COMPLETE PELVIC ULTRASOUND PROTOCOL (UPELTV)

UPELTV IS A COMPLETE PELVIC EXAM, INCLUDING TRANSABDOMINAL AND TRANSVAGINAL FOR PATIENTS WITH UTERUS AND BOTH OVARIES PRESENT. ***See below for other codes as needed.***

PATIENT PREP: No prep unless patient cannot tolerate transvaginal exam, then patient will need to come with a full bladder.

******Verbal consent to be obtained from the patient for transvaginal imaging. Documentation of consent to be included in report. If a male sonographer is doing the scan, there will need to be a female chaperone present for the transvaginal (or translabial) portion of the exam.***

ADDITIONAL CODES TO BE USED AS NEEDED:

- **UOB1 & UOBTV** – To be used in any case with positive HCG regardless of structures seen.
- **UPELL & UTVAG** – Use both of these charges for patients in cases of hysterectomy or unilateral or bilateral oophorectomy instead of UPELTV when a transabdominal and transvaginal exam was performed.
- **UPELC** – Transabdominal imaging only when uterus and both ovaries are present.
- **UPELL** – Transabdominal imaging only in cases of hysterectomy or unilateral or bilateral oophorectomy.
- **UTVAG** – Transvaginal only
  - Follicular studies
  - Transvaginal only exam can be done when a follow up is requested specifically for following up ovarian cysts if done less than 2 months from initial exam.

- When spectral dopplers are performed, one of the following should be added to the exam-
  - **UORGDC** if arterial and venous flow is seen.
  - **UORGDL** if only arterial OR venous flow is seen.
- When 3D imaging is performed, it needs to be mentioned in the Method section of the VP report, and one of the following should be added in the EPIC Charge Capture section of the End Exam Navigator-
  - If rendering done on the machine – 3D w/o Independent Misc
  - If rendering done in Viewpoint – 3D w Independent Misc

TRANSABDOMINAL IMAGES TO OBTAIN

UTERUS/MYOMETRIUM:

- Sagittal image showing size, shape, and orientation of uterus.
- Sagittal cine sweep of uterus evaluating for contour changes, echogenicity, fibroids, and masses. *Depth and field of view should be set to visualize area superior to fundus and posterior cul de sac for pedunculated or other extra uterine anomalies.*
- Transverse/Coronal image size, shape, and orientation of uterus.
- Additional cine sweeps if abnormality seen that will not be seen well on transvaginal imaging.

TRANSABDOMINAL IMAGES TO OBTAIN *continued…*

ADNEXA:

- Transverse cine sweep of right and left adnexa.

*****See ectopic protocol for extra images if suspected.***

OVARIES:

- Sagittal image of right and left ovary
- Transverse image of right and left ovary
- Additional cine sweeps if abnormality seen.
- Document any abnormality and measure in three dimensions.

TRANSVAGINAL IMAGES TO OBTAIN

STERILE OR BACTERIOSTATIC GEL PACKS AND SINGLE USE COVERS TO BE USED FOR ALL TRANSVAGINAL IMAGING

******Verbal consent to be obtained from the patient for transvaginal imaging. Documentation of consent to be included in report. If a male sonographer is doing the scan, there will need to be a female chaperone present for the transvaginal (or translabial) portion of the exam.***

PREP: Bladder should be completely empty. If the bladder refills during exam, have patient void again.

CERVIX:

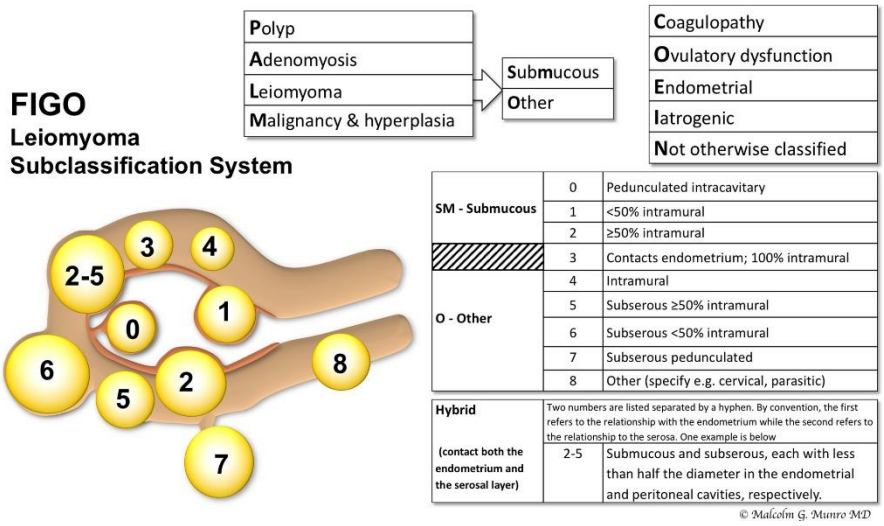
- Sagittal image of cervix.
- Transverse/Coronal image of cervix.
- Orientation and evaluation of cervical masses.

UTERUS/MYOMETRIUM:

- Image showing size, shape, and orientation of uterus.
- Sagittal images of uterus at middle, right and left sides evaluating for contour changes, echogenicity, fibroids, and masses.
- Sagittal image with measurements in long and AP dimensions.
  Cervix should not be included in the longitudinal measurement. A uterine volume is calculated for uterine body/corpus only and therefore does not include the length of cervix.
- Cine clip of uterus in sagittal from right to left
- Transverse/Coronal images at superior, middle and LUS evaluating for contour changes, echogenicity, fibroids, and masses.
- Transverse/Coronal images with width measurement at widest portion.
- Cine clip of uterus in transverse/coronal from superior to inferior
- Normal uterine corpus volume for premenopausal patients is less than 80cm3.
- Document any abnormality and measure in three dimensions.
- Measure fibroids as outlined below.

FIBROIDS:

- Measure 2 largest fibroids and report location.
- Measure additional fibroids if they are submucosal or pedunculated.
- If the indication for exam is bleeding, also measure any submucosal fibroids regardless of size.
- Radiologist will determine FIGO classification



ENDOMETRIUM:

- Measure endometrial thickness in a sagittal plane.
- Evaluate echogenicity and position within the uterus.
- Color image of the endometrium in a sagittal plane.
- Document any abnormality and measure in three dimensions.
- If endometrial polyps are suspected-
  - Cine sweep in transverse/coronal showing the endometrial cavity.
  - Use color imaging to assess the presence of a vascular stalk.

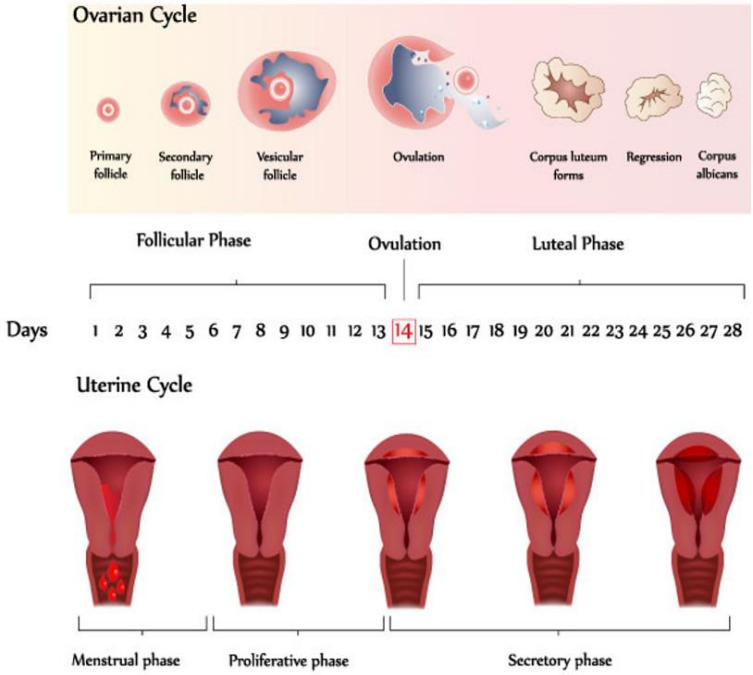
ENDOMETRIAL THICKNESS NORMAL VALUES:

Premenopausal – *significant variation based on stage of the menstrual cycle:*

- During menstruation: 2-4 mm
- Early proliferative (day 6-14): 7mm
- Late proliferative/preovulatory: 11mm
- Secretory phase: 16 mm
- Post D&C or SAB: 5 mm
- Atrophic <4mm unless during menstruation

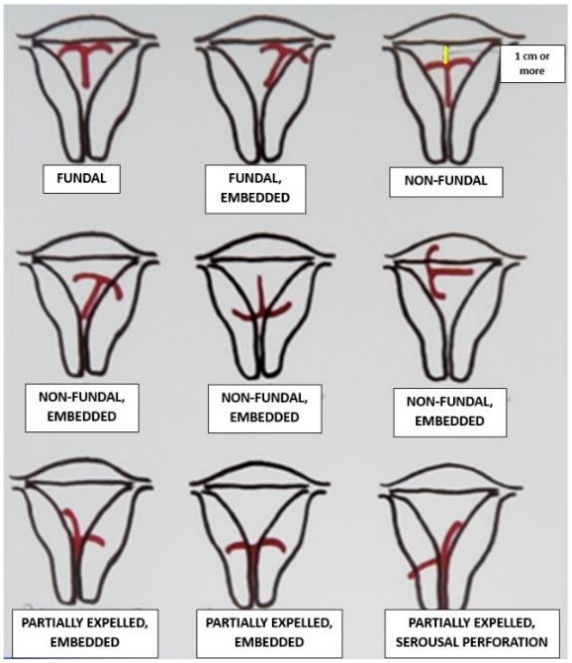
Postmenopausal

- With vaginal bleeding and not on hormonal replacement therapy 4-5mm
- With vaginal bleeding and taking hormonal replacement therapy or tamoxifen: 8 mm
- Without vaginal bleeding regardless of hormone therapy: 11mm
- Atrophic: less than 4mm



3D IMAGES OF THE UTERUS **Required in the following circumstances:**

- If a uterine malformation is suspected on transabdominal imaging or is included in indication for exam. (ie arcuate or bicornuate uterus suspected)
- In cases of infertility with suspected uterine malformation.
- **IUD present** - for all cases involving pain or if the indication is anything that involves the uterus, including bleeding or fibroids. If the indication is strictly involving the ovaries, a 3D it is not needed (ie F/U ovarian cyst.)
- **Cornual ectopic suspected** – 3D in a coronal plane



3D IMAGES TO OBTAIN:

- Perform a 3D cine sweep in sagittal and coronal.
- Save 3D volume/data, as well as 3D Sweep. This allows the 3D volume to be rendered on the machine; the 3D Sweep can be rendered on Viewpoint.
- Render image on ultrasound machine or in Viewpoint to obtain an image showing location of IUD.
- 3D imaging needs to be mentioned in the Method section of the VP report.
- Add required charge in EPIC:
  - If rendered on machine – 3D w/o Independent Misc
  - If rendered in Viewpoint – 3D w Independent Misc

ADNEXA:

- Evaluate region of fallopian tubes to evaluate for dilatation and masses.
- Transverse/coronal image of right and left adnexa.
- Cine clip of entire adnexa in transverse/coronal plane.
- Cine clip of entire adnexa in sagittal plane.

*****See ectopic pregnancy evaluation section below for extra cines if suspected.***

OVARIES:

- At least 2 sagittal images of right and left ovary without measurements
- Sagittal measurement of the right and left ovary in long and AP.
- At least 2 transverse images of right and left ovary without measurements
- Transverse width measurement of the right and left ovary.
- Color image of ovary to assess for internal vascularity
- Cine clips of ovary in sagittal and transverse/coronal if abnormality seen.
- Displacement cine clips -When it is unclear if a mass or cyst is paraovarian or ovarian in nature, apply pressure with the transvaginal probe to displace the structures. Watch for whether the ovary and area of concern move together or separate from each other.
- Document any abnormality and measure in three dimensions.

SPECTRAL DOPPLER IMAGING: To be used on the ovaries in cases of acute pain less than <6 days, not for cases of chronic pain greater than a week. Spectral doppler does not need to be performed on large cysts unless the patient is having acute pain <6 days. Look for presence of arterial and venous flow.

- Billing code to be added:
  - **UORGDC** if arterial and venous flow is seen.
  - **UORGDL** if only arterial OR venous flow is seen

OVARIES continued:

MEASURING OVARIAN CYSTS:

- If premenopausal:
  - Less than 3cm simple cyst - Do not measure. Describe in report as "Normal follicles seen."
  - 3-5 cm simple cyst – Measure and describe in report. No follow-up needed.
  - 5 cm or larger simple cyst – Measure and describe in report. Follow-up may be recommended.
- If postmenopausal or perimenopausal, measure and report any cyst over 1 cm.
- For complex cysts with suspicious characteristics such as thick septations or solid components, measure cyst regardless of size and evaluate for internal vascularity with color doppler, power doppler, or MFI if available, within nodule or septation. Use ORADS descriptions listed below to describe.

ORADS: Adnexal and ovarian lesions should be described with the following descriptions. The radiologist will determine the ORADS score from the description provided. Also see ORADS charts below.

- **Unilocular, bilocular, or multilocular**
- **Solid vs cystic** (solid lesion = >80% solid)
- **Septations**
- **Solid components**
  - Solid component = protrudes >3mm into cyst lumen from wall or septation.
  - A papillary projection is a type of solid component that is surrounded by fluid on three sides. The number of papillary projections is important for risk stratification, >4 pp is higher risk.
- **Calcifications**
- **Shadowing** - must be diffuse or broad shadowing.
- **Smooth or irregular wall** - evaluate the inner wall if cystic, outer wall if solid.
- **Color flow** – only comment whether present or not present. Radiologist will choose the color score:
  - CS 1 – No Flow
  - CS 2 – Minimal Flow
  - CS 3 – Moderate Flow
  - CS 4 – Very Strong Flow

ORADS v 2022

Press CTRL and click on image to open charts.

Assessment Categories

Lexicon Categories, Terms, and Definitions

POSTERIOR CUL DE SAC:

- Evaluate for presence of free fluid or mass.
- Evaluate echogenicity and presence of debris within fluid.
- **Morrison's Pouch**: Evaluate when a significant amount of free fluid is present in the cul de sac or when ectopic pregnancy is suspected.

TRANSLABIAL: Perform if indicated, to document cervical length, or if the patient cannot tolerate transvaginal exam.

*****Transvaginal probe disinfection: See disinfection instructions using the Trophon Machine in the utility room.***

ADDITIONAL IMAGES FOR SPECIFIC INDICATIONS

ECTOPIC PREGNANCY EVAULATION - If no definite intrauterine pregnancy is identified, or if ectopic pregnancy is questioned, evaluation following the ectopic protocol is required. Billing codes to be used: UOB1 & UOBTV

- Take at least 2 cine clips in sagittal and 2 in transverse of right and left adnexa.
- Cine clip using color flow sweeping slowly through right and left adnexa looking for hypervascular areas or ring of fire that is classically seen with ectopic pregnancies.
- Perform 3D of the uterus if cornual ectopic pregnancy is suspected and save 3D data and 3D sweep.
- Measure any mass or abnormality seen.
- Displacement cine clips - When it is unclear if a mass or cyst is paraovarian or ovarian in nature, apply pressure with the transvaginal probe to displace the structures. Watch for whether the ovary and area of concern move together or separate.
- Document free fluid and note if debris seen within.
- When indication is for acute pain <6 days include spectral dopplers of the ovary to also rule out torsion. If indication is only for bleeding without pain, dopplers are not needed.

  SPECTRAL DOPPLER IMAGING: To be used on the ovaries in cases of acute pain less than <6 days, not for cases of chronic pain greater than a week.

ENDOMETRIOSIS EVAL OR CHROINC PAIN: These should be performed on patients with chronic pain of any kind lasting more than a few weeks, whether it be constant or cyclical. This would include dysmenorrhea and pain with intercourse or with defecation. Also, to be done on patients if endometriosis is known or suspected, including if referred for infertility. It does not need to be used for a one-time episode of acute pain.

- **Sliding sign:** To perform the sliding sign, position the probe in the posterior fornix and then push against the rectum to see if the rectum moves freely of the posterior cervix/uterus. Do not push straight into the cervix, you must be ***posterior*** to the cervix to produce the movement needed.
  - If rectum freely moves across cervix/uterus, this is normal and is a "positive sliding sign." If it does not slide freely, it is abnormal and is a "negative sliding sign." A negative sliding sign suggests adhesions and deep infiltrating endometriosis. Include whether there is a positive or negative sliding sign in the report.
  - If the patient cannot tolerate the pressure required for the vaginal sliding sign, you can also try to manually press on the fundus of the uterus from the top of the abdomen with your non-scanning hand.
- **Transverse cine sweep through the entire cervix to show uterosacral ligaments.** This can be included in your transverse uterus sweep, or a separate sweep if needed. Either way, you need to scan ***completely*** through the cervix. Be aware that this can often be tender for the patient, especially if adhesions are present.
- **Evaluate for hypoechoic masses with tapering ends** which may be seen in deep infiltrating endometriosis.

FOLLICLE STUDIES: **Full transvaginal Pelvic US Protocol, transabdominal images are only needed if structures are not well seen on transvaginal imaging.**

- Count and measure each follicle over 10mm on each ovary
- Count all follicles under 10 mm on each ovary and document in report.
- Billing Code to be used for transvaginal imaging only: **UTVAG**

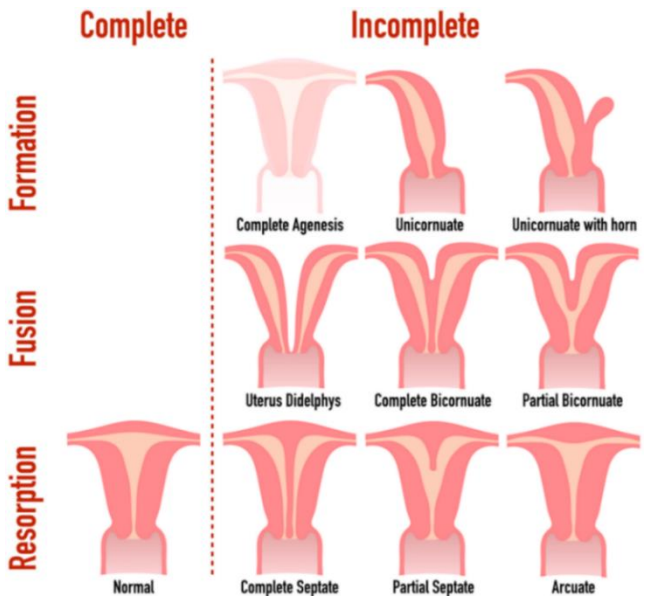
PELVIC CONGESTION: **Only to be performed when requested. Document the following with transvaginal imaging:**

- Document arcuate vein seen running transversely along fundus.
- Enlarged adnexal veins (subjective assessment)
- Color Flow with Valsalva:
  - Cine clip documenting right and left adnexal veins while the patient performs the Valsalva maneuver. This helps to determine if there is reversal of flow in adnexal veins.
- Spectral Doppler with Valsalva maneuver looking for reversal of flow:
  - Document the right and left adnexal veins and
  - Document left and right iliac veins with spectral doppler while patient performs Valsalva maneuver looking for reversal of flow.
- Billing code to be added for limited venous spectral doppler evaluation: **UORGDL**

POLYCYSTIC OVARIES: According to the Rotterdam Criteria, PCOS ultrasound criteria is:

- Either 20 or more follicles measuring 2-9mm in diameter or increased ovarian volume >10cm3. Only one ovary needs to fit this description. Volume does not apply to women taking oral contraceptive pill, as ovarian size is reduced, even though polycystic appearance may persist.
- If there is evidence of a dominant follicle(>10mm) or a corpus luteum on either ovary, the scan should be repeated during the next cycle.
- Menstruating women should be scanned in the early follicular stage (Day 3-5). Oligo/amenorrhoeic women should be scanned either at random or between days 3-5 after a progestogen-induced bleed.

UTERINE MALFORMATIONS



COMPLETE PELVIC ULTRASOUND PROTOCOL IMAGE LIST

IMAGE	MODE
TRANSABDOMINAL	**TRANSABD**
UT Sag Mid	2D
UT Sag R-L Cine	Cine
UT Trans Mid	2D
Rt Adnexa Trans S-I Cine	Cine
Rt Ov Sag	2D
Rt Ov Trans	2D
Lt Adnexa Trans S-I Cine	Cine
Lt Ov Sag	2D
Lt Ov Trans	2D
TRANSVAGINAL	**TRANSVAG**
CVX Sag	2D
CVX Cor	2D
CVX Cor Cine showing USLs (for chronic pain and r/o endometriosis or for infertility)	*Cine*
UT Sag Mid	2D
UT Sag Mid w/ length and height measurements, do not include cvx	2D ++
UT Sag Right	2D
UT Sag Left	2D
UT Sag R-L Cine	Cine
UT Cor Superior (Fundus)	2D
UT Cor Mid	2D
UT Cor Mid w/ width measurement	2D +
UT Cor Inferior (LUS)	2D
UT Cor S-I Cine (fundus to cervix)	Cine
For IUD, uterine malformation or cornual ectopic only	*3D*
Fibroids (measure largest 2 and any submucosal or pedunculated)	*2D +*
ENDO Sag	2D
ENDO w/ measurement at thickest	2D +
ENDO w/ color	Color

IMAGE	MODE
TRANSVAGINAL continued…	**TRANSVAG**
Rt Adnexa Cor	2D
Rt Adnexa Cor S-I Cine	Cine
Rt Adnexa Sag M-L Cine	Cine
Rule out ectopic: Cine x 2 in gray scale & S-I Cine x 2 w color	*Cine/Color x2*
Rt Ov Sag x2	2D x2
Rt Ov Sag w/ length and height measurements	2D ++
Rt Ov Cor x2	2D x2
Rt Ov Cor w/ width measurement	2D +
Rt Ov	Color
Rt Ov for acute pain <6days	Spectral
Ovarian Cysts over 3cm if premenopausal, 1cm if postmenopausal	*2D+/Color*
Lt Adnexa Cor	2D
Lt Adnexa Cor S-I Cine	Cine
Lt Adnexa Sag M-L Cine	Cine
Rule out ectopic: Cine x 2 in gray scale & S-I Cine x 2 w color	*Cine/Color x2*
Lt Ov Sag x2	2D x2
Lt Ov Sag w/ length and height measurements	2D ++
Lt Ov Cor x2	2D x2
Lt Ov Cor w/ width measurement	2D +
Lt Ov	Color
Rt Ov for acute pain <6days	Spectral
Ovarian Cysts over 3cm if premenopausal, 1cm if postmenopausal	*2D+/Color*
PCDS Sag	2D
Sliding Sign Cine showing mobility of PCDS and bowel (for chronic pain and r/o endometriosis or for infertility)	*Cine*

PELVIC ULTRASOUND PROTOCOL HISTORY

	Date	Changes made	By whom
Updated	02/08/21	Sliding sign requirements added Changed patient prep to No prep needed	Becky Marion
Updated	03/14/22	Billing code section Cervix not to be included in long measure. Normal uterine volume 15-53cc (per Dr Dighe) 3D IUD requirements	Renee Betit Fitzgerald
Updated	06/08/22	PCOS criteria updated from 12 to 25 follicles per new Rotterdam guidelines	Renee B Fitz
Review	08/25/22	Added at least two 2D images in each plane for the ovaries. Removed 3D for cervical and c-section ectopic, still needed for cornual. Removed Renal US for uterine Malformation. Removed attending in room for complex TV cases. Added Billing code for all +HCG to be UOB1 and UOBTV Added FIGO and Uterine malformation charts	Protocol Meeting attendees Manjiri Dighe, Shaun B, Becky M, Renee F, Ryan B
Change	10/6/2022	Changed ovarian cyst section for premenopausal from ~~Measure simple cysts over 1cm in size, only include measurements in report if over 5 cm~~ to – -Less than 3cm simple cyst - Do not measure. Describe in report as "Normal follicles seen." -3-5 cm simple cyst – Measure and describe in report. No follow-up needed. -5 cm or larger simple cyst – Measure and describe in report. Follow-up may be recommended.	Protocol Meeting 10/6 Attendees: Manjiri Dighe Shaun Bornemeier Dalene Edden Katie Toth Becky Marion Renee Betit Fitz
Added	10/26/2022	-Cine clip in trv and sag of ovaries -Cine clip of adnexa if ovary not seen	Renee B Fitz
Added	1/8/2022	Endometrial Normal values added	Renee B Fitz
Reviewed	3/23/2023	-Transabdominal images reduced -Will remove volume from Viewpoint report and will measure long UT including the cervix again - Added displacement clips for paraovarian mass/cyst -Added sag/trv adnexal sweeps in TA and TV -TV ovarian sweeps only needed if abnormality seen	Protocol Meeting 3/23 Manjiri Dighe Ken Linnau Shaun Bornemeier Dalene Edden Katie Toth Becky Marion Renee Betit Fitz
Added	5/23/2023	If no definite intrauterine pregnancy is visualized, *or ectopic pregnancy is questioned*, evaluation following the ectopic protocol is necessary	Renee Betit Fitzgerald
Change	9/6/2023	Statement changed to - Cervix should not be included in the longitudinal measurement. A uterine volume is calculated for uterine body/corpus only and therefore does not include the length of cervix.	Renee Betit Fitz per Radiologist team decision.

Added	10/31/2023	Added -new IUD location descriptions and image Added – Transverse sweep through CVX for endometriosis or chronic pain evals to look at uterosacral ligaments Changed - PCOS criteria to 20 ~~from 25~~ to match Rotterdam	Manjiri Dighe Renee Betit Fitzgerald
Reviewed	12/14/2023	Added: ORADS information and charts Added: Normal uterine corpus volume for premenopausal patients is less than 80cm3. Removed: Look for ureter for RLQ/LLQ pain Added: Sterile gel and single use cover to be used for all TV exams Changed: measure 2 largest fibroids, from 3 largest, per 6/2023 protocol meeting decision	Protocol Meeting Attendees: Manjiri Dighe Shaun Bornemeier Dalene Edden Katie Toth Becky Marion Renee Betit Fitz
Added	1/19/2024	Added Protocol Image List	Renee Betit Fitzgerald
Added	2/6/2024	Sliding sign & Trans CVX USL sweep requirements expanded to include infertility, dysmenorrhea, pain with intercourse or defecation, and other causes or non-acute pain.	Manjiri Dighe Renee Betit Fitzgerald
Changed	5/6/2024	Changed FIGO chart	Renee Betit Fitzgerald
Added	12/23/2024	Verbal consent to be obtained from the patient for transvaginal imaging. Documentation of consent to be included in report.	Manjiri Dighe Renee Betit Fitzgerald
Removed	3/27/2025	Transabdominal images reduced: -Removed measurements of uterus and ovaries unless abnormality seen -Reduced adnexa images to single transverse adnexal sweep	Protocol Meeting Attendees: M. Dighe, R Betit Fitzgerald, S. Bornemeier, B. Marion, D. Edden, S Dashti, V Pambid, J Stringham R Gianan