imaging techniques of choice for the pregnant individual, they should be used prudently and only when use is expected to answer a relevant clinical question¹¹.
- CT is not generally warranted for evaluating pelvic anatomy because it is limited due to soft tissue contrast resolution. Computed tomography (CT) scans are generally not recommended during pregnancy unless the benefits clearly outweigh the potential risks¹². Computed tomography (CT) scan if necessary in addition to ultrasonography or MRI if more readily available for the diagnosis in question, should not be withheld from a pregnant individual. The risk of adverse effects from ionizing radiation should always be weighed against the risk of not performing the procedure and the benefit derived from the procedure¹².
- Ultrasound is the recommended modality for imaging the female pelvic organs; no alternative modality has demonstrated sufficient superiority to justify routine use³, and transvaginal ultrasound is the optimal study to evaluate adult female pelvic pathology. Transabdominal pelvic ultrasound is a useful complementary study to transvaginal ultrasound and may substitute for transvaginal ultrasound in pediatric individuals or non-sexually active females. The American Institute of Ultrasound in Medicine (AIUM.org) launched an initiative in 2012 "Ultrasound First," which advocates the use of ultrasound examinations before other imaging modalities when the evidence shows that ultrasound imaging is at least equally, if not more, effective for the target anatomic area¹³. This applies particularly to obstetric and gynecologic patients for whom a skillfully performed and well-interpreted ultrasound image usually obviates the need to proceed to additional more costly and complex cross-sectional imaging techniques³.
- Transperineal ultrasound can be useful for cases of suspected urethral abnormalities, urinary incontinence, pelvic prolapse, or vaginal cysts^{14,15}. A study by Yang, et al confirmed transvaginal or transperineal ultrasound to be a non-invasive and cost-effective modality for diagnosis of urethral and periurethral masses¹⁴. Vaginal and urethral imaging is limited on transvaginal ultrasound due to the position of the endovaginal probe rendering the vagina out of the field, on computed tomography (CT) due to poor soft tissue discrimination of the vaginal walls and on magnetic resonance imaging (MRI). MRI of the vagina should be done with thin slice thickness and proper choice of the degree of angulation and used MR sequence, otherwise there is limited evaluation of the vagina¹⁵. Transperineal ultrasound is also a dynamic real-time examination, and can detect subtle abnormalities that are not seen in static imaging¹⁵.
- Scrotal ultrasound is supported for evaluation of scrotal pain or suspected mass^{16,17}. The American Urological Association recommends scrotal ultrasound for initial evaluation of unilateral or bilateral scrotal mass suspicious for neoplasm¹⁷.
- Three-dimensional (3D) rendering with ultrasound can be considered when ultrasound shows suspected uterine anomaly, uterine intra-cavitary lesion,

hydrosalpinges or peritoneal cysts^{2,4,5,6}. A study by Laskshmy et al found 3D ultrasound to be a highly sensitive and specific tool for accurately diagnosing congenital uterine anomalies². 3D rendering has shown a high degree of concordance with MRI and laparoscopy for congenital uterine anomalies, and is non-invasive, readily available and relatively cost-effective⁴. Three-dimensional ultrasound is a noninvasive method for evaluation of adnexal pathology¹⁸.

- Doppler scan can be of benefit in addition to ultrasound for further evaluation of suspected uterine or ovarian abnormalities. Doppler flow mapping is useful in diagnosing submucosal fibroids and endometrial polyps¹⁹. ACOG (American College of Obstetrics and Gynecology) recommended that color Doppler ultrasonography is useful to evaluate the vascular characteristics of adnexal masses¹. MRI pelvis is useful in cases such as inconclusive ultrasound for adenomyosis, "MRI is a second-line examination in the diagnosis of internal adenomyosis, mainly after a non-conclusive US evaluation. In addition, MRI can differentiate between the subtypes of adenomyosis." MRI pelvis is also useful for further evaluation of indeterminate adnexal masses. A study by Dirrichs, et al found MRI to improve sensitivity and specificity of diagnosis of indeterminate adnexal masses detected at TVUS, and use of MRI changed therapeutic management in 34% of cases²¹. MRI can aid in the diagnosis of deep pelvic endometriosis²². MRI pelvis is useful for further evaluation of unexplained pelvis pain when ultrasound evaluation is inconclusive²³. Pelvic MRI is useful for evaluation of fibroids prior to uterine-sparing interventional techniques. "Although a high-quality ultrasonography (US) examination may be sufficient for evaluation in patients with straightforward cases of fibroids (for instance to estimate the size of a dominant fibroid), imaging evaluation is most reliably performed with magnetic resonance (MR) imaging to determine the characteristics, number, size, and location of fibroids and to assess for other pathologic conditions such as adenomyosis."²⁴
- There is currently insufficient data to generate appropriateness criteria for the use of 3D and 4D rendering in conjunction with Obstetrical ultrasound imaging. Per ACOG, proof of a clinical advantage of 3-dimensional ultrasonography in prenatal diagnosis, in general, is still lacking.

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v2.0.2026

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Abnormal Uterine Bleeding (PV-2)

Guideline	Page
Abnormal Uterine Bleeding (AUB) (PV-2.1).....	15
Retained Products of Conception (PV-2.2).....	17
References (PV-2).....	18

Abnormal Uterine Bleeding (AUB) (PV-2.1)

PV.UB.0002.1.C

v2.0.2026

- Pregnancy test should be done initially if premenopausal
- If pregnancy test is negative or post menopausal initial evaluation includes ANY or ALL of the following:
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or Transvaginal ultrasound (CPT® 76830), D&C and/or endometrial biopsy
- Advanced imaging is not medically necessary for Endometrial Intraepithelial Neoplasia or Atypical Endometrial Hyperplasia (EIN-AEH) as imaging has not been found to improve outcomes for this condition.
- In females assigned at birth with postmenopausal bleeding
 - Those with thickened endometrium on ultrasound, those whose ultrasound failed to identify a thin, distinct endometrial strip and/or those with continued vaginal bleeding should all undergo endometrial biopsy to rule out endometrial carcinoma
- If biopsy confirms a malignancy, then see the appropriate oncology guideline.
- If ultrasound is equivocal for intracavitary lesion the following is medically necessary:
 - Duplex (Doppler) scan (CPT® 93975 complete; CPT® 93976 limited) as an add-on to TV ultrasound (CPT® 76830)
 - 3-D Rendering (CPT® 76377) as an add-on.
- CT is not generally warranted for evaluating AUB since uterine anatomy is limited due to soft tissue contrast resolution.
 - An abnormal endometrium found incidentally on CT should be referred for TV ultrasound for further evaluation.
- MRI is not indicated for evaluation of abnormal uterine bleeding, please see specific Pelvis Imaging sections for MRI indications for ultrasound findings such as adnexal mass or uterine fibroids See **Adnexal Mass/Ovarian Cysts (PV-5)** and **Leiomyoma/Uterine Fibroids (PV-12.1)**.

Evidence Discussion (PV-2.1)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for evaluation of abnormal uterine bleeding^{2,12}. Ultrasound also allows for real-time evaluation with color and power Doppler which can help identify vascular flow and distinguish fluid and cysts from soft tissue¹². Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure. 3-D Rendering has

been shown to a useful adjunct for analysis of suspected lesions the endometrial cavity.

- MRI is not supported as an initial imaging modality for the diagnosis of abnormal uterine bleeding¹². While MRI is accepted as an adjunct modality to ultrasound in cases where ultrasound may not fully characterize a soft tissue abnormality, imaging should be directed by the type of suspected soft tissue abnormality (i.e. adenomyosis, endometriosis, fibroids, and adnexal mass) and is addressed in additional sections of these guidelines. CT is of limited use in the evaluation of abnormal uterine bleeding given its suboptimal evaluation of the soft tissue of female pelvic organs¹².
- In premenopausal females assigned at birth presenting with abnormal uterine bleeding a pregnancy test should be performed. For those with a positive pregnancy test, imaging with appropriate obstetric ultrasound should be performed.
- Vaginal bleeding is the presenting symptom in 90% of postmenopausal females assigned at birth with endometrial cancer¹⁰. An endometrial strip of 4mm or less on ultrasound has been found to have a greater than 99% negative predictive value for endometrial cancer¹⁰. However, this cutoff may be inadequate in Black women, as it missed five-fold more cases than in White women¹³. Endometrial tissue sampling remains the gold standard for diagnosis of endometrial carcinoma. As such, those with thickened endometrium on ultrasound, those who ultrasound failed to identify a thin, distinct endometrial strip and those with continued vaginal bleeding should all undergo endometrial sampling to rule out endometrial carcinoma¹⁰.
- The incidence of concurrent endometrial cancer with the diagnosis of Endometrial Intraepithelial Neoplasia or Atypical Endometrial Hyperplasia (EIN-AEH) is approximately 30% to 50%¹. This makes evaluation for concurrent carcinoma imperative in the diagnosis of EIN-AEH for those considering a fertility-sparing treatment. The most accurate method for diagnosis is hysteroscopic-guided uterine sampling which has the added benefit of direct visualization of any intrauterine pathology such as endometrial polyps.

Retained Products of Conception (PV-2.2)

PV.UB.0002.2.A

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- For abnormal uterine bleeding and/or pelvic pain with concern for retained products of conception (RPOC):
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or Transvaginal ultrasound (CPT® 76830) is medically necessary one time, repeat US is medically necessary for continued symptoms
 - Color Doppler ultrasonography (CPT® 93975 or CPT® 93976) may be added to ultrasound to aid in diagnosis of RPOC
 - CT Pelvis with and without contrast (CPT® 72194) OR MRI Pelvis with and without contrast (CPT® 72197) is medically necessary if US with Color Doppler is equivocal AND further imaging is needed for surgical planning

Evidence Discussion (PV-2.2)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for evaluation of suspected retained products of conception (RPOC)^{15,16}. Ultrasound also allows for real-time evaluation with color and power Doppler which can help identify vascular flow within the endometrial complex, which improves the specificity and negative predictive value of detecting RPOC¹⁵. Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure.
- For most cases ultrasound is sufficient for detection of RPOC. For cases where ultrasound is inconclusive additional imaging with MRI or CT may provide additional information to aid in surgical planning¹⁶.

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Amenorrhea (PV-3)

Guideline	Page
Secondary Amenorrhea (PV-3.1).....	20
Primary Amenorrhea (PV-3.2).....	21
References (PV-3).....	23

Secondary Amenorrhea (PV-3.1)

PV.AM.0003.1.A

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- Pregnancy test should be done initially
- If a pregnancy test is positive:
 - Refer to the member's individual coverage policy regarding obstetrical imaging indications and appropriate obstetrical imaging procedural codes. Billing of gynecology codes during pregnancy is not supported.
- If a pregnancy test is negative, further evaluation includes any of the following:
 - FSH, TSH, estradiol, and/or prolactin levels are medically necessary depending on clinical suspicion.
 - Serum free and total testosterone and/or DHEAS levels are indicated if there is evidence of hyperandrogenism
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) for suspected uterine or ovarian pathology are medically necessary
- The results of test(s) above determine the next steps, which include:
 - For suspected adrenal tumor, See **Adrenal Cortical Lesions (AB-16)** in the Abdomen Imaging Guidelines.
 - For suspected pituitary tumor or hypothalamic, See **Pituitary, Sella, Hypothalamus(HD-19)** in the Head Imaging Guidelines
 - For suspected Asherman's Syndrome the following are medically necessary:
 - Hysterosalpingogram (CPT® 74740), sonohysterosalpingography (CPT® 76831), and/or hysteroscopy if ultrasound is indeterminate for Asherman's syndrome
 - MRI Pelvis without contrast (CPT® 72195) or without and with contrast (CPT® 72197) if hysterosalpingogram (CPT® 74740), sonohysterosalpingography (CPT® 76831), or hysteroscopy is indeterminate for Asherman's Syndrome.

Background and Supporting Information

- Asherman's syndrome: an acquired condition which refers to having scar tissue in the uterus

Primary Amenorrhea (PV-3.2)

PV.AM.0003.2.A

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- Prior to imaging a history, physical examination and Tanner stage should be evaluated.
- Initial evaluation may include pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) as medically necessary if ANY of the following:
 - Normal pubertal development and negative pregnancy test
 - Pelvic exam is indeterminate or unable to be performed
 - Delayed puberty with follicle-stimulating hormone (FSH) or luteinizing hormone (LH) that is elevated for the individual's age and Tanner stage
- If ultrasound defines a uterine or vaginal anomaly see **Uterine Anomalies (PV-14.1)**
- For suspected pituitary or hypothalamic tumor, See **Pituitary, Sella, Hypothalamus (HD-19)** in the Head Imaging Guidelines

Background and Supporting Information

- Evaluation of an individual without a uterus (determined by imaging or examination) may include karyotype and/or testosterone levels.
- TV ultrasound (CPT® 76830) is medically necessary in pediatric individuals who are sexually active or use a tampon and consent to the study.

Evidence Discussion (PV-3)

- The initial work up of amenorrhea should include a physical exam, pregnancy test and hormonal work up. For those with a positive pregnancy test, imaging with obstetric ultrasound should be performed. Hormonal testing can help to further direct imaging^{7,2,5,6}.
- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for evaluation of amenorrhea^{7,2,5,6}. Ultrasound also allows for real-time evaluation with color and power Doppler which can help identify vascular flow and distinguish fluid and cysts from soft tissue⁷. Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure.
- MRI is supported as an adjunct to inconclusive ultrasound imaging, especially if the ultrasound is suggestive of a congenital uterine or vaginal anomaly². CT is of limited use in the evaluation of amenorrhea given its suboptimal evaluation of the soft tissue of female pelvic organs.
- For suspected Asherman's syndrome, the gold standard for diagnosis remains hysteroscopy which has the added benefit of allowing for simultaneous treatment of adhesive disease^{8,9}. However, hysteroscopy carries with it risks of anesthesia and

uterine perforation. Hysterosalpingogram (HSG) allows for simultaneous evaluation of tubal patency⁸. Sonohysterography (SHG) has a high negative predictive value (98%), but only a modest positive predictive value (43%)⁸. MRI may be a useful adjunct to HSG, SHG and hysteroscopy, especially in cases where there is complete obstruction of the endometrial cavity limiting the diagnostic ability of these tests^{8,9}.

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v2.0.2026

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Adenomyosis (PV-4)

Guideline	Page
Adenomyosis (PV-4.1).....	25
References (PV-4).....	27

Adenomyosis (PV-4.1)

PV.AD.0004.1.A

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- TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76856 or CPT® 76857) is the medically necessary diagnostic procedure of choice for the initial evaluation of suspected adenomyosis. Duplex Doppler (CPT® 93975 or CPT® 93976) can be added if requested.
- MRI Pelvis without contrast (CPT® 72195) or MRI Pelvis without and with contrast (CPT® 72197) is considered a medically necessary second-line imaging option after transvaginal ultrasound if:
 - Diagnosis is inconclusive for adenomyosis after an ultrasound and further delineation would affect management
 - MRI needed to guide the treatment of adenomyosis in an individual with an enlarged uterus, and coexisting leiomyoma/fibroid following indeterminate ultrasound
 - Uterine artery embolization is being considered
 - If MRI is equivocal, MRA Pelvis (CPT® 72198) or CTA Pelvis (CPT® 72191) if requested by or in consultation with the interventional radiologist planning the uterine artery embolization

Background and Supporting Information

Adenomyosis is when endometrial tissue, which normally lines the uterus, moves into the outer muscular walls of the uterus. Adenomyosis is a histologic diagnosis and is suspected by history and physical examination. Ultrasound findings of adenomyosis include heterogeneous myometrium, myometrial cysts, asymmetric myometrial thickness, and subendometrial echogenic linear striations.

Evidence Discussion (PV-4.1)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for evaluation of adenomyosis^{10,1,2,3}. Ultrasound also allows for real-time evaluation with color and power Doppler which can help identify vascular flow and distinguish fluid and cysts from soft tissue¹⁰. In the presence of features mimicking leiomyomas, Doppler US displaying vessels perpendicular to the endometrial interface, is suggestive of adenomyosis². Transvaginal ultrasound has a sensitivity of 83.8% and specificity of 63.9% for adenomyosis^{7,8}. The overall diagnostic accuracy of the use of transvaginal ultrasound with color Doppler for adenomyosis is 93.8%⁸. Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure.

- MRI of the pelvis is a second-line examination in the diagnosis of adenomyosis, mainly after an inconclusive US evaluation². MRI pelvis is useful in individuals with coexisting leiomyoma². A meta-analysis comparing the diagnostic performance of MRI and transvaginal ultrasound reported that MRI had a pooled sensitivity of 77% and a specificity of 89%². The authors concluded that MRI performs more favorably than transvaginal ultrasound in the presence of associated uterine leiomyomas².

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v2.0.2026

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Adnexal Mass/ Ovarian Cysts (PV-5)

Guideline	Page
Suspected Adnexal Mass – Initial Evaluation (PV-5.1).....	29
Simple Cysts (PV-5.2).....	31
Complex Adnexal Masses (PV-5.3).....	34
Screening for Ovarian Cancer/Suspected Ovary Cancer (PV-5.4).....	43
References (PV-5).....	44

Suspected Adnexal Mass – Initial Evaluation (PV-5.1)

PV.MC.0005.1.A

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- A potential mass is found on exam and/or found incidentally on other imaging
- Transvaginal (TV) ultrasound imaging (CPT[®] 76830) is the medically necessary initial study of choice.
 - Pelvic ultrasound (CPT[®] 76856 or CPT[®] 76857) can be performed if requested as a complimentary study to the TV ultrasound.
 - Once confirmed, Color Doppler ultrasonography (CPT[®] 93975 or CPT[®] 93976) may be medically necessary to evaluate the vascular characteristics of adnexal masses.
- MRI Pelvis without contrast (CPT[®] 72195), OR without and with contrast (CPT[®] 72197; CPT[®] 72195 if pregnant) is medically necessary if ultrasound does not identify the origin of the pelvic mass (adnexal, uterine, or other in etiology).
 - If the mass is unrelated to female pelvic organ anatomy, see **Abdominal Mass (AB-13)** in the Abdomen Imaging Guidelines.
- For O-RADS™ 0 (incomplete evaluation) either repeat ultrasound OR MRI Pelvis without contrast (CPT[®] 72195), OR without and with contrast (CPT[®] 72197) is medically necessary
 - If pregnant, MRI pelvis without contrast CPT[®] 72195 is medically necessary to avoid gadolinium exposure to the fetus.

Background and Supporting Information

- Consultation with or referral to a gynecologic oncologist is recommended for females assigned at birth with an adnexal mass who meet one or more of the following criteria:⁷
 - Postmenopausal with elevated CA-125 level, ultrasound findings suggestive of malignancy, ascites, a nodular or fixed pelvic mass, or evidence of abdominal or distant metastasis.⁷
 - Premenopausal with very elevated CA-125 level, ultrasound findings suggestive of malignancy, ascites, a nodular or fixed pelvic mass, or evidence of abdominal or distant metastasis.⁷
 - Premenopausal or postmenopausal with an elevated score on a formal risk assessment test such as the multivariate index assay, risk of malignancy index, or the Risk of Ovarian Malignancy Algorithm or one of the ultrasound-based scoring systems from the International Ovarian Tumor Analysis group.⁷

- O-RADS™ 0 should not be used for masses that are completely visualized but the diagnosis is unclear.
- Simple and Complex Adnexal Cysts
 - Simple cysts are smooth walled and clear without debris.
 - Complex cysts can have solid areas or excrescences, and/or debris in them, greater than 3mm irregular septations, mural nodules with Doppler-detected blood flow, and/or free abdominal/pelvic fluid.
- Suspected Adnexal Mass – Tumor Markers
 - The adnexa include the ovaries, Fallopian tubes, and ligaments that hold the uterus in place.
 - CA-125 is a tumor marker that is useful for the evaluation of adnexal mass:
 - Elevation occurs with both malignant (epithelial cancer) and benign entities (leiomyoma, endometriosis, PID, inflammatory disease such as lupus, and inflammatory bowel disease).
 - Increase in the markers over time occurs with malignancy only
 - Consider tumor markers in individuals with an abnormal ultrasound that is not a simple cyst
 - Other markers include Beta hCG, LDH, and AFP (germ cell tumors) and Inhibin A and B (granulosa cell tumor).

Simple Cysts (PV-5.2)

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- Simple cysts are smooth, thin walled, anechoic and clear without debris. Simple cysts up to 10 cm in diameter as measured by ultrasound are almost universally benign.
 - Repeat TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary
 - Follow up according to the below schedule if ≤ 10 cm
 - Routine use of 3D rendering (CPT® 76376/CPT® 76377) for evaluation of simple ovarian cysts is not medically necessary.

Simple Cyst Follow-Up

Size	Pre-Menopausal	Post-Menopausal
≤ 3 cm	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
>3 cm to 5 cm	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Follow-up in 12 months with TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary: <ul style="list-style-type: none"> ◦ If smaller (≥ 10-15% decrease) no further surveillance. ◦ If stable follow-up TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) at 24 months from initial exam ◦ If enlarging (≥ 10%-15% increase) follow-up TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) at 12 and 24 months from initial exam • If there is a change in morphology on follow imaging see Complex Adnexal Masses (PV-5.3)

Size	Pre-Menopausal	Post-Menopausal
<p>>5 cm to ≤10 cm</p>	<ul style="list-style-type: none"> Follow up in 8-12 weeks (proliferative phase if possible) with TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary; further follow-up intervals may be adjusted on basis of degree of cyst change 	<ul style="list-style-type: none"> Follow-up in 3-6 months with TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary; further follow-up intervals may be adjusted on basis of degree of cyst change. Subsequent follow up with TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary annually and if stable for 2 years or decreasing in size, no further imaging follow-up is needed.

Size	Pre-Menopausal	Post-Menopausal
<p>>10 cm</p>	<ul style="list-style-type: none"> • If not excised, US follow up within 6 months with TV Ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary • If stable, follow up Ultrasound can be done at 12 and 24 months from initial exam • If solid component, MRI Pelvis without and with contrast (CPT® 72197) is medically necessary • If ultrasound equivocal for Simple cyst, MRI Pelvis without and with contrast (CPT® 72197) is medically necessary • If follow up ultrasound imaging shows changing morphology and/or a vascular component then MRI Pelvis without and with contrast (CPT® 72197) 	<ul style="list-style-type: none"> • If not excised, US follow up within 6 months with TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary • If stable, follow up Ultrasound can be done at 12 and 24 months from initial exam • If solid component, MRI Pelvis without and with contrast (CPT® 72197) is medically necessary • If ultrasound equivocal for Simple cyst, MRI Pelvis without and with contrast (CPT® 72197) is medically necessary • If follow up ultrasound imaging shows changing morphology and/or a vascular component then MRI Pelvis without and with contrast (CPT® 72197) is medically necessary

Complex Adnexal Masses (PV-5.3)

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- Ultrasound imaging should provide characteristics of the cyst/mass prior to consideration of advanced imaging.
- Complex cysts found on ultrasound have characteristics that include: solid areas or excrescences, and/or debris, may have greater than 3mm irregular septations, and/or mural nodules with Doppler-detected blood flow, and/or free abdominal/pelvic fluid. Complex cysts have an O-RADS™ score of 2 or higher.
- Routine use of 3D rendering (CPT® 76376/CPT® 76377) for evaluation of complex ovarian cysts is not medically necessary unless otherwise mentioned in the table below.

Follow up Complex Adnexal Masses

Condition	Pre-Menopausal	Post-Menopausal
<p>Typical hemorrhagic cyst < 10 cm (O-RADS™ 2)</p>	<ul style="list-style-type: none"> • If initial ultrasound imaging confirms hemorrhagic cyst ≤5 cm no further imaging is medically necessary • If initial ultrasound imaging confirms hemorrhagic cyst >5 cm but <10 cm, follow up with Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) in 8-12 weeks is medically necessary. Duplex (Doppler) scan (CPT® 93975 complete; CPT® 93976 limited) may be approved as an add-on to TV ultrasound (CPT® 76830). <ul style="list-style-type: none"> ◦ If follow-up imaging confirms a hemorrhagic cyst that has not completely resolved or has enlarged, MRI Pelvis without and with contrast (CPT® 72197) is medically necessary. ◦ If stable, follow up TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) is medically necessary at 24 months from initial exam 	<ul style="list-style-type: none"> • Early postmenopausal (<5 years) either of the following is medically necessary: <ul style="list-style-type: none"> ◦ follow-up TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) in 2-3 months OR ◦ MRI Pelvis without and with contrast (CPT® 72197) • Late postmenopausal (≥ 5 years) hemorrhagic cyst should not occur <ul style="list-style-type: none"> ◦ MRI Pelvis without and with contrast (CPT® 72197) is medically necessary

Condition	Pre-Menopausal	Post-Menopausal
Hemorrhagic cyst $\geq 10\text{cm}$ (O-RADS™ 3)	<ul style="list-style-type: none"> • If ultrasound equivocal for Hemorrhagic cyst, MRI Pelvis without and with contrast (CPT 72197) • If initial ultrasound imaging confirms a Typical Hemorrhagic cyst $\geq 10\text{cm}$ <ul style="list-style-type: none"> ◦ If not excised consider TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) follow up within 6 months <ul style="list-style-type: none"> ▪ If stable, follow up Ultrasound can be done at 12 and 24 months from initial exam ◦ If solid component, MRI Pelvis without and with contrast (CPT® 72197) may be approved ◦ If follow up ultrasound imaging shows changing morphology and/or a vascular component then consider MRI Pelvis without and with contrast (CPT® 72197) 	<ul style="list-style-type: none"> • MRI Pelvis without and with contrast (CPT® 72197) is supported

Condition	Pre-Menopausal	Post-Menopausal
<p>Typical Endometriomas < 10cm (O-RADS™ 2)</p>	<ul style="list-style-type: none"> • If ultrasound equivocal for Endometriomas, MRI Pelvis without and with contrast (CPT 72197) • If initial imaging confirms a Typical Endometrioma, follow-up Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830); duplex (Doppler) scan (CPT® 93975 complete; CPT® 93976 limited) may be approved as an add-on to TV ultrasound (CPT® 76830) <ul style="list-style-type: none"> ◦ If <10cm and not surgically excised follow-up TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) in 12 months <ul style="list-style-type: none"> ▪ If stable follow up Ultrasound can be done at 24 months from initial exam ◦ If follow up ultrasound imaging shows changing morphology and/or a vascular component then consider MRI Pelvis without and with contrast (CPT® 72197) 	<ul style="list-style-type: none"> • If initial ultrasound imaging confirms a typical endometrioma < 10cm then either the following is medically necessary: <ul style="list-style-type: none"> ◦ Follow-up TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) in 2-3 months OR ◦ MRI Pelvis without and with contrast (CPT® 72197)
<p>Typical Endometriomas ≥10cm (O-RADS™ 3)</p>	<ul style="list-style-type: none"> • If initial ultrasound imaging confirms a Typical Endometrioma ≥10cm the following is medically necessary: <ul style="list-style-type: none"> ◦ If not excised, TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) follow up within 6 months <ul style="list-style-type: none"> ▪ If stable follow up Ultrasound can be done at 12 and 24 months from initial exam ◦ If solid component, MRI Pelvis without and with contrast (CPT® 72197) may be approved ◦ CPT® 72197) ◦ If follow up ultrasound imaging shows changing morphology and/or a vascular component then consider MRI Pelvis without and with contrast (CPT® 72197) 	<ul style="list-style-type: none"> • MRI Pelvis without and with contrast (CPT® 72197) is medically necessary

Condition	Pre-Menopausal	Post-Menopausal
<p>Typical Dermoid < 10cm (O-RADS™ 2)</p>	<ul style="list-style-type: none"> • If initial features are only suggestive for, or if assessment is uncertain follow-up Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) within 3 months is medically necessary • OR • If ultrasound equivocal for Dermoid, MRI Pelvis without and with contrast (CPT 72197) is medically necessary • If initial ultrasound imaging confirms a Dermoid, follow-up Pelvic ultrasound (CPT® 76856 or CPT® 76857); and/or TV ultrasound (CPT® 76830); duplex (Doppler) scan (CPT® 93975 complete; CPT® 93976 limited) may be medically necessary as an add-on to TV ultrasound (CPT® 76830). <ul style="list-style-type: none"> ◦ If ≤10 cm, may consider follow-up TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) in 12 months if not surgically excised <ul style="list-style-type: none"> ▪ If stable follow up Ultrasound can be done at 24 months from initial exam ◦ If follow up ultrasound imaging shows changing morphology and/or a vascular component then consider MRI Pelvis without and with contrast (CPT® 72197) 	<ul style="list-style-type: none"> • Same as Pre-Menopausal

Condition	Pre-Menopausal	Post-Menopausal
Typical Dermoid $\geq 10\text{cm}$ (O-RADS™ 3)	<ul style="list-style-type: none"> • If ultrasound equivocal for Dermoid, MRI Pelvis without and with contrast (CPT 72197) • If initial ultrasound imaging confirms a Typical Dermoid $\geq 10\text{cm}$ <ul style="list-style-type: none"> ◦ If not excised consider TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856) follow up within 6 months <ul style="list-style-type: none"> ▪ If stable follow up Ultrasound can be done at 12 and 24 months from initial exam ◦ If solid component, MRI Pelvis without and with contrast (CPT® 72197) may be approved ◦ If follow up ultrasound imaging shows changing morphology and/or a vascular component then consider MRI Pelvis without and with contrast (CPT® 72197) 	<ul style="list-style-type: none"> • Same as Pre-Menopausal
Typical benign extraovarian lesions Hydrosalpinges (Hydrosalpinx) or Peritoneal cysts (ORADS™ 2)	<ul style="list-style-type: none"> • If initial imaging confirms hydrosalpinx or peritoneal cysts, follow up imaging is not medically necessary 	<ul style="list-style-type: none"> • If initial imaging confirms hydrosalpinx or peritoneal cysts, follow up imaging is not medically necessary

Complex and/or solid adnexal mass incompletely evaluated by ultrasound

- Generally a repeat ultrasound is medically necessary (see table above for appropriate time intervals): TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76857 or CPT® 76856)
- MRI Pelvis without and with contrast (CPT® 72197, CPT® 72195 if pregnant) one time is medically necessary as follows:
 - To follow masses when they cannot be optimally visualized by ultrasound (e.g. suboptimal sonography due to large mass or obese individual)
 - Unexplained change of appearance during ultrasound follow-up

- Other Individual-driven indications (e.g. the application of established risk prediction models (e.g., family history of ovarian cancer), correlation with abnormal serum biomarkers, and/or pelvic symptoms)
- Differentiate the origin of pelvic masses that are not clearly of ovarian origin
- O-RADS™ score of 3 with a solid component
- O-RADS™ score of 4 or 5
- Concern for metastatic ovarian malignancy, see **Ovarian Cancer (ONC-21)** in the Oncology Imaging Guidelines

Background and Supporting Information

O-RADS™ Classification

O-RADS	
O-RADS™ 0	Incomplete Evaluation
O-RADS™ 1	Normal Ovary <ul style="list-style-type: none"> • No ovarian lesion • Physiologic cyst: follicle ≤3cm or corpus luteum typically ≤3cm
O-RADS™ 2	Almost Certainly Benign <ul style="list-style-type: none"> • Simple cyst less than 10 cm • Bilocular, smooth cyst • Unilocular, smooth, non-simple cysts (internal echos and/or incomplete septations) • Typical benign ovarian lesions <10cm (hemorrhagic cyst, dermoid cyst, endometrioma) • Typical benign extraovarian lesions (paraovarian cyst, peritoneal inclusion cysts, hydrosalpinx)
O-RADS™ 3	Low Risk <ul style="list-style-type: none"> • Typical benign ovarian lesions ≥10cm • Uni- or bilocular cyst, smooth, ≥10cm • Unilocular cyst, irregular, any size • Multilocular cyst, smooth, <10cm, Color Score (CS) <4 • Solid lesion, ± shadowing, smooth, any size, CS =1 • Solid lesion, shadowing, smooth, any size, CS 2-3

O-RADS	
ORADS™ 4	<p>Intermediate Risk</p> <ul style="list-style-type: none"> • Bilocular cysts without solid component(s), Irregular, any size, any color score • Multilocular cysts without solid component(s) <ul style="list-style-type: none"> ◦ Smooth, 10 cm, CS <4 ◦ Smooth, any size, CS 4 ◦ Irregular, any size, any CS • Unilocular cyst with solid component(s) <ul style="list-style-type: none"> ◦ <4 papillary projections or any solid component(s) not considered a papillary projection, any size • Bi- or multilocular cyst with solid component(s), any size, CS 1-2 • Solid lesion, non-shadowing, smooth, any size, CS 2-3
ORADS™ 5	<p>High Risk</p> <ul style="list-style-type: none"> • Unilocular cyst, ≥4 papillary projections, any size, and CS • Bi- or multilocular cyst with solid component(s), any size, CS 3-4 • Solid lesion, ± shadowing, smooth, any size, CS 4 • Solid lesion, irregular, any size, any CS • Ascites and/or peritoneal nodules

Pre-Menopausal – see table above

- For females assigned at birth of reproductive age (Pre-Menopausal), evaluation may include a pregnancy test (a quantitative hCG may be necessary if an ectopic pregnancy is suspected), CBC, serial hematocrit measurements, and appropriate cultures.
- Symptomatic individuals often require immediate interventions (antibiotics, surgery, and/or expectant management).
- Ultrasound characteristics usually suggest the diagnosis (ectopic pregnancy, functional cysts, tubo-ovarian abscess (See **Pelvic Inflammatory Disease (PV-7.1)**), hydrosalpinx, dermoid, endometrioma, hemorrhagic cyst and pedunculated fibroids (See **Leiomyoma/Uterine Fibroids (PV-12.1)**) and direct the treatment.
- An ovarian mass suspicious for metastatic disease (e.g. from breast, uterine, colorectal or gastric cancer) should be evaluated based on the appropriate Oncology Imaging Guidelines.

Post-Menopausal – see table above

- For post-menopausal females assigned at birth, most pelvic complex cysts or solid masses should be evaluated for surgical intervention and have tumor markers (i.e. CA-125) measured.
- Some for whom the usual management of a pelvic mass would include surgery may be at increased risk for perioperative morbidity and mortality. In such cases, repeat imaging may be a safer alternative than immediate surgery, although the frequency of follow-up imaging has not been determined.
- An ovarian mass suspicious for metastatic disease (e.g. from breast, uterine, colorectal or gastric cancer) should be evaluated based on the appropriate Oncology Imaging Guidelines.

Screening for Ovarian Cancer/Suspected Ovary Cancer (PV-5.4)

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- See **Ovarian Cancer (ONC-21)** in the Oncology Imaging Guidelines

Evidence Discussion (PV-5)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for female reproductive organs^{3,14}. Ultrasound has high sensitivity (>90%) for adnexal pathology¹⁴. Ultrasound also allows for real-time evaluation with color and power Doppler which can help identify vascular flow and differentiate solid components². Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access and lack of ionizing radiation exposure. MRI is accepted as an adjunct modality to ultrasound in cases where ultrasound may not fully characterize a soft tissue abnormality due to its superior signal to noise ratio^{14,15,16}. CT is of limited use in the evaluation of adnexal masses given its suboptimal delineation of adnexal soft tissue¹⁴.
- Accurate diagnosis of adnexal pathology is imperative in order to limit invasive interventions for benign lesions¹⁵ and improve preoperative triage to a gynecologic oncologist for high-risk lesions. In order to standardize reporting of adnexal lesions, the American College of Radiology (ACR) has created the Ovarian-Adnexal Reporting and Data-System (O-RADS)⁷. A meta-analysis of 26 studies demonstrated that O-RADS has high sensitivity for detection of malignancy (95%)⁴. A classification of O-RADS US Category 2 has an extremely low risk of malignancy (<1%), while a Category 5 has a high risk of malignancy (≥50%)¹⁶. For an indeterminate lesion on ultrasound or features concerning for malignancy, adjunct imaging with MRI is supported to aid in preoperative triage.

References (PV-5)

v2.0.2026

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Endometriosis (PV-6)

Guideline	Page
Endometriosis (PV-6.1).....	47
References (PV-6).....	49

Endometriosis (PV-6.1)

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v2.0.2026

- TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76856 or CPT® 76857) is medically necessary as the first line diagnostic exam for suspected endometriosis.
- MRI Pelvis without contrast (CPT® 72195) or without and with contrast (CPT® 72197) is medically necessary as follows:
 - Prior to planned surgery for suspected deep pelvic endometriosis such as rectovaginal endometriosis, deeply infiltrative bladder endometriosis, and cul-de-sac obliteration.
 - To characterize complex adnexal masses as endometrioma if ultrasound equivocal See **Complex Adnexal Masses (PV-5.3)**
- If known or suspected thoracic endometriosis, see **Pneumothorax/Hemothorax (CH-19.1)** in the Chest Imaging Guidelines.
- For suspected abdominal wall or cesarean section scar endometriosis:
 -
 - MRI without and with contrast of the suspected area is considered medically necessary if the ultrasound is inconclusive.
 -

Evidence Discussion (PV-6.1)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound (TVUS) are widely accepted as the initial imaging modality of choice for evaluation of endometriosis^{2,4,5,7}. A meta-analysis by Hudelist et al found transvaginal ultrasound was found to have a sensitivity and specificity of 91 and 98%, respectively, with a positive predictive value of 98% and negative predictive value of 95%². A study by Goncalves et al compared TVUS done preoperatively to diagnostic laparoscopy for deep and ovarian endometriosis⁷. This study found TVUS to be accurate in identifying all sites of ovarian and deep endometriosis, with significantly higher sensitivity than diagnostic laparoscopy in detecting rectosigmoid endometriosis. Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure.
- MRI of the pelvis can be useful for cases of suspected deep pelvic endometriosis^{5,3}. A study by Macario et al found MRI of the pelvis prior to laparoscopy to have an overall sensitivity of 91.9% and specificity of 91.2% in the preoperative diagnosis of deep pelvic endometriosis with cul-de-sac obliteration³. MRI is also indicated for further evaluation of suspected endometrioma of the ovary if ultrasound is equivocal^{11,12}. The American College of Radiology (ACR) Appropriateness Criteria for adnexal mass states, "When an adnexal mass is indeterminate on US, either the

organ of origin is uncertain or it is unclear whether the mass is benign or malignant, then MRI with intravenous (IV) contrast (if feasible) becomes the modality of choice.¹² Per the ACR Appropriateness Criteria, "MRI can readily diagnose typical endometriomas." A study by Dirrichs et al found MRI to improve sensitivity and specificity of diagnosis for indeterminate adnexal masses found with TVUS¹³. In this study, MRI changed the management decision in 34% of patients¹³.

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Pelvic Inflammatory Disease (PID) (PV-7)

Guideline	Page
Pelvic Inflammatory Disease (PV-7.1).....	52
References (PV-7).....	54

Pelvic Inflammatory Disease (PV-7.1)

PV.PI.0007.1.A

v2.0.2026

- Clinical examination alone is usually sufficient for confirming the diagnosis of pelvic inflammatory disease. See **Pelvic Pain/Dyspareunia, Female (PV-11.1)** if other causes of pelvic pain are suspected.
- Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) is medically necessary as the initial study for imaging of suspected pelvic inflammatory disease (PID) if diagnosis is uncertain following bimanual pelvic examination and laboratory testing (such as WBC, CRP and ESR, Microscopy of the vaginal secretions, and testing for Neisseria gonorrhoeae and Chlamydia trachomatis) OR for suspected Tubo-Ovarian Abscess (TOA). Color Doppler ultrasonography (CPT® 93975 or CPT® 93976) may be added.
- CT Pelvis with contrast (CPT® 72193) or MRI Pelvis with and without contrast (CPT® 72197) is medically necessary:
 - If diagnosis is uncertain following examination, laboratory testing and ultrasound
 - Ultrasound shows extensive abscess formation and further imaging is needed for treatment planning
 - Suspected TOA with inconclusive ultrasound
- If suspected abdominal abscess see **Abdominal Sepsis (Suspected Abdominal Abscess) (AB-3.1)** in the Abdomen Imaging Guidelines.

Background and Supporting Information

PID may be clinically suspected based on findings of abdominal and/or pelvic pain, cervical or vaginal mucopurulent discharge, dyspareunia, inter-menstrual and/or post coital bleeding, fever, low back pain, nausea/vomiting, urinary frequency, cervical motion tenderness, uterine and/or adnexal tenderness on exam.

Laboratory findings may include elevated erythrocyte sedimentation rate, elevated C-reactive protein, lab documentation of cervical infection with N. gonorrhoeae or C. trachomatis, WBC on saline microscopy of vaginal fluid, and/or endometrial biopsy with endometritis.

Evidence Discussion (PV-7.1)

- Clinical examination and laboratory testing are appropriate in the initial diagnostic testing for suspected pelvic inflammatory disease (PID)^{2,7,10}. Imaging studies can be helpful when further evaluation is needed and to rule out other differential diagnoses such as ovarian cysts or gastrointestinal disease^{2,7,10}.

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for evaluation of pelvic inflammatory disease^{2,7,10,8,9}. Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure. The addition of Power Doppler to ultrasonography has been found to increase sensitivity in the diagnosis of PID^{2,7,8,9}.
- CT Pelvis or MRI Pelvis can be considered if further imaging is needed following inconclusive ultrasound for diagnosis of PID, suspected tubo-ovarian abscess, or to evaluate for the extent of PID abscess formation for treatment planning^{2,7,8,9,6,4}.

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v2.0.2026

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Polycystic Ovary Syndrome (PV-8)

Guideline	Page
Polycystic Ovary Syndrome (PCOS) (PV-8.1).....	57
References (PV-8).....	59

Polycystic Ovary Syndrome (PCOS) (PV-8.1)

PV.PC.0008.1.A

v2.0.2026

- Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) is medically necessary when history, exam, and/or laboratory findings are suspicious for PCOS.
- Laboratory testing to be done prior to advanced imaging: Virilizing hormone levels (Testosterone and DHEAS). Disorders that mimic the clinical features of Polycystic ovary syndrome (PCOS) should be excluded by measuring: TSH, Prolactin, and 17-OHP (hydroxyprogesterone) levels. Others to consider based on the clinical presentation: Cortisol levels, ACTH, dexamethasone suppression testing, IGF-1, FSH, LH, estradiol.
- If elevated serum levels of androgens are found and an adrenal etiology is suspected - see **Adrenal Cortical Lesions (AB-16.1)** in the Abdomen Imaging Guidelines.

Background and Supporting Information

- Polycystic ovary syndrome is the most common hormonal disorder among females of reproductive age, and is one of the leading causes of infertility.
- Diagnostic criteria of polycystic ovary syndrome (Two of the following three criteria are required):
 - Oligo/anovulation
 - Hyperandrogenism
 - Clinical (hirsutism or less commonly male pattern alopecia) or
 - Biochemical (raised FAI (free androgen index) or free testosterone)
 - Polycystic ovaries on ultrasound
 - Defined as an ovary containing 12 or more follicles (or 25 or more follicles using new ultrasound technology) measuring 2 to 9 mm in diameter or an ovary that has a volume of greater than 10 mL on ultrasonography. A single ovary meeting either or both of these definitions is sufficient for diagnosis of polycystic ovaries.
- Clinical Features of PCOS
 - Hirsutism and male pattern balding consistent with hyperandrogenism
 - Irregular or absent menstrual cycles
 - Subfertility or infertility
 - Psychological symptoms – anxiety, depression, psychosexual dysfunction, eating disorders
 - Metabolic features – obesity, dyslipidaemia, diabetes

Evidence Discussion (PV-8)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the modality of choice for evaluation of the ovaries in patients with suspected polycystic ovarian syndrome (PCOS)^{1,2,3,6}. Ultrasound allows for real-time evaluation of the pelvic anatomy, has wide availability, fast access, and lack of ionizing radiation exposure. It also allows for follicular count which will help establish the diagnosis of PCOS^{1,2,3,6}.
- Laboratory testing may point to other etiology of symptoms and may better direct additional imaging^{1,2,3,6}.
- Imaging for suspected adrenal pathology is addressed in the Abdominal Section of these guidelines.

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v2.0.2026

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Initial Infertility Evaluation, Female (PV-9)

Guideline	Page
Initial Infertility Evaluation, Female (PV-9.1).....	61
References (PV-9).....	62

Initial Infertility Evaluation, Female (PV-9.1)

PV.IE.0009.1.C

v2.0.2026

This guideline is not intended for fertility treatment follow-up and management. See individual fertility coverage policy for imaging during active fertility treatment.

- A one time Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) is medically necessary for initial infertility workup.
 - Repeat ultrasounds or serial ultrasounds are not medically necessary for initial infertility workup
- To evaluate for tubal patency:
 - Hysterosalpingography (HSG) (CPT® 74740) **or** Sonohysterosalpingography (CPT® 76831) is medically necessary
- If ultrasound is indeterminate or there is clinical suspicion for intra-cavitary lesion (such as polyp or fibroid), hydrosalpinx, uterine synechia, adenomyosis or uterine anomalies either of the following are medically necessary:
 - 3D US imaging (add-on CPT® 76377)
 - US Color Doppler (CPT® 93975 or CPT® 93976)

Evidence Discussion (PV-9)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for evaluation of the female pelvic organs^{1,2,5,6,8}
- Hysterosalpingography (HSG) or Sonohysterosalpingography can be utilized in assessing tubal patency. Sonohysterosalpingography is more operator dependent than HSG, however, both procedures benefit patients in that they can help avoid the more invasive laparoscopy and chromotubation, which carry the risks of surgery and anesthesia^{6,8}.

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v2.0.2026

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Intrauterine Device (IUD) and Tubal Occlusion (PV-10)

Guideline	Page
Intrauterine Device (PV-10.1).....	64
Hysteroscopically Placed Tubal Occlusion Device (PV-10.2).....	65
Implantable Contraceptive Devices (PV-10.3).....	66
References (PV-10).....	68

Intrauterine Device (PV-10.1)

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- “Lost” IUD inability to palpate IUD string on pelvic exam (e.g. cervical cytology brushing), and/or see IUD on speculum exam:
 - CT Pelvis without contrast (CPT[®] 72192) or CT Abdomen and Pelvis without contrast (CPT[®] 74176) or MRI Pelvis without contrast (CPT[®] 72195) are medically necessary when both ultrasound and plain x-ray are negative or non-diagnostic.
- If pregnancy test is positive:
- The use of gynecology CPT codes for pregnant women is not supported. Therefore, transvaginal ultrasound (CPT[®] 76830) and pelvic ultrasound (CPT[®] 76856 or CPT[®] 76857) are not supported for those with a positive pregnancy test or known pregnancy. If a pregnancy test is positive, then obstetrical CPT codes are indicated (**General Guidelines (PV-1.0)**).

Hysteroscopically Placed Tubal Occlusion Device (PV-10.2)

PV.ID.0010.2.A

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- TV ultrasound (CPT® 76830) and/or Pelvic ultrasound (CPT® 76856 or CPT® 76857) is medically necessary if:
 - Suspected complication of hysteroscopically placed tubal occlusion device:
 - Abnormal tubal occlusion device position
 - Uterine perforation
 - Severe pain
 - Excessive bleeding

Implantable Contraceptive Devices (PV-10.3)

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- If implant is unable to be palpated
 - If implant is radiopaque (contains barium sulphate)
 - Initial imaging should include either Ultrasound or X-ray of arm
 - If thoracic implant migration is suspected Chest X-ray should be considered
 - If Chest X-ray is equivocal CT Chest without or with contrast (CPT® 71250 or CPT® 71260) or CTA Chest (CPT® 71275) is medically necessary
 - If implant is radiolucent
 - Initial imaging should include Ultrasound of the arm
 - MRI Upper Extremity without contrast (CPT® 73218) is medically necessary if ultrasound is equivocal
 - If thoracic implant migration is suspected MRI Chest without or without and with contrast (CPT® 71550 or CPT® 71552) is medically necessary

Background and Supporting Information

- As of 2019, neither the Essure nor the Adiana tubal occlusion device is in production.
- Currently the only implant available in the United States is an etonogesterl containing implant. The original version of this implant (Implanon) was released in 2001. This was replaced by an updated implant in 2011 (Nexplanon) which contains barium sulphate, making it radiopaque and easily visualized on X-ray.
- A rare complication of the implant is distant vascular migration to the pulmonary vasculature.

Evidence Discussion (PV-10)

- Transabdominal and transvaginal ultrasounds are the initial imaging methods for locating a malpositioned IUD^{12,14,11,5,2,3}. Ultrasound has the benefits of being widely available, accurate, and free from exposure to ionizing radiation. The addition of 3D image processing to ultrasound is advantageous as it allows for the visualization of the complete IUD, including the shaft and arms, and demonstrates its relationship to the endometrial cavity^{8,2,3}.
- In cases where the ultrasound is non-diagnostic and the pregnancy test is negative, an X-ray should be performed. X-rays are useful as IUDs are radiopaque; if the IUD is not visualized on an X-ray, a diagnosis of expulsion can be made¹¹.

- If both ultrasound and X-ray results are equivocal, CT or MRI may be useful to delineate the IUD's position and its relationship to other abdominal organs^{1,6}.

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Pelvic Pain/Dyspareunia, Female (PV-11)

Guideline	Page
Pelvic Pain/Dyspareunia, Female (PV-11.1).....	71
References (PV-11).....	75

Pelvic Pain/Dyspareunia, Female (PV-11.1)

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- This guideline is intended for the workup of pelvic pain in relation to the female pelvic organs
 - If there is clinical concern for a non-gynecological cause of pelvic pain please see the most applicable condition-specific guideline (e.g., General Abdomen, General, General Peripheral Vascular Disease, General Nerve and Neuromuscular Disorder Imaging, etc.)
 - History, physical examination, and laboratory data can guide subsequent workup in individuals presenting with pelvic pain.
 - A pregnancy test should be performed in premenopausal females
 - Ultrasound is the initial work up for pelvic pain suspected to originate from the female pelvic organs
 - Premenopausal pelvic pain and the pregnancy test is positive,
 - See the applicable obstetrical imaging policy
 - Premenopausal pelvic pain and the pregnancy test is negative or the patient is postmenopausal
 - Ultrasound – transvaginal (CPT® 76830) and/or pelvic (CPT® 76856 or CPT® 76857)
 - Duplex Doppler (CPT® 93975 or CPT® 93976) is medically necessary if there is an ovarian mass and/or suspicion of ovarian torsion on the initial ultrasound.
 - Duplex Doppler (CPT® 93975 or CPT® 93976) is medically necessary for chronic pelvic pain (pelvic pain for 6 months or greater)
 - If ultrasound is indicative of pelvic organ disease, etc.)
 - Further imaging as per appropriate section of guidelines (i.e.-ovarian mass/torsion **Adnexal Mass/Ovarian Cysts (PV-5)**, PID **Pelvic Inflammatory Disease (PV-7.1)**, etc.)
 - If initial ultrasound is normal
 - Further evaluation depending on the clinical suspicion may include urological work-up, gastroenterology work-up, laparoscopic evaluation(s)
 - If the initial ultrasound is equivocal for unexplained chronic pelvic pain (pelvic pain for 6 months or greater) and/or above evaluations are non-diagnostic the following is medically necessary:
 - CT Pelvis with contrast (CPT® 72193) OR

- MRI Pelvis without contrast or with and without contrast (CPT® 72195 or CPT® 72197)
- Dysmenorrhea
 - Primary Dysmenorrhea
 - Empiric treatment with Nonsteroidal Anti-inflammatories, Hormonal Therapies or non-pharmacologic strategies
 - If failure of empiric treatment – Secondary Dysmenorrhea should be suspected
 - Secondary Dysmenorrhea
 - Initial evaluation is with Ultrasound – transvaginal (CPT® 76830) and/or pelvic (CPT® 76856 or CPT® 76857)
 - Additional work up depends on the pelvic pathology suspected
 - For suspected **Endometriosis (PV-6)**
 - For suspected **Adenomyosis (PV-4)**
 - For suspected **Fibroids (PV-12)**
- Evaluation for Pelvic Adhesive Disease
 - Initial imaging is an Abdominal (CPT® 76700 or CPT® 76705) and/or Pelvic Ultrasound (CPT 76856 or CPT 76857) to complete assessment for surgical planning
 - If ultrasound is inconclusive then MRI Pelvis without contrast or with and without contrast (CPT® 72195 or CPT® 72197) is medically necessary for surgical planning
- Persistent Genital Arousal Disorder/Genito-Pelvic Dysesthesia (PGAD/GPD)
 - Work-up should include detailed history, physical exam, and appropriate laboratory exams and neurogenital testing
 - Further work-up is dependent on the suspected etiology
 - For Urethral Diverticula – See **Urethral Diverticula (PV-13.2)**
 - For pelvic floor dysfunction – See **Urinary Incontinence/Pelvis Prolapse/ Fecal Incontinence (PV-22)**
 - For Tarlov Cyst – See **Miscellaneous Spinal Lesions (SP 2.8)**
 - For Pudendal Neuropathy – See **Focal Neuropathy (PN 2.1)**
 - For Pelvic Congestion Syndrome – See **Pelvic Congestion Syndrome (PVD-13.4)**
- Work-up of interstitial cystitis/bladder pain syndrome (IC/BPS) should include history, physical exam, laboratory exam (urinalysis and urine culture), cystoscopy, and measurement of post void residual urine by bladder catheterization.
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) is then medically necessary.

- CT Pelvis with contrast (CPT® 72193) is medically necessary if ultrasound is equivocal for complicated interstitial cystitis/bladder pain syndrome.
- o Proctalgia Syndromes
 - Prior to advanced imaging, the evaluation of rectal/perineal pain should include:
 - Digital rectal examination (assess for mass, fissures, hemorrhoids, etc.)
 - Pelvic examination in females to exclude PID
 - Recent flexible sigmoidoscopy or colonoscopy subsequent to the start of reported symptoms to exclude inflammatory conditions or malignancy.
 - Endoanal ultrasound (CPT® 76872), MRI Pelvis with and without contrast (CPT® 72197), or CT Pelvis with contrast (CPT® 72193) are medically necessary after the above studies have been performed or if laboratory or clinical information suggest infection, abscess, or inflammation

Background and Supporting Information

- Dysmenorrhea is pain with the menstrual cycle. It can be divided into primary dysmenorrhea (pain in the absence of pelvic pathology) and secondary dysmenorrhea (pain due to pelvic pathology or recognized medical condition).
- Multiple meta-analyses have been performed regarding the detection of intra-abdominal adhesions by various imaging modalities. Limperg et al found that ultrasound has a sensitivity of 95.9%, specificity of 93.1%, a PPV of 60.4% and a NPV of 99.2% for the identification for assessment of periumbilical bowel adhesion. In addition, Gerner-Rasmussen found an overall accuracy for detecting intra-abdominal adhesions of 76 to 100% for ultrasound, 79 to 90% for MRI and 66% for CT. Ultrasound has the benefit of being widely available and lacks exposure to contrast agents. MRI is able to visualize adhesions between viscera, but has a higher false positive rate and over diagnoses adhesions
- Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS) has an unpleasant sensation (pain, pressure, discomfort), perceived to be related to the urinary bladder. It is associated with lower urinary tract symptoms of more than six weeks duration, in the absence of infection or other identifiable causes.
- Proctalgia syndromes are characterized by recurrent episodes of rectal/perineal pain, and may be due to sustained contractions of the pelvic floor musculature.

Evidence Discussion (PV-11)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for pelvic pain of gynecologic origin^{9,10,11,3}. Ultrasound also allows for real-time evaluation with color and power Doppler which can help identify vascular flow and distinguish fluid and cysts from soft tissue^{9,10,11}. Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure.

- MRI is accepted as an adjunct modality to ultrasound in cases where ultrasound may not fully characterize a soft tissue abnormality due to its superior signal to noise ratio^{9,10,11}. CT of the pelvis may demonstrate engorged veins, pelvic fluid, peritoneal thickening, hydrosalpinx or pyosalpinx and tubo-ovarian abscess^{9,10}.
- MRI pelvis, CT pelvis or endoanal ultrasound are appropriate for the evaluation of proctalgia after digital rectal examination, pelvic examination in females and recent endoscopy to exclude inflammatory conditions or malignancy⁴.
- Often, the history, physical examination, and laboratory data can guide subsequent workup in individuals presenting with pelvic pain. If initial ultrasound is normal, further evaluation may include urological work-up, gastroenterology work-up, or laparoscopic evaluation(s)⁷.
 - The differential diagnosis for chronic pelvic pain is extensive. Determining the etiology of pelvic pain is important to plan treatment^{7,5,6}.

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Leiomyoma/Uterine Fibroids and other Uterine Masses (PV-12)

Guideline	Page
Suspected Uterine Mass (PV-12.0).....	78
Leiomyoma/Uterine Fibroids (PV-12.1).....	79
Endometrial Polyp (PV-12.2).....	82
Asymptomatic Thickened Endometrium (PV-12.3).....	83
References (PV-12).....	84

Suspected Uterine Mass (PV-12.0)

PV.UF.0012.1.A

v2.0.2026

- A potential mass found on exam and/or found incidentally on other imaging
 - Transvaginal (TV) ultrasound imaging (CPT® 76830) is the medically necessary initial study
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) is medically necessary if requested as a complimentary study to the TV ultrasound
 - Further imaging as per appropriate section of guidelines (i.e., ovarian mass/torsion **Adnexal Mass/Ovarian Cysts (PV-5)**, **Adenomyosis (PV-4.1)**, etc.)

Leiomyoma/Uterine Fibroids (PV-12.1)

PV.UF.0012.1.C

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Leiomyoma are also known as "fibroids".

- Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) are medically necessary for any the following:
 - Suspected leiomyoma with symptoms of pelvic pain, suspected ureteral obstruction secondary to inability to void urine, pelvic pressure and/or abnormal uterine bleeding and/or an enlarged uterus found on physical exam with a negative pregnancy test (if pre-menopausal).
 - Pre-operative prior to myomectomy
 - Recurrent symptoms such as abnormal bleeding, pain, or pelvic pressure
 - 3-D Rendering (CPT® 76377) and/or Duplex (Doppler) scan (CPT® 93975 complete; CPT® 93976 limited) if ultrasound is equivocal and intracavitary lesion is suspected, or for surgical planning for myomectomy
 - There is no current evidence to support 3-D Rendering (CPT® 76377 or CPT® 76376) for planning for uterine artery embolization.
- MRI Pelvis and/or Abdomen to determine surgical approach for hysterectomy is not medically necessary.
- MRI Pelvis without and with contrast (CPT® 72197), or without contrast (CPT® 72195) in the evaluation of leiomyomas is medically necessary for the following:
 - Guide the treatment of leiomyoma/fibroid in an enlarged uterus with multiple leiomyoma/fibroid following indeterminate ultrasound when myomectomy is planned.
 - Equivocal sonohysterography or panoramic hysteroscopy with suspected submucous leiomyoma and imaging is needed to plan for myomectomy
 - Leiomyoma necrosis is suspected
 - Guide the treatment of leiomyoma/fibroid in an enlarged uterus with multiple leiomyoma/fibroid following indeterminate ultrasound when Radiofrequency Ablation of Leiomyomas is planned
 - Uterine artery embolization is being considered
 - If MRI is equivocal, MRA Pelvis (CPT® 72198) or CTA Pelvis (CPT® 72191) if requested by or in consultation with the interventional radiologist planning the uterine artery embolization
 - There is no evidence to support interval MRI after embolization unless persistent or recurrent symptoms

- The vascular embolization code (CPT® 37243) is inclusive of all radiological supervision and interpretation, intraprocedural roadmapping, and imaging guidance necessary to complete the intervention.
 - Additional advanced imaging codes are not medically necessary during the procedure to complete the intervention.
- If malignancy is suspected, See Oncology Imaging Guidelines
- MRI Pelvis with and without (CPT® 72197) for suspected leiomyosarcoma is medically necessary if one or more of the following ultrasound features AND symptoms are present;
 - Ultrasound features suggestive of leiomyosarcoma are:
 - Large sized (greater than 8 cm)
 - Irregular borders
 - Areas of cystic change or necrosis
 - Increase in central and peripheral vascularity
 - Rapid change in size
 - Symptoms suggestive of leiomyosarcoma would include postmenopausal women with a new or rapidly enlarging myometrial mass or rapid growth of a uterine mass in a premenopausal patient (increase of 6 weeks gestation size within 1 year)
- CT is not medically necessary for evaluating female pelvic anatomy due to its limited soft tissue contrast resolution

Background and Supporting Information

Leiomyomata are also known as “fibroids.”

Evidence Discussion (PV-12)

- Transabdominal pelvic and/or transvaginal pelvic ultrasound are widely accepted as the initial imaging modality of choice for uterine fibroids^{1,2}. Ultrasound also allows for real-time evaluation with color and power Doppler which can help identify vascular flow and distinguish fluid and cysts from soft tissue. 3-D rendering is useful for further evaluation of intracavitary lesions and for surgical planning for myomectomy³. Additional benefits to ultrasound as a first line imaging modality include wide availability, fast access, and lack of ionizing radiation exposure.
- MRI is accepted as an adjunct modality to ultrasound in cases where ultrasound may not fully characterize a soft tissue abnormality due to its superior signal to noise ratio. MRI can be useful for surgical planning for myomectomy, determining degeneration or necrosis of fibroids, and to plan uterine artery embolization or radiofrequency ablation^{4,5,7,9}.
- MRI may be considered for suspected leiomyosarcoma in cases where ultrasound features and symptoms are suggestive of this diagnosis⁸. The reported prevalence

of unsuspected sarcoma at surgery for symptomatic leiomyoma ranges widely, from 0.01% (one in 10 000) to 0.28% (one in 352)⁸.

- MRI offers the highest accuracy for characterization of uterine masses before intervention due to improved soft-tissue contrast, larger field of view, diffusion sequences, and multiplanar sequences. For procedural planning, MRI offers better localization of fibroid position in the uterus and can be used to assess viability and arterial supply of fibroids. In the context of preprocedural planning, MRI features have been evaluated for performance in separating leiomyosarcoma from leiomyomas or atypical leiomyomas. MRI features noted in multiple studies as associated with leiomyosarcoma include the following features: intermediate to high signal intensity of the mass at T2-weighted imaging, irregular margins of the uterine mass with the adjacent myometrium, and high signal intensity at high-b value diffusion-weighted imaging and corresponding low signal intensity on apparent diffusion coefficient maps⁸.
- MRA or CTA may be used to determine vascular flow to uterine fibroids for embolization planning in cases where MRI is insufficient. Knowledge of the vascular supply for fibroids is crucial for successful embolization of target arteries¹¹.
- CT is of limited use in the evaluation of pelvic anatomy due to its limited soft tissue contrast resolution¹⁰.

Endometrial Polyp (PV-12.2)

PV.UF.0012.1.A

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- Transvaginal (TV) ultrasound imaging (CPT® 76830) is the medically necessary initial study
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) is medically necessary if requested as a complimentary study to the TV ultrasound
 - 3-D Rendering (CPT® 76377 or CPT® 76376) is medically necessary for further delineation of the intracavitary lesion
- Hysteroscopy remains the gold standard for diagnosis and treatment of endometrial polyps
 - Allows for direct visualization, histologic diagnosis and concurrent treatment of the polyp
 - If biopsy confirms a malignancy, then see the appropriate oncology guideline

Asymptomatic Thickened Endometrium (PV-12.3)

PV.UF.0012.1.A

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- Thickened endometrium (>4mm) incidentally discovered in a postmenopausal individual without bleeding
 - Need not routinely trigger evaluation, but individualized assessment, including endometrial sampling, based on patients risk factors is medically necessary
 - If biopsy confirms a malignancy, then see the appropriate oncology guideline
 - Advanced imaging is not medically necessary for Endometrial Intraepithelial Neoplasia or Atypical Endometrial Hyperplasia (EIN-AEH) as imaging has not been found to improve outcomes for this condition.

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Periurethral Cysts, Urethral Diverticula, and Vaginal Masses (PV-13)

Guideline	Page
Periurethral cysts, Skene duct cyst, Bartholin's gland cysts and Gartner's duct cyst (PV-13.1).....	87
Urethral Diverticula (PV-13.2).....	88
Vaginal Masses (PV-13.3).....	89
References (PV-13).....	90

Periurethral cysts, Skene duct cyst, Bartholin's gland cysts and Gartner's duct cyst (PV-13.1)

PV.UD.0013.1.A

v2.0.2026

- Initial evaluation includes any of the following:
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or Transvaginal ultrasound (CPT® 76830) and/or Transperineal ultrasound (CPT® 76872) is medically necessary
 - MRI Pelvis without and with contrast (CPT® 72197) is medically necessary for surgical planning when ultrasound equivocal

Urethral Diverticula (PV-13.2)

PV.UD.0013.2.A

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- Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or Transvaginal ultrasound (CPT® 76830) and/or Transperineal ultrasound (CPT® 76872) are medically appropriate for initial evaluation but are not required prior to advanced imaging.
- Urethrography or CT Urethrography (CT Pelvis without and with contrast CPT® 72194 or CT Pelvis with contrast CPT® 72193) is medically necessary to evaluate any urethral abnormalities.
- MRI Pelvis without and with contrast (CPT® 72197) is medically necessary for surgical planning

Vaginal Masses (PV-13.3)

PV.UD.0013.3.A

v2.0.2026

- Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or Transvaginal ultrasound (CPT® 76830) and/or Transperineal ultrasound (CPT® 76872) is medically necessary for initial evaluation
- MRI Pelvis without and with contrast (CPT® 72197) is medically necessary for surgical planning

Background and Supporting Information

Symptomatic infection of congenital periurethral glands can result in urethral diverticula. Symptoms include pain, urinary urgency, frequency of urination, recurrent urinary tract infection, dribbling after urination, or incontinence.

Evidence Discussion (PV-13)

- Transabdominal, transvaginal and transperineal ultrasound are often utilized as initial imaging for female pelvic anatomy^{5,6,10,11}. Ultrasound has the benefit of being widely available, accurate and does not have exposure to ionizing radiation. MRI is useful in cases of equivocal ultrasound imaging or for surgical planning^{5,6,11}.
- Multiple modalities can be used for the detection of urethral diverticula. Transperineal and transvaginal ultrasound can be utilized in detecting urethral diverticula. Ultrasound has the advantage of being readily available, does not require catheterization and lacks exposure to ionizing radiation. However ultrasound is operator dependent and the reported sensitivity for detection of urethral diverticula ranges from <50 to 100%⁴. Urethrography can also be used to detect urethral diverticula with a sensitivity of 67-95% but carries the risk of radiation exposure⁴. MRI has excellent soft tissue resolution and has a reported sensitivity of 100% for urethral diverticula².

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Congenital (Mullerian) Uterine and Vaginal Anomalies (PV-14)

Guideline	Page
Uterine Anomalies (PV-14.1).....	92
Vaginal Anomalies (PV-14.2).....	93
References (PV-14).....	94

Uterine Anomalies (PV-14.1)

PV.UA.0014.1.C

v2.0.2026

- This guideline is intended for congenital uterine anomalies.
- Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) is medically necessary for initial evaluation. 3-D Rendering (CPT® 76377) may be an add-on if uterine anomaly is suspected on ultrasound.
- If ultrasound is indeterminate:
 - Sonohysterosalpingography (CPT® 76831) is medically necessary
- Retroperitoneal ultrasound (CPT® 76770 or CPT® 76775) is medically necessary to evaluate for possible coexisting renal anomalies if a complex uterine anomaly is present.
 - MRI Abdomen without contrast or without and with contrast (CPT® 74181 or CPT® 74183) or CT urography (CT Abdomen and Pelvis without and with contrast CPT® 74178) is medically necessary for indeterminate renal anomaly on ultrasound.
- An arcuate uterus is considered a normal variant. Therefore, advanced imaging of a known arcuate uterus is not medically necessary.
- MRI Pelvis without and with contrast (CPT® 72197) is medically necessary when:
 - Ultrasound is indeterminate for a complex uterine anomaly, or
 - Requested for surgical planning of previously diagnosed uterine anomaly
 - If ultrasound confirms uterine septum, advanced imaging is not indicated for surgical planning.

Background and Supporting Information

Mullerian anomalies are complex structural anomalies deriving from errors in the embryonic development of the mullerian duct. These may include uterine remnant or agenesis, cervical agenesis, unicornate uterus, bicornuate uterus, uterine didelphys, vaginal septum and/or other complex anomalies. Uterine septum is not a complex uterine anomaly

Vaginal Anomalies (PV-14.2)

PV.UA.0014.2.A

v2.0.2026

- This guideline is intended for congenital vaginal anomalies.
- Pelvic ultrasound (CPT® 76856 or CPT® 76857) and/or TV ultrasound (CPT® 76830) and/or Transperineal ultrasound (CPT® 76872) and/or Translabial ultrasound (CPT® 76857) are medically necessary for initial evaluation. 3-D Rendering (CPT® 76377 or CPT® 76376) is medically necessary as an add-on if vaginal anomaly is suspected on ultrasound.
- MRI Pelvis without and with contrast (CPT® 72197) is medically necessary when:
 - Ultrasound is indeterminate for a complex vaginal anomaly, or
 - Requested for surgical planning of previously diagnosed vaginal anomaly

Background and Supporting Information

- Mullerian anomalies are complex structural anomalies deriving from errors in the embryonic development of the mullerian duct. These may include uterine remnant or agenesis, cervical agenesis, unicornate uterus, bicornuate uterus, uterine didelphys, vaginal septum and/or other complex anomalies. Uterine septum is not a complex uterine anomaly.

Evidence Discussion (PV-14)

- Transabdominal and transvaginal ultrasound remain the preferred initial imaging for female pelvic anatomy¹. Ultrasound has the benefit of being widely available, accurate and does not have exposure to ionizing radiation, making it an excellent first line modality for the evaluation of Müllerian anomalies. With the addition of 3D imaging, ultrasound has a reported sensitivity as high as 100% for the detection of uterine anomalies². MRI is also highly sensitive for the detection of uterine anomalies and is useful in cases of equivocal ultrasound imaging or for surgical planning of known complex malformations².
- For detection of congenital anomalies of the kidney and upper urinary tract ultrasound is usually the first line imaging modality because of its wide availability, low cost and lack of ionizing radiation^{6,7}. CT or MRI can be utilized for further delineation of the renal anatomy in cases where ultrasound is inconclusive.

References (PV-14)

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Fetal MRI and Other Pregnancy Imaging (PV-15)

Guideline	Page
Fetal MRI (PV-15.1).....	96
Placenta Accreta/Placenta Accreta Spectrum/Placenta Percreta (PV-15.2).....	97
C-section, Cornual or Interstitial Ectopic Pregnancy (PV-15.3).....	98
Pelvimetry (PV-15.4).....	99
Abnormal Non-Invasive Prenatal Testing (NIPT) and Maternal Malignancy (PV-15.5).....	100
References (PV-15).....	102

Fetal MRI (PV-15.1)

PV.MR.0015.1.C

v2.0.2026

CPT® Code Guidance

- Fetal MRI (CPT® 74712) [plus CPT® 74713 for each additional fetus]
- Do not report CPT® 74712 and CPT® 74713 in conjunction with CPT® 72195, CPT® 72196, CPT® 72197
- If only placenta or maternal pelvis is imaged without fetal imaging, use MRI Pelvis (CPT® 72195)

- *eviCore does not review Fetal MRI for Cigna

Placenta Accreta/Placenta Accreta Spectrum/Placenta Percreta (PV-15.2)

PV.MR.0015.2.C

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- See Cigna Coverage Policy 0142 Ultrasound in Pregnancy (including 3D, 4D and 5D Ultrasound)
- MRI Pelvis without contrast (CPT® 72195) is medically necessary if the ultrasound is indeterminate or advanced imaging is needed for surgical planning.
- MRI Pelvis without contrast (CPT® 72195) is medically necessary if only placenta or maternal pelvis is imaged without fetal imaging

C-section, Cornual or Interstitial Ectopic Pregnancy (PV-15.3)

PV.MR.0015.3.C

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- If a cornual or interstitial ectopic or C-section scar ectopic pregnancy is suspected on ultrasound the following are medically necessary:
 - 3D rendering (CPT® 76377), and/or Color Doppler (CPT® 93976) is medically necessary with ultrasound
 - MRI Pelvis without contrast (CPT® 72195) is medically necessary if ultrasound is inconclusive.

Pelvimetry (PV-15.4)

PV.MR.0015.4.A

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- Pelvimetry (CT or MRI Pelvimetry) lacks sufficient evidence to be clinically useful. Current recommendations are that further randomized control studies be performed before it is adapted into routine clinical practice.

Evidence Discussion (PV-15)

- Transabdominal and transvaginal obstetric ultrasound remain the preferred initial imaging for fetal evaluation of the fetus and maternal pelvic anatomy¹. Ultrasound has the benefit of being widely available and does not have exposure to ionizing radiation.
- Fetal MRI has emerged as an adjunct imaging to fetal ultrasound in cases where the initial ultrasound is unclear or additional information is needed for surgical or delivery planning. It has the benefits of not being limited by maternal body habitus, fetal position, ossification of fetal skull/bones, or oligohydramnios¹.
- There is much uncertainty surrounding the use of gadolinium in pregnancy. Gadolinium is water-soluble and can cross the placenta, reaching the amniotic fluid and fetal circulation. While the risk of fetal effects of gadolinium remains uncertain, it has been shown to be teratogenic in animal studies. Given these possible fetal risks, the use of gadolinium in pregnancy should be limited. Its use should only be in situations where the benefits clearly outweigh the risks⁸.
- MRI can be used as an adjunct to ultrasound if there is suspicion for abnormal placentation. Sensitivity and specificity for placental invasion is comparable between ultrasound and MRI (sensitivity of 88% and specificity of 86% for ultrasound and 93% and 94% for MRI)¹⁴. MRI has also been associated with both false positive and false negative diagnoses. Hence, a stepwise approach to evaluation, starting with ultrasound, then followed by the use of MRI for equivocal or nondiagnostic ultrasound is supported.
- Ectopic pregnancy is the leading cause of maternal mortality in the first trimester⁹. Ultrasound remains the initial imaging modality for ectopic pregnancy, but MRI may add additional information, especially in cases of rare implantation-site ectopic pregnancy (e.g. Cesarean Section scar ectopic). MRI is indicated in cases where the ultrasound is nondiagnostic⁹.
- There is currently insufficient evidence to support the use of imaging pelvimetry (x-ray, CT or MRI) in delivery planning¹¹.

Abnormal Non-Invasive Prenatal Testing (NIPT) and Maternal Malignancy (PV-15.5)

PV.MR.0015.4.A

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- Non-invasive Prenatal Testing (NIPT) is a common screening method to assess the risk of fetal aneuploidy in the antenatal period. Cell-free DNA (cfDNA) of placental origin circulating in the maternal blood is tested, typically by chromosome microarray analysis, for certain aneuploidies. The presence of genomic anomalies originating from a maternal source can confound these results and have also been linked to occult maternal malignancy.
- When found, maternally derived anomalies merit further work up.
 - Complete work up to rule out fetal source of anomalous results should be performed.
 - This would include further testing such as detailed fetal anatomy scan, amniocentesis or chorionic villus sampling (CVS) if applicable.
 - A targeted maternal work-up should be performed.
 - Complete history, physical and appropriate lab work up (i.e. CBC, peripheral smear, LDH, Liver and renal function testing, appropriate tumor markers) should be performed to better elucidate possible malignant source.
 - If clinical work up reveals a suspected source, targeted imaging depending on suspected source (i.e. mammogram, chest x-ray, liver ultrasound) should be undertaken
 - If clinical work up does not reveal potential source
 - Whole Body MRI (CPT® 76498) is medically necessary

Background and Supporting Information

Studies have show that the most common cancers found among those with abnormal NIPT were of hematologic origin, followed by breast and colon cancers.

Some tumor markers are less reliable in pregnancy. CA 125, CA 15.3, AFP and SCC Ag can be elevated in normal pregnancy. However, CA19-9, LDH, AMH, CEA and HE-4 are not commonly elevated in pregnancy. These tumor markers can aid in focusing clinical work up. NIPT is typically performed in the first and the early second trimesters. This is prior to physiologic elevation of inhibin B in the third trimester and development of

hypertensive abnormalities of pregnancy (which can increase LDH), so these markers may be considered in early pregnancy.

Evidence Discussion (PV 15.5)

No prospective large-scale studies have evaluated NIPT and incidental detection on maternal malignancy, hence the specificity and sensitivity of this testing remains unknown. However, a series of retrospective studies report a positive predictive value of NIPT for detection of occult maternal malignancy of over 50%. There are currently no evidence-based guidelines by which to classify a NIPT result as suspicious for malignancy^{1,2,3,4,5}.

If initial work up determines a maternal source of the abnormal NIPT, targeted maternal work up is merited. If targeted work up fails to reveal possible source of abnormal NIPT then additional screening is merited^{5,6}. Whole body MRI is preferred in pregnancy as it yields the highest diagnostic benefit. MRI also lacks ionizing radiation, making a preferred imaging modality to CT or PET. Gadolinium should be avoided during pregnancy secondary to possible risk to the fetus^{7,8,9}. MRI, however, is susceptible to artifact and may not be achievable by pregnant patients, who may not be able to breath hold and lay supine for long durations^{10,11}.

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v2.0.2026

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Molar Pregnancy and Gestational Trophoblastic Neoplasia (GTN) (PV-16)

<u>Guideline</u>	<u>Page</u>
Molar Pregnancy and GTN (PV-16.1).....	106
References (PV-16).....	107

Molar Pregnancy and GTN (PV-16.1)

PV.MP.0016.1.A

v2.0.2026

- Molar pregnancy –
 - Ultrasound is the initial medically necessary study
 - Once diagnosed on an Obstetrical Ultrasound treatment is usually evacuation.
- Individuals should undergo chest x-ray pre- and post-evacuation.
 - If chest x-ray is positive for metastases, management as per GTN guidelines, see **Gestational Trophoblastic Neoplasia (GTN) (ONC-22.5)** in the Oncology Imaging Guidelines.
- Serum hCG levels are obtained every 1-2 weeks after treatment of molar pregnancy until they normalize
- Individuals with a molar pregnancy and rising or plateauing hCG levels post evacuation and/or Gestational trophoblastic neoplasia
 - See **Gestational Trophoblastic Neoplasia (GTN) (ONC-22.5)** in the Oncology Imaging Guidelines.

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v2.0.2026

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Impotence/Erectile Dysfunction (PV-17)

Guideline	Page
Impotence/Erectile Dysfunction (PV-17.1).....	109
References (PV-17).....	110

Impotence/Erectile Dysfunction (PV-17.1)

PV.ED.0017.1.A

v2.0.2026

- Imaging depends on the suspected disease and is medically necessary as follows:
 - Penile Doppler ultrasound (CPT® 93980) if erectile dysfunction suspected²
 - CTA Pelvis with contrast (CPT® 72191) if large vessel vascular insufficiency is suspected following ultrasound.
 - Duplex ultrasound (CPT® 93980) to assess penile vasculature in Peyronie's disease¹
 - If male hypogonadism is suspected, See **Pituitary (HD-19)** in the Head Imaging Guidelines
- Functional MRI or PET studies are not medically necessary for this indication.
- Priapism
 - Penile Doppler Ultrasound (CPT® 93980) is medically necessary if non-ischemic priapism is suspected
 - MRI likely does not have a role in the initial diagnosis of priapism given the time sensitive nature of diagnosis and management
 - In patients with persistent non-ischemic priapism where an embolization may be necessary CTA (CPT® 72191) or MRA Pelvis (CPT® 72198) is medically necessary
 - Penial Doppler Ultrasound (CPT® 93980) is medically necessary post procedure for ischemic priapism
 - If patient has priapism >24-48 hours or refractory to treatment, MRI Pelvis without and with contrast (CPT® 72197) or MRI Pelvis without contrast (CPT® 72195) is medically necessary

Evidence Discussion (PV-17)

- Erectile dysfunction (ED) may utilize penile Doppler ultrasound to assess penile vasculature. Ultrasound has the advantages of being able to provide robust information about both cavernous arterial inflow and the veno-occlusive capacity of the penis⁷, is readily available, minimally invasive and tolerated well by patients⁸. Advanced imaging with CTA of the pelvis with contrast may be indicated if large vessel vascular insufficiency is suspected. A penile duplex ultrasound may be utilized in the workup of Peyronie's disease¹.
- Advanced imaging for ED or Peyronie's disease with either PET or functional MRI is considered investigational.
- A penile Doppler ultrasound may be utilized for workup of non-ischemic priapism or post procedure for ischemic priapism⁵. The sensitivity of Doppler ultrasound in localizing an anterior-cavernosal fistula is approximately 100%⁴. If embolization is planned, CTA or MRA of the pelvis may be indicated.

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v2.0.2026

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Penis–Soft Tissue Mass (PV-18)

Guideline	Page
Penis-Soft Tissue Mass (PV-18.1).....	112
References (PV-18).....	113

Penis-Soft Tissue Mass (PV-18.1)

PV.PM.0018.1.A

v2.0.2026

- Penile ultrasound (CPT® 76857) is medically necessary for initial evaluation soft-tissue lesions of the penis, Duplex (Doppler) scan CPT® 93975 complete; CPT® 93976 limited) is medically necessary as an add-on.
- If primary penile cancer is suspected, biopsy is indicated
 - For further workup of biopsy confirmed penile cancer see **Cancers of External Genitalia – Initial Work-up/Staging (ONC-24.6)** in the Oncology Imaging Guidelines.
- Peyronie’s Disease
 - Ultrasound (CPT® 76857) is medically necessary
 - MRI Pelvis without and with contrast (CPT® 72197) is medically necessary if ultrasound is equivocal and surgery or injection therapy is being contemplated

Evidence Discussion (PV-18)

- Soft tissue lesions of the penis can be evaluated with penile ultrasound with doppler imaging as an initial evaluation¹. Ultrasound allows a readily available, non-invasive option for accurate assessment of the vascular and structural features of the penis while avoiding ionizing radiation. Advanced imaging with CT abdomen and pelvis and/or lymphoscintigraphy or SPECT/CT may be indicated for biopsy proven cancer depending on the stage, however is not necessary for the initial workup of a penile mass².
- Peyronie's disease can be initially assessed utilizing ultrasonography⁵. Advanced imaging with MR can be performed after equivocal ultrasound if necessary prior to surgical intervention or injection therapy⁶.

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v2.0.2026

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Male Pelvic Disorders (PV-19)

Guideline	Page
Male Pelvic Disorders (PV-19.1).....	115
References (PV-19).....	118

Male Pelvic Disorders (PV-19.1)

PV.PE.0019.1.A

v2.0.2026

- This guideline is intended for the evaluation of pelvic pain in relation to the male pelvic organs
 - If there is clinical concern for a non-genitourinary cause of pelvic pain, please refer to the most applicable condition-specific guideline (e.g., General Abdomen, General Peripheral Vascular Disease, General Nerve and Neuromuscular Disorder Imaging, etc.)
- Chronic Pelvic Pain Syndrome (CPPS)
 - This may include males experiencing chronic perineal pain, bilateral scrotal content pain, penile pain, pelvic pain or pain with ejaculation. See: **Scrotal Pathology (PV 20.1)** for evaluation of scrotal pain as the predominant symptom.
 - Workup includes comprehensive history, physical exam, and laboratory studies as well as cystoscopy, urodynamics, and/or imaging when the diagnosis is unclear
 - Transabdominal pelvic ultrasound (bladder and prostate [CPT® 76856 or CPT® 76857]) is medically necessary as initial imaging
 - CT Pelvis with contrast (CPT® 72193) OR MRI Pelvis without contrast (CPT® 72195) OR with and without contrast (CPT® 72197) is medically necessary if ultrasound is equivocal or nondiagnostic and alternative clinical conditions are being considered
- Prostate
 - Prostate Disorders
 - Suspected Benign Prostatic Hypertrophy with obstructive voiding symptoms:
 - Transrectal ultrasound (CPT® 76872) or Pelvis transabdominal ultrasound (bladder and prostate [CPT® 76856 or CPT® 76857]) is medically necessary
 - For prostatitis with urinary retention or suspected abscess, any of the following imaging studies are medically necessary:
 - Transrectal ultrasound (CPT® 76872) or Pelvis transabdominal ultrasound (bladder and prostate [CPT® 76856 or CPT® 76857])
 - CT Pelvis with contrast (CPT® 72193) or MRI Pelvis without contrast (CPT® 72195) or with and without contrast (CPT® 72197) if ultrasound is equivocal for abscess or mass
 - Prostate Artery Embolization (PAE)
 - MRA Pelvis (CPT® 72198) or CTA Pelvis (CPT® 72191) is medically necessary for evaluation of the pelvic vasculature if:
 - prostate artery embolization is planned

- The vascular embolization code (CPT® 37243) is inclusive of all radiological supervision and interpretation, intraprocedural roadmapping, and imaging guidance necessary to complete the intervention.
 - Additional advanced imaging codes are not medically necessary during the procedure to complete the intervention.
- Testicular
 - Hematospermia
 - MRI Pelvis without contrast (CPT® 72195) or MRI Pelvis without and with contrast (CPT® 72197) is medically necessary to evaluate for ANY of the following:
 - Age 40 or older
 - Recurrent hematospermia, regardless of age
 - Hematospermia with associated signs or symptoms of disease (e.g., pain, fever, leukocytosis, hematuria), regardless of age
 - Abnormal findings on Transrectal ultrasound
- Rectal
 - Proctalgia Syndromes
 - Prior to advanced imaging, the evaluation of rectal/perineal pain should include BOTH:
 - Digital rectal examination (assess for mass, prostate, fissures, hemorrhoids, etc.)
 - Recent flexible sigmoidoscopy or colonoscopy subsequent to the start of reported symptoms to exclude inflammatory conditions or malignancy
 - Endoanal ultrasound (CPT® 76872), MRI Pelvis without and with contrast (CPT® 72197), or CT Pelvis with contrast (CPT® 72193) is medically necessary after the above studies have been performed or if laboratory or clinical information suggest infection, abscess, or inflammation.
- Bladder
 - Work-up of interstitial cystitis/bladder pain syndrome (IC/BPS) may include history, physical exam, laboratory exam (urinalysis and urine culture), cystoscopy, and measurement of post void residual urine by bladder catheterization
 - Pelvic ultrasound (CPT® 76856 or CPT® 76857) is medically necessary
 - CT Pelvis with contrast (CPT® 72193) is medically necessary if ultrasound is equivocal for complicated interstitial cystitis/bladder pain syndrome.

Background and Supporting Information

- The proctalgia syndromes are characterized by recurrent episodes of rectal/perineal pain, and may be due to sustained contractions of the pelvic floor musculature.

Evidence Discussion (PV-19)

- For individuals with lower urinary tract symptoms suspected to be caused by benign prostatic hypertrophy, ultrasound is the modality of choice for evaluation. It allows for assessment of bladder volume and post-void residual as well as intravesical prostatic protrusion⁶. Ultrasound is advantageous as it is readily available, effective, and free of ionizing radiation.
- Prostate artery embolization is an excepted treatment for the management of lower urinary tract symptoms according to the American Urological Association¹¹. Imaging is indicated for further delineation of the pelvic vasculature to aid in preprocedure surgical planning. The accuracy of CTA to identify the prostate artery has been shown to approximately 97%¹³. MRI angiography has been shown to identify the prostate artery in 76% of cases, has been helpful in identifying malignancy when suspected and does not carry the risk of radiation exposure¹³.
- MRI Pelvis is supported as the initial diagnostic imaging modality for hematospermia.¹⁹⁻²⁰ MRI is advantageous due to its superior soft-tissue contrast, comprehensive pelvic evaluation, and lack of ionizing radiation.¹⁹ Transrectal ultrasound and CT are less useful as initial tests for hematospermia, since ultrasound may fail to detect key seminal vesicle abnormalities and CT does not provide clear detail of the prostate and seminal tract.¹⁹⁻²⁰
- In individuals with suspected proctalgia, initial evaluation should include a through exam, including digital rectal exam and direct visualization with sigmoidoscopy or colonoscopy to exclude other causes of rectal pain. Clinical history and normal digital rectal exam is often sufficient to make a diagnosis of proctalgia⁷. If infection, abscess or inflammation is suspected imaging is indicated¹⁵.
- The work up for interstitial cystitis/bladder pain syndrome (IC/BPS) should include a careful history, physical and laboratory examination¹⁶. Additional testing such as radiologic imaging should be undertaken only when it will alter the treatment approach¹⁶. Ultrasound may be useful for adjunct diagnosis¹⁷ and has the advantages of being widely available and without ionizing radiation. Additional testing with CT may be appropriate when ultrasound results are inconclusive but bears the risk of ionizing radiation.

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v2.0.2026

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Scrotal Pathology (PV-20)

Guideline	Page
Scrotal Pathology (PV-20.1).....	121
Paratesticular and spermatic cord masses (PV-20.2).....	122
Testicular Microlithiasis (PV-20.3).....	123
References (PV-20).....	124

Scrotal Pathology (PV-20.1)

PV.SP.0020.1.A

v2.0.2026

- Scrotal pain or mass
 - Scrotal ultrasound (CPT® 76870) and/or Duplex (Doppler) ultrasound (CPT® 93975 or CPT® 93976) for initial evaluation
 - MRI Pelvis without and with contrast (CPT® 72197) or Tc-99m scrotal scintigraphy (CPT® 78761) is medically necessary if ultrasound is inconclusive.
- Scrotal pain and hydrocele with suspicion of hernia
 - See Inguinal or Femoral Hernia, or Indeterminate **Groin Pain (AB-12.1)** in the Abdomen guidelines
- Cryptorchidism/undescended testis in the adult.
 - Scrotal ultrasound (CPT 76870), MRI Pelvis without and with contrast (CPT® 72197), or CT Pelvis with contrast (CPT® 72193)
- Varicocele evaluation
 - Scrotal ultrasound and/or Duplex (Doppler) ultrasound (CPT® 76870 and/or CPT® 93975 or CPT® 93976) of the scrotum with color flow mapping in supine and upright positions is medically necessary to assess venous reflux into plexus pampiniformis if varicocele suspected (for example, in inguinal hernia evaluation)
 - CT Abdomen and Pelvis with contrast (CPT® 74177) is medically necessary for right-sided varicocele, when there is suspicion for intra-abdominal pathology

Background and Supporting Information

- The causes of scrotal pain may include torsion, epididymitis, strangulated hernia, segmental testicular infarction, trauma, testicular tumor, and idiopathic scrotal edema.¹

Paratesticular and spermatic cord masses (PV-20.2)

PV.SP.0020.2.A

v2.0.2026

- Scrotal ultrasound (CPT® 76870) is medically necessary as the initial imaging procedure.
 - MRI Pelvis without and with contrast (CPT® 72197), exploration and biopsy are additional considerations if ultrasound is inconclusive.

Testicular Microlithiasis (PV-20.3)

PV.SP.0020.3.A

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- Scrotal ultrasound (CPT® 76870) is medically necessary for initial evaluation
- Annual Scrotal ultrasound (CPT® 76870) follow-up is medically necessary only if a risk factor is present which include:
 - Family history of germ cell tumor
 - Malescent
 - Orchidopexy
 - Testicular atrophy
- For personal history of germ cell tumor See **Testicular, Ovarian and Extragonadal Germ Cell Tumors (ONC-20)** in the Oncology Imaging Guidelines

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v2.0.2026

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Fistulae, Abscess, and Pilonidal Cyst (PV-21)

Guideline	Page
Fistula in Ano (PV-21.1).....	127
Abscess (PV-21.2).....	128
Pelvic Fistula (PV-21.3).....	129
Pilonidal Cyst (PV-21.4).....	131
References (PV-21).....	132

Fistula in Ano (PV-21.1)

PV.PA.0021.1.A

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- MRI Pelvis without and with contrast (CPT® 72197) is medically necessary.
 - If MRI cannot be performed, endoscopic ultrasound is superior, and thus preferential, to CT imaging.
 - CT Pelvis with contrast (CPT® 72193) is an inferior study to either of the above (accuracy of endoscopic ultrasound vs. CT for perianal fistula is 82% vs. 24%) and it is medically necessary only in circumstances in which MRI and endoscopic ultrasound cannot be performed.

Evidence Discussion (PV-21.1)

- Anorectal fistulas most commonly arise from abscesses that originate in the anal crypts (90%). Physical exam will frequently identify these but advanced imaging is often needed to determine the course of the fistulous tract, its relationship with the sphincteric musculature and associated infection/abscess¹¹. Because of its superior resolution, MRI is the preferred modality, followed by endoscopic ultrasound and then CT¹.
- Non-iatrogenic anal fistula located in atypical positions (lateral) suggest the possibility of Crohn's disease. See IBD – Perirectal/Perianal disease (AB-23.3).

Abscess (PV-21.2)

PV.PA.0021.2.A

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- Perirectal Abscess
 - MRI Pelvis without and with contrast (CPT® 72197) is the preferred study
 - CT Pelvis with contrast (CPT® 72193) is medically necessary as an alternative study if desired.
 - For the evaluation of Perianal and Perirectal Disease related to Crohn's Disease, See **Perirectal/Perianal Disease (AB-23.3)** in the Abdomen Imaging Guidelines.
- Perineal Abscess
 - Fournier Gangrene
 - Diagnosis commonly made on the basis of clinical and physical exam
 - CT Pelvis, contrast as requested, is medically necessary for evaluating extent of disease for surgical planning
- Vulvar Abscess
 - CT Pelvis, contrast as requested, is medically necessary to delineate the extent of a vulvar abscess and evaluate surrounding structures for surgical planning
 - MRI Pelvis without and with contrast (CPT® 72197) may also be medically necessary for surgical planning

Evidence Discussion (PV-21.2)

- Pelvic infections can take the form of intraperitoneal abscesses or perineal wall infections¹².
- Refer to Abdominal Sepsis (AB-3-1) for intraabdominal pelvic abscess.
- History and physical can usually identify perineal (perirectal and perianal) abscesses¹². Due to a high rate of recurrence due to associated fistulous tracts, advanced imaging with MRI (preferred because of its improved resolution), endorectal ultrasound or CT scan^{1,11}. Primary treatment is surgical drainage^{1,12}.

Pelvic Fistula (PV-21.3)

PV.PA.0021.3.A

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- History and physical exam (to include pelvic and/or anorectal examination):
 - Rectovesicular Fistula - the following are medically necessary:
 - MRI Pelvis with and without contrast (CPT® 72197) OR
 - CT Pelvis with contrast (CPT® 72193)
 - Vaginal Fistula:
 - Enterovaginal, Colovaginal, Rectovaginal or Anovaginal:
 - Anoscopy and/or proctoscopy
 - Endoanal ultrasound (rarely used)
 - MRI Pelvis with and without contrast (CPT® 72197) is medically necessary as the initial modality for suspected enterovaginal fistula
 - CT Pelvis with contrast (CPT® 72193) is medically necessary if:
 - MRI contraindicated OR urgent evaluation of acute diverticulitis OR early postoperative period
 - Urinary Vaginal Fistula (Ureterovaginal, Vesicovaginal, or Urethrovaginal) - the following are medically necessary:
 - Cystoscopy
 - CT urography (CT Abdomen and Pelvis without and with contrast CPT® 74178) and/or CT cystography (CT Pelvis without contrast CPT® 72192) or
 - MRI Pelvis with and without contrast (CPT® 72197)

Background and Supporting Information

- A vaginal fistula is an abnormal communication between the vagina and either a portion of the digestive system or the urinary tract
 - Causes of vaginal fistula may include IBD, endometriosis, infection, tumor, radiation, obstetrical trauma and surgical injuries.
 - Symptoms of vaginal fistula-Persistent vaginitis, dyspareunia, perineal dermatitis, foul-smelling vaginal discharge, and/or urinary or fecal incontinence.
- A rectovesicular fistula is an abnormal communication between the rectum and the bladder.
 - Causes of rectovesicular fistula may include chronic infection, cancer, diverticulitis, IBD, radiation and surgical injuries.
 - Symptoms of rectovesicular fistula-Bubbles in the urine, brown or cloudy urine, blood in the urine, painful urination, recurrent urinary tract infection, and/or abdominal pain

Evidence Discussion (PV-21.3)

- MRI has been established as a method of delineating vaginal fistulas. This is secondary to its excellent soft tissue resolution, allowing identification of acute inflammatory changes, post-surgical fibrosis, neoplastic tissue and abscesses³. It also has the benefit of lacking ionizing radiation, but may have limited access as compared with CT. MRI is also contraindicated by the presence of metallic foreign body or MRI-incompatible devices, such as some pacemakers³. Studies have shown a positive predictive value of 92% for delineation of anorectal vaginal fistulas⁴.
- CT can also be utilized in the visualization of fistulas^{3,6}. It does have lower contrast resolution than MRI³ and does carry the risk of ionizing radiation. It may be beneficial in emergent situations given the wide availability or in situations where an MRI is contraindicated. CT-urography/cystography is also a mainstay in evaluation of the urinary tract and can be utilized to evaluate urinary vaginal fistulas³.

Pilonidal Cyst (PV-21.4)

PV.PA.0021.4.A

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- Advanced imaging is not medically necessary for pilonidal cyst disease⁹.
 - History and physical exam are sufficient for diagnosis of pilonidal cyst.
- If other underlying etiologies are suspected, refer to appropriate guidelines:
 - For suspected osteomyelitis, see: **General Infection/Osteomyelitis (MS-9.1)** in the Musculoskeletal Imaging Guidelines
 - For abdominal fistulae, see: **Fistulae (AB-48)** in the Abdomen Imaging Guidelines
 - For suspected spinal dysraphism, see: **Cutaneous Indications to Suspect Occult Spinal Dysraphism (PEDSP-4.2)** in the Pediatric Spine Imaging Guidelines

Evidence Discussion (PV-21.4)

- Pilonidal cysts most frequently arise in the natal cleft, the groove between the buttocks overlying the sacral area. Asymptomatic disease usually does not require any treatment. Acute and chronic infections can be evaluated sufficiently with history and physical alone⁹. Advanced imaging is limited to concern for complicated disease (See **General Infection/Osteomyelitis - MS-9.1**).

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Urinary Incontinence/ Pelvic Prolapse/Fecal Incontinence (PV-22)

Guideline	Page
Urinary Incontinence – Initial Imaging (PV-22.1).....	134
Urinary Incontinence – Further Imaging (PV-22.2).....	135
Pelvic Prolapse (PV-22.3).....	136
Fecal Incontinence (PV-22.4).....	138
References (PV-22).....	140

Urinary Incontinence – Initial Imaging (PV-22.1)

PV.IN.0022.1.A

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- Initial Imaging, associated with other evaluations, are medically necessary as follows:
 - Non-Neurogenic Incontinence
 - Measurements of post void residual urine by Bladder ultrasound (CPT® 51798) OR Bladder catheterization
 - In addition to post void residual volume determination, screening for UTI should be considered
 - Neurogenic Incontinence
 - Ultrasound urinary tract (CPT® 76770 or CPT® 76775)

Background and Supporting Information

Urinary incontinence can be “stress,” “urgency,” or mixed; neurogenic or non-neurogenic; and complicated or uncomplicated. Neurogenic incontinence can occur from cerebral, spinal or peripheral neurological diseases.

Evidence Discussion (PV-22.1)

- The workup of urinary incontinence involves a thorough history and physical examination^{2,6}. For incontinence due to non-neurogenic causes, advanced imaging is rarely necessary in the initial evaluation². Assessment of the urine post void residual may be completed either with bladder ultrasound or urethral catheterization⁶.
- Baseline imaging should be obtained in the evaluation of neurogenic urinary incontinence with renal bladder ultrasound¹⁴.

Urinary Incontinence – Further Imaging (PV-22.2)

PV.IN.0022.2.A

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- CT Abdomen and Pelvis, contrast as requested, or CT Pelvis, contrast as requested, is medically necessary for any of the following:
 - Abnormality on ultrasound that requires further evaluation
 - Complicated incontinence
 - Failed conservative treatment
 - Pain or dysuria
 - Hematuria
 - Recurrent infection
 - Previous radical pelvic surgery
 - Suspected fistula
 - Suspected mass
 - Previous pelvic or prostate irradiation
 - Suspected fistulae
 - Detecting ectopic ureters if ultrasound is non-diagnostic
 - Pre-operative planning for complicated incontinence when ordered by or in consultation with the operating physician
- For neurogenic urinary incontinence See **Red Flag Indications (SP-1.2)** and **Myelopathy (SP-7.1)** in the Spine Imaging Guidelines and **Dementia (HD-8.1)** and **Normal Pressure Hydrocephalus (NPH) (HD-8.4)** in the Head Imaging Guidelines.

Evidence Discussion (PV-22.2)

- Urinary incontinence that has failed a trial of conservative treatment may require advanced imaging with CT of the abdomen and/or pelvis with or without contrast². Advanced imaging may also be ordered for pre-operative planning if requested by the surgeon or to follow up on an abnormality noted on previous ultrasound⁶.
- Other clinical scenarios where advanced imaging may be medically necessary are incontinence occurring concomitantly with abdominal or pelvic pain, dysuria or hematuria, or in the setting of recurrent urinary tract infections². Incontinence in the setting of previous radical pelvic surgery or radiation may also require advanced imaging¹⁴.
- If there is suspicion of a fistula, mass, or ectopic ureters (and ultrasound is non-diagnostic), advanced imaging with CT may be indicated⁶.

Pelvic Prolapse (PV-22.3)

PV.IN.0022.3.A

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- Transvaginal (TV) ultrasound CPT® 76830) and/or Transperineal ultrasound (CPT® 76872) is medically necessary as the initial study of choice
 - Pelvic ultrasound CPT® 76856 or CPT® 76857) is medically necessary if requested as a complimentary study.
- Urodynamic testing may be helpful if there is incontinence with a stage II or greater prolapse or voiding dysfunction
- MRI Pelvis CPT® 72195 or CPT® 72197) is medically necessary for the following:
 - Pelvic floor anatomy and pelvic organ prolapse evaluations if exam and TV ultrasound CPT® 76830) and/or Pelvic ultrasound CPT® 76856 or CPT® 76857) are equivocal; or
 - Pre-operative planning for complex organ prolapse when ordered by or in consultation with the operating physician; or
 - Persistent incontinence following surgery
- Mesh and Graft complications
 - Diagnostic evaluation for mesh and graft complications may include colonoscopy, cystoscopy, and/or urodynamics
 - Transvaginal (TV) ultrasound CPT® 76830) and/or Pelvic ultrasound (CPT® 76856 or CPT® 76857), CT Abdomen and/or Pelvis, contrast as requested, MRI Pelvis without contrast or without and with contrast (CPT® 72195 or CPT® 72197) are medically necessary depending on the mesh and graft complication
- Sacral osteomyelitis may be a complication of sacrocolpopexy. MRI Pelvis with and without contrast (CPT® 72197) is medically necessary for lower back pain and/or suspected sacral osteomyelitis after this procedure.

Evidence Discussion (PV-22.3)

- The mainstay of evaluation of pelvic organ prolapse remains clinical pelvic examination. This allows for direct evaluation of prolapse and calculation prolapse quantification^{3,15}.
- Translabial, transperineal or transvaginal ultrasound have shown correlation with^{3,15}. Ultrasound also allows for real-time evaluation, has wide availability, fast access, and lack of ionizing radiation exposure.
- MRI has been shown to have excellent soft tissue delineation. It circumstances where clinical exam and ultrasound are equivocal, MRI may provide additional information for conditions such as enterocele, sigmoidocele and intussusception¹⁵.
- Complications related to mesh and graft placement in pelvic floor surgery are diverse in nature⁴. Work up for suspected complication is complex and may include

a diverse range of diagnostic procedures such as radiologic imaging, cystoscopy, and colonoscopy. Surgical meshes have variable visibility¹². Given the varied nature of these complications modality of imaging should be tailored to suspected complication.

- A known rare complication of sacrocolpopexy is sacral osteomyelitis. In cases of suspected osteomyelitis, MRI is the preferred imaging as it has a very high sensitivity for detection infection, especially in early stages¹².

Fecal Incontinence (PV-22.4)

PV.IN.0022.4.A

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The evaluation of fecal incontinence generally proceeds as follows:

- Determine the severity of the incontinence (Bristol Stool Scale, Fecal Incontinence Severity Index, etc.)
- History and Physical to include digital rectal examination and perianal pinprick (to assess for neurogenic causes)
- Trial of conservative management
- Diagnostic Testing if symptoms persist to include:
 - Ano-rectal Manometry (manometry, sensation, volume tolerance, and compliance)
 - Balloon Expulsion Test
 - Endoanal ultrasound (CPT® 76872) to confirm sphincter defects in individuals with suspected sphincter injury (e.g. history of vaginal delivery or anorectal surgery)
 - MRI Pelvis (CPT® 72197) or MRI Defecography (CPT® 72195) is medically necessary if:
 - Ano-rectal manometry suggests weak sphincter pressures AND/OR there is an abnormal balloon expulsion test AND
 - There has been failure of a trial of conservative management since the onset of or change in symptoms AND
 - Surgery is being considered

Background and Supporting Information

With regards to fecal incontinence ACG Guidelines stated that “the internal sphincter is visualized more clearly by endoanal ultrasound, whereas MRI is superior for discriminating between an external anal sphincter tear and a scar and for identifying external sphincter atrophy.

However, guidelines adopted by the American Society of Colon and Rectal Surgeons stated that “Endoanal ultrasound is a useful and sensitive tool in the evaluation of patients with FI (fecal incontinence), especially when there is a history of vaginal delivery or anorectal surgery. Ultrasound can reliably identify internal and external sphincter defects that may be associated with sphincter dysfunction.” In addition, the guidelines note “Other modalities (e.g., MRI) have shown substantial interobserver variability and, at this point, are likely inferior to ultrasound imaging, but they may provide additional information where endoanal ultrasound is unavailable.”

Evidence Discussion (PV-22.4)

- According to the American College of Gastroenterology, the American Society of Colon and Rectal Surgeons and the American College of Obstetrics and Gynecology, complete history and physical exam is essential for the evaluation of patient with fecal incontinence^{1,5,10}.
- For individuals that fail conservative measures, ano-rectal manometry and rectal balloon expulsion testing should be performed. This may help to guide additional treatment and diagnostic testing¹.
- Endoanal ultrasound (EAUS) can be considered in individuals with suspected sphincter injury^{1,5}. Ultrasound is widely available and well tolerated, however it is operator-dependent¹⁶. EAUS shows very good interobserver agreement in the diagnosis of sphincter defects and the measurement of the internal anal sphincter¹⁶.
- MRI has also emerged as an imaging modality for evaluation of fecal incontinence. While EAUS is superior for the evaluation of the internal anal sphincter, MRI shows better distinction between fat and muscle in the evaluation of the external anal sphincter¹⁶. MRI is limited by the fact that it is not as readily available and is unsuitable for patients with limiting conditions such as metal implants and claustrophobia¹⁶. MRI defecography also may play a role in the evaluation of fecal incontinence as it allows for insight into important functional disorders related to defecation¹⁶.

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Patent Urachus (PV-23)

Guideline	Page
Patent Urachus (PV-23.1).....	143
References (PV-23).....	144

Patent Urachus (PV-23.1)

PV.UR.0023.1.A

v2.0.2026

- Drainage from the umbilicus, redness around umbilicus, abdominal pain, or urinary tract infection from persistent fetal connection between the bladder and the umbilicus:
 - Ultrasound (CPT® 76856 or CPT® 76857 and/or CPT® 76700 or CPT® 76705) or voiding cystourethrography (VCUG) (CPT® 74455) is medically necessary for suspected patent urachus
 - CT Pelvis with contrast (CPT® 72193) or MRI Pelvis without contrast (CPT® 72195) or with and without contrast (CPT® 72197) is medically necessary if the ultrasound is equivocal or if additional imaging is needed for surgical planning if there is a suspected urachal carcinoma or other urachal abnormality.

Evidence Discussion (PV-23)

- A patent urachus (connecting bladder to umbilicus) can manifest as redness around or drainage from the umbilicus, abdominal pain, or urinary tract infections¹.
- If suspected, ultrasound is indicated as the initial evaluation as it can be diagnostic without exposing the patient to radiation^{2,3}.
- Advanced imaging of the pelvis is indicated for inconclusive ultrasound or for surgical planning^{1,3}.

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v2.0.2026

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Bladder Mass (PV-24)

Guideline	Page
Bladder Mass (PV-24.1).....	146
References (PV-24).....	147

Bladder Mass (PV-24.1)

PV.BL.0024.1.A

v2.0.2026

- Bladder masses incidentally found on other imaging (ultrasound, cystoscopy or KUB):
 - CT Pelvis without contrast (CPT® 72192) for suspected bladder stone is medically necessary if initial imaging is equivocal or if surgery is planned
 - CT Pelvis without (CPT® 72192) is medically necessary for suspected bladder diverticuli
- See **Oncology Imaging Guidelines** for biopsy confirmed or suspected malignancy

Background and Supporting Information

Symptoms of bladder mass may include hematuria, urgency, frequency, chronic urinary infection, obstruction or urinary retention.

Evidence Discussion (PV-24.1)

- Symptoms of bladder mass may include hematuria, urgency or frequency of urination, urinary infection or urinary retention^{1,4,5}.
- Bladder masses may be found incidentally on initial imaging such as ultrasound, cystoscopy or KUB (Kidney, Ureter and Bladder X-ray).
- Suspected bladder stone may be further evaluated with CT pelvis if initial imaging is inconclusive or for surgical planning⁵. CT has a higher sensitivity than ultrasound for bladder stones⁵.
- Suspected bladder diverticuli can be further evaluated with CT pelvis^{1,4}.

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v2.0.2026

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Ureteral and/or Bladder Trauma or Injury (PV-25)

Guideline	Page
Ureteral and/or Bladder Trauma or Injury (PV-25.1).....	149
References (PV-25).....	151

Ureteral and/or Bladder Trauma or Injury (PV-25.1)

PV.BT.0025.1.A

v2.0.2026

- Abdominal and/or Pelvic ultrasound (CPT® 76700 and/or CPT® 76856) is medically necessary if requested
- CT cystography (CT Pelvis without contrast CPT® 72192) is medically necessary for suspected bladder injury
- CT Abdomen and Pelvis with OR with and without contrast (CPT® 74177 or CPT® 74178) is medically necessary if:
 - Suspected iatrogenic/operative injury OR
 - Blunt trauma and suspected bladder or ureteral injury with one or more of the following (See **Blunt Abdominal Trauma (AB-10.1)** in the Abdomen Imaging Guidelines):
 - Abdominal pain or tenderness
 - Pelvic or femur fracture
 - Hematocrit <30%
 - Hematuria
 - Non-examinable individual (intoxicated, less than fully conscious, Glasgow Coma Scale Score >13, etc.)
 - Evidence of abdominal wall trauma or seat-belt sign
 - Rapid deceleration injury

Background and Supporting Information

Bladder trauma: CT cystography- CT Pelvis without contrast allowing the radiologist or Urologist to instill contrast to r/o bladder injury and/or perforation.

Ureteral injury: *“Iatrogenic ureteral injuries can occur during gynecologic, obstetric, urologic, colorectal, general, or vascular surgery; gynecologic surgery accounts for more than half of all iatrogenic injuries.”²*

Evidence Discussion (PV-25)

- Ultrasound can be performed for suspected ureteral and/or bladder trauma. It may aid in triage of injuries and may lead to immediate surgical intervention rather than additional imaging. However it has lower sensitivity compared to CT, particularly in genitourinary injury⁴.
- For individuals with suspected bladder injury retrograde cystography is appropriate². CT cystography has a reported 95-100% sensitivity and specificity for the diagnosis of

bladder rupture^{3,4}. It has the benefits of being widely available and accurate, but does have exposure to ionizing radiation.

- Those presenting with suspected ureteral injury CT of the abdomen and pelvis is appropriate for evaluation of the complete urinary tract. Imaging with contrast is preferred for evaluation of as it has higher sensitivity for detecting concurrent visceral organ and vascular injuries³. Urogram is helpful in further evaluation of the ureters² as it may show contrast extravasation from the ureter or partial or complete ureteral obstruction¹.

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v2.0.2026

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Gender Affirmation Surgery; Pelvic (PV-26)

Guideline	Page
Gender Affirmation Surgery; Pelvic (PV-26.1).....	153
References (PV-26).....	155

Gender Affirmation Surgery; Pelvic (PV-26.1)

PV.GA.0026.1A

v2.0.2026

- Preoperative imaging is medically necessary as outlined below if the individual has a health plan benefit covering pelvic gender affirmation surgery. Preoperative imaging is not medically necessary if pelvic gender affirmation surgery is not a health plan covered benefit.
- Preoperative imaging:
 - Metoidioplasty
 - Preoperative imaging is not medically necessary
 - Phalloplasty
 - Muscular flaps used for neophallus creation are generally obtained from anterior lateral thigh (pedicled flap) or forearm (radial free flap)
 - For planned radial free flap, upper extremity CT angiography (CPT® 73206) of anticipated donor site (unilateral) for evaluation of perforator anatomy.
 - For planned anterior lateral thigh flap, bilateral lower extremity CT angiogram (CPT® 73706)
 - If iodinated contrast allergy, MRA (contrast as requested)
 - Vaginoplasty
 - Preoperative imaging is not supported
- Postoperative complications:
 - Doppler ultrasound is medically necessary when:
 - Monitoring of flap perfusion after phalloplasty for suspected vascular insufficiency
 - CT Abdomen and Pelvis OR CT Pelvis (contrast as requested - CPT® 74176, CPT® 74177, CPT® 74178, CPT® 72192, CPT® 72193, or CPT® 72194) is medically necessary for suspected postoperative complications
 - Complications after surgery may include hematoma, seroma, abscesses, fistula, urinary tract injury, etc. (See **Ureteral and/or Bladder Trauma or Injury (PV-25.1)** for ureteral and/or bladder injury)
 - MRI Pelvis with and without contrast (CPT® 72197) is medically necessary for:
 - Suspected fistula
 - Non diagnostic CT scan AND further imaging is needed for treatment planning

Background and Supporting Information

- Metoidioplasty-Metoidioplasty is a procedure using clitoral hypertrophy and clitoral release to form masculine-appearing external genitalia
- Phalloplasty-Phalloplasty includes the creation of a neophallus using muscular flaps
- Vaginoplasty-Vaginoplasty refers to the surgical creation of a vulva and vaginal canal

Evidence Discussion (PV-26)

- Routine preoperative imaging is not supported for metoidioplasty or Vaginoplasty^{2,4,5}.
- CT angiography is indicated for preoperative evaluation for phalloplasty in order to map size, location and course of the vasculature^{4,7}. CTA has been found to have high accuracy in perforator detection (sensitivity of 96-100% and specificity of 95-100% in studies investigating abdominal perforators), short time for image acquisition and high reproducibility. It however does carry the risk of ionizing radiation and exposure to iodinated contrast⁸.
- Doppler ultrasound allows for monitoring of vascular perfusion of the neophallus after phalloplasty^{4,5}. Ultrasound is readily available and does not carry risk of ionizing radiation.
- Expert opinion has stated that CT would be indicated for postoperative complications of gender affirmation surgery^{2,4,5,7}. CT allows for fast and accurate identification of common postoperative complications such as abscess, hematoma and seroma. CT angiography aids in the diagnosis of arterial or venous thrombosis as well as identification of arterial bleeding in the setting of hemorrhage. CT does carry the risk of ionizing radiation and iodinated contrast allergy.
- MRI is the preferred modality for suspected fistula given its superior soft tissue delineation in these cases².

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v2.0.2026

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