MESSAGE FROM THE CHAIR

Dear Colleagues,

It’s an honor to serve as Interim Chair of the Ob/Gyn & Women’s Health Institute and a privilege to present our 2018 Year in Review, highlighting some of the significant progress our group is making toward improving women’s health. For example:

We are making extraordinary advances in fertility and reproduction, which are dramatically changing hopes and expectations around family planning for cancer and other disease survivors.

Our Urogynecology and Pelvic Floor Disorders Section has developed a Postpartum Care Clinic to help women heal and avoid complications from obstetric anal sphincter injuries (OASIS).

We have developed a comprehensive Female Sexual Dysfunction Program to address the physical and psychological struggles of cancer patients.

We are conducting significant research around Lynch syndrome, which is a highly penetrant, autosomal dominant inherited cancer condition responsible for most hereditary endometrial and colorectal cancers.

Our Women's Weight Management Program is finding innovative ways to help patients confront obesity and obesity-related conditions like heart disease, stroke, type 2 diabetes and cancer.

The Global Health Research team is bringing affordable, high-reach screening to areas around the globe where healthcare access is limited.

Through our Department of Infectious Disease, we are counseling, testing and diagnosing patients for Zika, which is still a very real threat.

We created an executive position to ensure we are allocating appropriate resources toward an inclusive culture and a diverse team of caregivers.

... And so much more! I applaud our team’s incredible work in patient care, research and education and invite you to read more about it in these pages.

In closing, I wish Dr. Tommaso Falcone, our inspired leader of 17 years, much success with the opening of Cleveland Clinic London. We are grateful to him for his vision, brilliant research and service.

Thank you. As always, we invite your comments.

Sincerely,

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5 Frequently Asked Questions About Managing Pregnancy After Cancer Treatment

While most female cancer survivors have a good chance of having a healthy pregnancy, some will experience treatment-related side effects that affect their ability to become pregnant or cause complications during pregnancy. Jeff Chapa, MD, head of Maternal-Fetal Medicine, Ob/Gyn & Women’s Health Institute, discusses top concerns.

**What are the most common pregnancy-related complications associated with cancer treatment and its side effects?**

Some chemotherapy agents are associated with damage to vital organs, including kidneys, heart and lungs. Some organs damaged by chemotherapy may be unable to support the significant physiological demands of pregnancy. For example, pregnancy requires the mother’s heart to work about 50 percent harder to support both the mother and developing fetus. Chemotherapy can also affect the thyroid, which produces the appropriate levels of thyroid hormone needed for the fetus’s neurological development.

Pelvic radiation can damage the uterus. If the blood supply to the uterus isn’t robust, it may limit the placenta’s ability to implant, increasing the risk of miscarriage, growth restriction, preeclampsia and preterm delivery. Women who undergo surgery for cervical cancer must have all or part of their cervix removed. This treatment can increase the risk of miscarriage or premature delivery. Other considerations are hormonal treatments and cancer recurrence.

**What steps can physicians and patients take to proactively manage pregnancy following cancer treatment?**

Physicians should obtain a complete medical history and carefully evaluate and monitor the patient’s heart, lung and kidney function. We also need to evaluate and adjust medications as needed prior to conception. Patients with chronic disease should optimize their health prior to getting pregnant, and physicians can provide valuable advice and encouragement in this area.

**What is the benefit of multidisciplinary care?**

A multidisciplinary team, generally comprising an oncologist, primary care doctor and subspecialty physician or physicians, is more likely than a single doctor to identify and address potential risks during the initial medical evaluation. If complications arise during pregnancy, the established relationships facilitate faster responses and better outcomes.

**When is a maternal-fetal medicine specialist needed?**

A maternal-fetal medicine specialist should be consulted when a cancer survivor has a high risk of recurrence or when there’s potential organ damage from previous cancer treatment. This specialist provides monitoring, evaluation and counseling to high-risk patients before, during and after pregnancy.

**What are your recommendations for future pregnancy management for cancer survivors?**

Many medical centers, including Cleveland Clinic, offer fertility programs to help cancer patients preserve fertility following cancer treatment. These programs may involve freezing eggs or ovarian tissue (including vitrification of ovarian tissue) as well as various in vitro or other fertilization techniques. At Cleveland Clinic, maternal-fetal medicine specialists and fertility specialists work together closely. The focus is not only on the patient’s ability to become pregnant, but also on assessing her ability to support a healthy pregnancy without a high risk of complications. Discussions are then held with the patient regarding her reproductive options. Preconception counseling, coupled with collaborative care, is the key to optimizing pregnancy outcomes for cancer survivors.
A common concern with a new cancer diagnosis is whether future childbearing will be difficult or even impossible after treatment. Treatments that cure malignancy can also damage the ovaries in a way that results in menstrual dysfunction, infertility or premature menopause. One of the most at-risk populations is prepubertal girls with cancer, who are not eligible to pursue gold standard fertility-preserving strategies like egg and embryo freezing, says Rebecca Flyckt, MD, Director of the Fertility Preservation and Cancer Program.

For this population and for women who cannot or prefer not to undergo egg or embryo freezing, Cleveland Clinic offers ovarian tissue freezing. The American Society of Reproductive Medicine still considers ovarian tissue freezing to be experimental in humans, and this procedure can only be performed under an Institutional Review Board-approved protocol with detailed informed consent. To date, Cleveland Clinic has performed this technique for dozens of women and girls, and close to 100 live births have been reported worldwide.

Ovarian tissue freezing involves harvesting ovarian cortical tissue using outpatient laparoscopic techniques. This method allows rapid recovery and no delay in chemotherapy or radiation. Once the patient has recovered from cancer treatment and is ready to pursue fertility, the tissue can be retransplanted using fine sutures to secure the strips of ovary in position within the abdomen. Transplantation may not occur until decades after the original freezing procedure. Pregnancies can then be conceived either spontaneously or with the help of fertility treatments.
How Researchers Are Tapping into Regional Healthcare Needs — and Accessing Key Population Health Issues

Cleveland Clinic’s Ob/Gyn & Women’s Health Institute (WHI) is committed to advancing women’s health through high-impact and rigorous clinical research. Its patients are diverse, and they are served at both the main campus and regional facilities. It is, therefore, critical that research efforts take place in all of the WHI’s geographic locations, to ensure the WHI can best advance understanding of the leading issues in women’s health and develop new diagnostics and therapeutics to address them.

Historically, however, it has been difficult to extend research efforts out from main campus to the region. This has presented barriers for both researchers enrolling participants in studies and for patients wishing to learn about studies taking place.

Successfully bridging the gap

About two years ago, the institute developed a solution that has successfully bridged the gap — the Women’s Health Institute Regional Research Advocate Program (RRAP). The RRAP utilizes point persons across Cleveland Clinic’s regional family health centers and hospitals in Northeast Ohio. These point persons, or advocates, are physicians, midwives and nurse practitioners who have an interest in and understand the importance of research. They assist researchers in disseminating information about studies and recruit participants from the regional practices.

RRAP has allowed researchers to tap into the healthcare needs and priorities of the region, accessing key population health issues. “This is a powerful network to support clinical research in the WHI,” says Ruth Farrell, MD, MA, Vice Chair for Research, Ob/Gyn & Women’s Health Institute. “It is important for patients in the region to have access to clinical studies just as they do at main campus. This program helps make that possible, highlighting the importance of our regional communities in answering questions that affect women’s health. Research can help patients the best when it addresses the health issues they are dealing with.”

Solution enabling even more research

Dr. Farrell adds that the institute has been able to increase the number of studies it is conducting because of its access to more people through these liaisons in the community. Initial efforts have focused on expanding studies on prenatal genetic testing, hypertension in pregnancy and gynecologic infections.

“The Regional Research Advocate Program is just one of the ways the WHI is better able to advance Cleveland Clinic’s commitment to patient care, research and education,” she says.
How Sentinel Lymph Node Detection Is Improving Care for Endometrial Cancer Patients

Approximately 80 to 85 percent of patients with endometrial cancer survive long-term. But what about the small percentage of patients who end up dying from metastatic disease? When endometrial cancer is diagnosed, using the most accurate staging and treatment strategies is key to delivering optimal patient outcomes — especially when managing aggressive forms of the disease.

Minimally invasive staging techniques are enabling Ob/Gyn specialists to provide higher quality care to endometrial cancer patients. In this article, Robert DeBernardo, MD, a gynecologic oncologist and Director of the Peritoneal Surface Malignancy Program, discusses how sentinel lymph node detection provides a higher rate of cancer detection while reducing the risk of long-term complications.

How has endometrial cancer treatment changed over the past 10 years?

We used to treat endometrial cancer by performing an abdominal hysterectomy. Now, we’re primarily using robotic or laparoscopic hysterectomy — and achieving similar or better patient outcomes. Minimally invasive techniques are now the standard of care for both treatment and staging.

What controversy has developed over surgical staging?

At the time of surgery, we have the option of removing lymph nodes to check for metastases. For patients with high-risk cancer with a poor prognosis, removing lymph nodes provides valuable information that will impact the treatment plan and our ability to cure endometrial cancer.

Removing lymph nodes involves significant risk. In fact, about 10 to 20 percent of patients will experience some type of complication following lymphadenectomy. The most significant complication is lymphedema, which can lead to long-term mobility issues.

What is the goal of assessing lymph node involvement?

Most patients with endometrial cancer have a low risk of lymph node involvement. So there are two key questions at play: How do we identify candidates for surgical staging? And how many lymph nodes should be removed? Because of the risk of complications, we have to be somewhat selective. For example, if there’s a 1 percent chance that your lymph node could be positive, it’s probably not reasonable to remove 20 or 30 lymph nodes. If you have a 30 to 40 percent chance of involvement, lymphadenectomy is an option well worth considering.

How is sentinel lymph node detection used to stage endometrial cancer?

The sentinel lymph node technique has been used to identify lymph node metastasis in patients with melanoma, breast cancer and vulvar cancer. In patients with endometrial cancer, instead of injecting the tumor directly, we inject the cervix with the tracer dye. This technique still correlates well and reveals the activity of other lymph nodes. It also helps determine whether radiation and chemotherapy should be used following a hysterectomy.

How is the injection dye used?

We use an indocyanine green dye that fluoresces so we can easily identify the lymphatic channels. This makes removing a sentinel lymph node very easy, avoiding complete lymph node dissection.
removing only the pertinent lymph nodes, we achieve a higher rate of metastatic cancer detection with fewer complications.

**Why is it important for Ob/Gyns to consider this staging technique before finalizing a patient’s treatment plan?**

Sentinel lymph node detection can’t be used once a hysterectomy is performed. Patients at moderate or high risk will need a second surgery to remove all the lymph nodes or receive adjuvant radiation and/or chemotherapy to reduce the risk of recurrence. Patients being considered for endometrial cancer surgery should see a specialist with experience in sentinel lymph node detection.

**Are you aware of any research being conducted in support of this type of sentinel lymph node detection?**

Future research will be used to assess the long-term cancer outcomes associated with sentinel lymph node detection in endometrial cancer patients. We expect those outcomes to be favorable.

To further advance cancer detection technology, we’re working on a bioengineering project that uses augmented reality to identify cancers and their resectability. The project is designed to capture computed tomography (CT or CAT) scans and magnetic resonance imaging (MRI) and create 3D images of patients. This will allow physicians to examine tumor location in relation to internal organs for more precise staging and treatment development.

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**Losing Weight Prior to Surgery Reduces Risks, Increases Patient Satisfaction**

To minimize complications associated with obesity, surgeons are referring obese patients for weight loss management prior to surgical procedures.

Almost 40 percent of U.S. adults — 93 million people — are considered obese, with a BMI of 30 or higher, according to the U.S. Centers for Disease Control and Prevention. Obesity-related conditions include heart disease, stroke, type 2 diabetes and certain types of cancer.

Karen Cooper, DO, Director, Women’s Weight Management Program, Ob/Gyn & Women’s Health Institute, says obese patients face higher risks intraoperatively and postoperatively — including cardiac and respiratory issues, wound complications, surgical site infections and venous thromboembolism. Obesity also can hinder surgical technique, administration of medication and patient recovery.

"The risks for morbidity and mortality are well-documented with obesity and surgical procedures," says Dr. Cooper. "Patient safety, shorter recovery times, shorter hospital stays, reduced infection rates — for all of those reasons, perioperative weight loss can be beneficial."

While perioperative weight loss in an overweight or obese individual can lessen operative risk, patients unable to attain weight loss will not be denied a lifesaving procedure. However, some surgical procedures could be delayed until the patient loses a moderate amount of weight, since visceral fat can hinder surgical technique.

For patients referred to her for perioperative weight loss, Dr. Cooper uses a high protein diet for safe and effective weight loss in a short period. Medications may also be prescribed to enhance continued weight loss.
In an effort to better inform and counsel patients, Cleveland Clinic examined differences in complication rates between intraperitoneal and extraperitoneal vaginal colpopexy, using the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database.

“Vaginal surgery for repair of pelvic organ prolapse is one of the most common procedures for uro-gynecology,” explains lead investigator C. Emi Bretschneider, MD, Fellow in Female Pelvic Medicine and Reconstructive Surgery, Ob/Gyn & Women’s Health Institute.* “Our objective was to compare an intraperitoneal versus an extraperitoneal approach to prolapse surgery on a large scale.”

The overall rate of complications following vaginal colpopexy for surgical correction of pelvic organ prolapse is low, the study concluded. While intraperitoneal colpopexy without hysterectomy was the least common type of colpopexy, the odds of experiencing a complication were approximately double those for intraperitoneal colpopexy with a concurrent hysterectomy.

The researchers identified patients who underwent vaginal colpopexy with or without a concurrent hysterectomy between 2014 and 2016 using Current Procedural Terminology codes. They obtained patient demographics, preoperative comorbidities, American Society of Anesthesiologists (ASA) classification system scores and total operating time. NSQIP-tracked 30-day complication codes were used to determine the complication rate and rates of reoperation and readmission. Differences between groups were calculated using Student’s t-test, χ² test, Fisher’s exact test and Kruskal-Wallis test. Investigators performed logistic regression to assess whether outcomes differed by type of surgery while controlling for unbalanced baseline variables.

During the study period, 10,271 colpopexies were performed. Mean age was 43.7 ± 12.8 years; mean BMI was 29.3 ± 5.9. The majority of patients were white (77.8 percent) with an ASA class of 2 (65.9 percent). For women who underwent a hysterectomy (N = 7,497), more underwent intraperitoneal colpopexy (50.8 percent) than extraperitoneal (48.4 percent). For women who did not undergo a concurrent hysterectomy (N = 2,774), extraperitoneal colpopexy (73.6 percent) was nearly three times more common than intraperitoneal (26.4 percent). Factors that differed significantly across types of procedure were age, race, ASA class, the presence of a major medical comorbidity, operating time, preoperative creatinine and length of hospital stay (P < 0.05).

The overall rate of postoperative complications was 2.1 percent (213/10,271, 95% CI 1.8, 2.4); rate of readmission associated with NSQIP-tracked complication codes was 0.6 percent (58/10,271, 95% CI 0.4, 0.7); and rate of reoperation was 1.6 percent (166/10,271, 95% CI 1.4, 1.9). ASA class, preoperative hematocrit, preoperative sodium and length of stay were significantly associated with presence of a complication (P < 0.05). There was no significant difference in complications across the different types of surgery.

After logistic regression, intraperitoneal colpopexy without a concurrent hysterectomy (aOR 1.80, 95% CI 1.03, 3.01), ASA class 3 (aOR 2.55, 95% CI 1.36, 5.19) and ASA class 4 (aOR 8.57, 95% CI 2.46, 26.43) were significantly associated with a higher incidence of complications; increasing preoperative hematocrit (aOR 0.86, 95% CI 0.84, 0.99) was associated with a lower incidence.

*Other authors include David Sheyn, MD, and Sangeeta Mahajan, MD, Case Western Reserve University School of Medicine; and Katie Propst, MD, and Beri M. Ridgeway, MD, Cleveland Clinic.
Female sexual dysfunction is a prevalent but often-undertreated phenomenon, especially among cancer survivors. The problems, which include low sexual desire, difficulty reaching orgasm or pain on intercourse, can be devastating to women and their partners.

Compounding these issues, physicians often feel unprepared to deal with them, reports Pelin Batur, MD, Ob/Gyn & Women’s Health Institute. “Physicians may not have time to address these complex issues or feel they don’t have many options to offer patients. If the woman is shy about discussing the issue, physicians may underestimate the impact of the problem in the patient’s life.”

Treatments include detailed sexual education, mindfulness therapies, counseling, pelvic floor physical therapy, systemic and vaginal hormonal treatments (both estrogen and nonestrogen), and nonhormonal medications. Sometimes, use of the right type of lubricant can make a significant difference in a woman’s life.

To help manage this unmet need, Dr. Batur and the Ob/Gyn & Women’s Health Institute have partnered with Cleveland Clinic Cancer Center to develop the health system’s first comprehensive Female Sexual Dysfunction Program. Services are provided at three Cleveland Clinic locations — Center for Specialized Women’s Health at main campus, Beachwood Family Health and Surgery Center, and Strongsville Family Health and Surgery Center. Dr. Batur directs the program.

While open to all, the program focuses on cancer patients since survivors have more complex sexual complications than the general population, while also having more limited treatment options.

Other conditions that can contribute to sexual dysfunction include kidney, liver and heart disease; diabetes; anxiety/depression/stress; and drug or alcohol abuse. It can also be a side effect of certain medications or a lingering effect after pregnancy and childbirth.

The Female Sexual Dysfunction Program also cares for women who have concerns about issues related to hormonal changes, such as genitourinary syndrome of menopause, which leaves more than half of all postmenopausal women with symptoms such as vulvovaginal dryness or atrophy, burning, irritation, dyspareunia, urinary urgency, dysuria and urinary tract infections. These problems affect cancer patients at higher rates than found in the general population.

The clinic utilizes a comprehensive team-based approach, incorporating breast health experts, pelvic floor physical therapists, medical and gynecological staff, sex therapists and others. A full range of evidence-based treatment options will be available, including: flibanserin, systemic hormone therapy, testosterone, lidocaine, ospemifene, vaginal DHEA, vaginal estrogen and nonpharmacological therapies (such as lubricants, dilators, vibrators, pelvic physical therapy/stimulation therapy).

“For some, medical treatments will be warranted; for others, counseling may be the right path to help them overcome psychological barriers that are preventing them from enjoying sexual intercourse. Those barriers can stem from many sources, such as social or religious beliefs, relationship difficulties, poor body image or a history of sexual abuse.”

The clinic offers virtual visits for patients who cannot easily travel to Cleveland, after an initial face-to-face visit that includes a history and physical examination. Patients need a “Consult to Women’s Health” order in Epic to get scheduled appropriately, with enough time to address their needs.
Study Provides Guidance for Use of Preimplantation Genetic Screening

A retrospective analysis of blastocyst vitrification cycle outcomes presented at the American Society for Reproductive Medicine 2018 revealed how important preimplantation genetic screening (PGS) is to achieving high implantation rates.

“The use of PGS has not been consistent clinic to clinic, with on-site genetics labs tending to be more committed to PGS for all patients,” says Nina Desai, PhD, HCLD, Ob/Gyn & Women’s Health Institute and author of the study. Other considerations for integration of PGS into the routine IVF treatment regimen may include lab staffing, technical skills of embryologists, physician views and patient acceptance of PGS.

“Our objective was to determine whether PGS for all patients offers an advantage, given the significant cost of screening,” Dr. Desai says. “Our study examined cryopreservation outcomes after transfer of PGS-tested versus unscreened blastocysts in an IVF program where less than 30 percent of patients undergo PGS.”

Methodology

The study looked at outcomes from 1,042 vitrified-warmed blastocysts. No exclusion criteria were applied. All blastocysts were derived from culture of normal fertilized oocytes in the EmbryoScope® time-lapse incubation chamber with 6 percent CO₂ / O₂. Blastocysts of good quality with inner cell masses were cryopreserved. For PGS, laser trophectoderm biopsy was performed. Biopsied cells were frozen and sent out for chromosome analysis using the next-generation sequencing technique.

Blastocysts were cryopreserved using a two-step ethylene glycol/DMSO vitrification protocol: 7.5 percent for five minutes, then 15 percent for one minute before loading on the Rapid-i™ carrier and immersion in liquid nitrogen. Patients were prepared for frozen embryo transfer using endometrial priming with estrogen and progesterone. Outcome data were stratified by age at freeze and whether blastocysts underwent PGS.

Conclusion

“From these initial data, it appears that implanted embryos shared similar growth characteristics among the three age groups,” says Dr. Desai. “Our study found culture to blastocyst programs that are not as aggressive in using PGS can still expect to achieve good outcomes, particularly in their younger patient population.”

Significant increase in implantation rates with PGS was seen only in women 39 and older, which supports Cleveland Clinic’s practice not to recommend PGS for patients under age 35.

“When you look at the data for age 39 and above, it’s absolutely clear that if you don’t do PGS, your pregnancy rates are lower,” Dr. Desai advises. “The implantation rate of a single PGS embryo diagnosed as euploid was 58 percent, compared with only 32 percent if an untested embryo was transferred.”
Why Have an Ob/Gyn Residency Program That Focuses on Tracking?

Cleveland Clinic’s Obstetrics & Gynecology (Ob/Gyn) Residency Program is trainee-centered, allowing residents to customize their curriculum to their interests. “Ours is the only Ob/Gyn residency in the country that has a tracking curriculum, so it’s a big attractor for people to come into our program,” says Vicki Reed, MD, Director of the residency program.

In fact, even though it is only 6 years old, the program has already grown the incoming complement from five to seven new residents per year. Participants come from all over the country with the option to specialize in family planning, female pelvic medicine and reconstructive surgery, specialty Ob/Gyn, global health, gynecologic oncology, maternal-fetal medicine, or reproductive endocrinology and infertility.

The residents then may choose to learn more about aspects of those specialties, such as palliative care, pathology, radiation oncology or robotic surgery, in their elective rotations. In addition to other specialty training at affiliated hospitals, the program also offers global health opportunities such as cervical cancer screening in El Salvador, Haiti and China.

A research showcase

Residents research projects throughout their four-year program. Each spring, second- and third-year residents present their findings in judged oral or poster presentations to staff physicians at Research Day under the direction of Ruth Farrell, MD, Women’s Health Institute Vice Chair of Research. “Research Day is a way to share ideas and stimulate new ideas for research,” Reed says.

After a keynote address from a well-known invited guest, the residents present findings that range from “Does Iron Supplementation Adequately Treat Anemia in Pregnancy Following Bariatric Surgery?” to “Why Do Patients Call After Surgery? Reasons and Risk Factors for Seeking Unscheduled Medical Advice in the Postoperative Period.”

From July 2017 to July 2018, the program’s 21 residents published 43 articles and one book chapter, delivered 18 presentations at conferences and were conducting 166 research projects overseen by the Cleveland Clinic Institutional Review Board.

Rigor and opportunity

Residents gain vast experience in both obstetrics and gynecology. Annually, residents assist in thousands of vaginal deliveries, vacuum-assisted vaginal deliveries, forceps-assisted vaginal deliveries and cesarean sections.

Residents also amass a great deal of surgical experience with patients, simulations and cadavers, including a fundamentals of laparoscopic surgery class that the residency has offered from the beginning of training. The residents are extremely well-prepared to enter either practice or a fellowship.

Residents have the option of taking Robotics Training Network curriculum too. “There is a minimum number of surgical cases established by the Accreditation Council for Graduate Medical Education (ACGME), and our residents exceed that number exponentially,” Reed says.

Many residents go on to do a research fellowship. Last year, four of the five members of the Class of 2018 wanted to be fellows, and they were all matched. The program is accredited by the ACGME.

In order to help residents avoid burnout and support wellness, the “L.E.A.D.E.R.” (Leadership, Equanimity, Acceptance, Diversity, Engagement and Resilience) curriculum focuses on topics such as team-building, mentorships, mindfulness and professionalism. The American College of Obstetricians and Gynecologists selected the program for a pilot on wellness this year. Also, each fall, all residents participate in a residents-only retreat. “There’s a big focus on resident well-being and physician well-being,” Reed says.
Patients with obstetric anal sphincter injuries (OASIS) are at risk for wound infections, perineal pain, fistula formation and wound breakdown, as well as long-term pelvic floor sequelae, including dyspareunia, defecatory dysfunction, fecal urgency, chronic perineal pain, anal incontinence and pelvic organ prolapse.

**Peripartum management**

Severe obstetric lacerations involving the anal sphincter complex, classified as third- and fourth-degree OASIS, are estimated to occur in 1 to 11 percent of deliveries. Operative vaginal deliveries and midline episiotomies are the greatest risk factors for OASIS. Nonmodifiable risk factors include primiparity, infant weight, ethnicity, family history and perineal body length. Labor-specific risk factors include labor induction or augmentation, epidural, persistent occiput posterior position, and more than 60 minutes’ pushing duration.

In OASIS cases, immediate measures will help ensure optimal repair. Performing the repair in an operating room helps ensure adequate lighting and exposure. Antibiotic prophylaxis with a second-generation cephalosporin and copious irrigation are vital.

For a third-degree laceration, we use allis clamps to grasp the anal sphincter muscles, which tend to retract. Interrupted sutures are used to repair internal and external anal sphincters.

Overlapping repair should be reserved for full-thickness tears. About 1.5 cm of sphincter bilaterally needs to be mobilized to properly perform this technique. During the repair, sutures should be placed posteriorly, inferiorly, superiorly and anteriorly, and figure-of-eight sutures should be avoided, as they can cause tissue necrosis. If the IAS can be isolated, it should be repaired separately from the EAS.

A 3-0 polyglactin or chromic suture is appropriate for fourth-degree lacerations. Also, hemostasis is important, as hematomata formation increases risk of wound complications. Lastly, urinary output should be monitored to avoid postpartum urinary retention.

**Postpartum management**

To aid healing, we recommend minimizing narcotic use, which can cause constipation. OASIS patients should be started on a bowel regimen with docusate and polyethylene glycol, if needed, for six weeks postpartum. Patients should be educated on taking twice-daily sitz baths.

At the initial visit to our clinic, we review obstetric history, pain, and bowel and bladder function. We talk about lactation issues and postpartum depression and refer to specialists if appropriate. We then perform a pelvic exam, evaluating for infection, breakdown, hematoma and granulation tissue. Using the posterior blade of a bivalve speculum is the best way to fully visualize the posterior vaginal wall while minimizing discomfort. Oftentimes, suture material can be removed if the wound appears to be healing normally.

Granulation tissue can be treated with silver nitrate or sharply debri ded after local analgesia. We also assess the levator ani muscles for structure, function and tenderness. It is also important to educate patients about performing pelvic muscle exercises. A digital rectal exam is reserved for patients with anal incontinence to evaluate sphincter integrity. Antibiotics can be prescribed if infection is present. We also prescribe nightly vaginal estrogen to breast-feeding mothers who have lacerations that are not healing properly. Surgical intervention may be necessary if the anatomy is significantly distorted or the patient fails expectant management.
Creating tools and protocols to reduce use, save lives

Managing Addiction and Drug Abuse in Pregnancy

A woman who has a substance abuse disorder finds herself unexpectedly pregnant. Where does she turn? Another woman who is pregnant refuses to admit she has a problem. Yet another woman is pregnant and finally feels she has the motivation to quit using opioids.

What happens when these women come to Cleveland Clinic?

For each of these scenarios, and many more, Cleveland Clinic’s OB Opiate Task Force is launching protocols and education and communication programs to help caregivers and patients manage the complicated path of opioid use in pregnancy. Caregivers will provide care and care coordination for women throughout their pregnancies and postpartum.

We talked with Rebecca Starck, MD, Ob/Gyn and President of Cleveland Clinic Avon Hospital, who co-manages the task force with colleague Trina Pagano, MD, obstetrician laborist at Cleveland Clinic Akron General.

What is Cleveland Clinic doing to manage opioid and drug issues in its OB practices?

We kicked off our OB Opioid Task Force about a year ago. It is a multidisciplinary, collaborative team that includes social workers, obstetricians, nurses, midwives, pediatricians, pharmacists, government relations staff and others — in all, about 45 members from across the enterprise, and especially from our OB hospitals (Cleveland Clinic Fairview, Cleveland Clinic Hillcrest and Cleveland Clinic Akron General).

What is the task force doing?

We have four work streams underway; all work in tandem and meet and report regularly. Our first work stream focuses on prenatal screening and care of pregnant patients with substance use disorders. The idea is to identify as early as possible those who are at risk or who are currently using drugs or alcohol or who have any substance use disorders. Our goal is to screen at least 90 percent of all patients at their first prenatal visit and provide several additional screens throughout their pregnancy. Tools have been developed in Epic, including online screening tools, order sets and reminders, to support providers.

For patients we identify who are using, we have collected a list of outpatient treatment providers in the region, including medication-assisted treatment programs, who can co-manage patients with us during the pregnancy.

We brought a buprenorphine waiver training course to Cleveland Clinic, targeting our OB providers along with other primary care physicians. We are not addiction specialists, but the idea is to educate OBs about risks to pregnancy and treatments that exist for addiction disorders. The program trains OBs to identify patients who are using or at risk for using so we can get patients the help they need.

What other efforts are underway?

The second work stream is our inpatient management work stream for women who are in a treatment program or who arrive at the hospital and are actively withdrawing from opioids. We have created Epic tools and order sets to follow our clinical guidelines for care of these patients. These tools will allow us to manage (continued)
laboring and postpartum patients. They will also help us manage women who have been identified with a substance use disorder, even if they didn’t have prenatal care, prior to labor.

The third work stream is led by our anesthesia and pharmacy teams. They are investigating safe and effective pain management for labor and delivery and postpartum care, mainly for patients who are in treatment or who have been identified with substance use disorders when they arrive. Additionally, we continue to work on appropriate opiate prescribing at discharge.

The fourth work stream is the neonatal piece — how we manage the baby suffering from withdrawal or neonatal abstinence syndrome (NAS). We want to co-manage women during pregnancy and continue to guide them in the postpartum period.

Our goal in all of these efforts is to ensure a warm handoff, at all stages of pregnancy, to an addiction treatment provider so that the mother does not go back to the street or to using again.

We know that pregnant women are motivated to have a healthy baby. Additionally, child protective services is less likely to remove a baby from a home if the mother can show she is complying with an addiction recovery program.

What about care for newborns?

NAS is a huge risk for newborns. Babies who arrive addicted, with withdrawal symptoms, do so much worse than other babies. For some mothers, as I mentioned, pregnancy can be the impetus to quit drugs. But for others, the grip is just too strong. We need to do everything we can to ensure they do not go back to using once they have their baby.

Cost is not an insignificant factor. In 2016, we had about 300 babies treated for NAS at two of our OB hospitals. That’s out of about 10,000 births.

On average across the country, normal newborn care costs $3,000 to $4,000. Care for each baby born with NAS costs about $60,000. Multiply that by 300 babies, and you realize what a huge financial burden this is for any healthcare system.

Your final takeaways for colleagues?

Addressing and resolving the problem of opioid use in pregnancy is a moral and ethical imperative for Ob/Gyns and for healthcare providers nationwide. We need to eliminate the stigma associated with suffering from substance use disorders and work toward preventing future addiction problems by raising awareness of the risks of opiate addiction and by ensuring we follow safe prescribing recommendations. Finally, caring for patients who are addicted in a nonjudgmental, compassionate manner will give them the best foundation for success.

Making Cervical Cancer Prevention Tools Available to Underserved Populations

Cervical cancer is fully preventable, yet it kills 250,000 women every year. Most deaths occur in resource-poor areas.

In 1997, Miriam Cremer, MD, MPH, Director of Global Health Research for Cleveland Clinic’s Ob/Gyn & Women’s Health Institute, founded Basic Health International (BHI), an organization dedicated to eradicating cervical cancer. BHI sees potential for global impact in three arenas:

- A recently finalized screen-and-treat implementation based on human papillomavirus (HPV) testing.
- A recently completed HPV self-sampling feasibility project.
- Two NIH-supported clinical trials to test the efficacy of new treatments adapted for use in low-resource settings.

Early screening of precancerous lesions through cytology has significantly reduced mortality in some regions, but Pap smears require infrastructure and trained staff that are not always available, according to Dr. Cremer. Tests for high-risk types of HPV, the causal agent of most cervical cancer cases, have significantly improved the sensitivity of cervical cancer screening and allow us to increase screening intervals. However, treatments for cervical precancer remain too expensive or too cumbersome for successful deployment.

The Cervical Cancer Prevention in El Salvador project was a 2012-17 collaboration between BHI and the Salvadoran Ministry of Health that screened over 28,000 women using a low-cost HPV test.

“We demonstrated the feasibility of HPV-based screening followed by immediate treatment versus the conventional strategy of referring HPV-positive women to colposcopy prior to treatment,” Dr. Cremer explains. “Our goal is to bring the HPV-based screen-and-treat paradigm to the global stage.”
According to the National Center for Biotechnology Information, approximately 1 in 500 women suffer from absolute uterine infertility, with options for becoming a mother limited to adoption or gestational surrogacy.

“Absolute uterine factor infertility is often a devastating diagnosis for these patients, and uterus transplant is arguably the only true treatment for the condition,” explains Elliott Richards, MD, Fellow in Reproductive Endocrinology and Infertility.

While there is growing interest in uterus transplantation both nationally and internationally, the procedure is restricted for now to a small number of academic centers. Dr. Richards cautions, “Uterus transplantation will likely remain experimental for the next five to 10 years.”

Uterus transplant is a complex procedure, involving multiple parties, with psychological, ethical and cultural considerations. Cleveland Clinic has published extensively on these concerns and performed more than a dozen practice organ procurements.

“When a candidate expresses interest in our transplant program, our research coordinator meets with them to determine whether they meet our inclusion or exclusion criteria, which is the first of a multiphase process,” says Dr. Richards, who notes the program has attracted an abundant pool of candidates with minimal recruitment effort.

Qualified candidates then meet with a primary investigator, fertility specialist, transplant nurse, infectious disease specialist, bioethicist, psychiatric specialist, social worker and research subject advocate. Next, a series of tests and examinations are performed and reviewed by the medical team. In addition to a comprehensive medical workup, ongoing assessment takes place regarding the subject’s ability to understand the risks, benefits and lifestyle changes associated with uterus transplantation, in vitro fertilization (IVF) and pregnancy. If the team unanimously agrees, the patient proceeds to IVF. At least six viable frozen blastocysts must be secured before patients are put on the uterus transplant list.

“Incredible effort is made to ensure constant communication and coordination among multiple care teams,” notes Dr. Richards.

Cleveland Clinic currently utilizes a deceased donor model for its uterus transplant program.

In the procurement surgery, the dissection and preparation of the donor uterus is performed first, though the uterus remains in situ and perfused until cross-clamping and procurement of lifesaving organs by other transplant teams. Once the uterus has been procured, it is brought to the back table in the neighboring OR. The uterus procurement team prepares the uterus while the uterus transplant team prepares the recipient. After the transplant, the patient is prescribed immunosuppressive therapy and is followed closely by many specialists. The transplanted cervix is biopsied regularly to monitor for rejection. Embryo transfer can be considered beginning at six months. Once the patient is pregnant, the delivery is performed by cesarean section. After one or two pregnancies, hysterectomy is performed.

Uterus transplantation:
A Promising Treatment for Uterine Factor Infertility

The Ob/Gyn & Women’s Health Institute transplantation team has been led by Rebecca Flyckt, MD, Director of the Fertility Preservation and Cancer Program, and Tommaso Falcone, MD, immediate past Chairman of the institute.

Longtime Head of Ob/Gyn & Women’s Health Institute Moves to Cleveland Clinic London

Ob/Gyn & Women’s Health Institute Chairman of 17 years, Tommaso Falcone, MD, FRCS(C), FACOG, began his new role as Chief of Staff, Chief Academic Officer and Medical Director at Cleveland Clinic London in September.

The newest Cleveland Clinic international outpost is slated to open to patients in 2020 (medical office building) and 2021 (hospital).

“"The most important thing about the time I spent as chair of the department and the institute is the growth we saw in Ob/Gyn and women’s health," said Dr. Falcone, in reflecting on his tenure here.

“We went from 20 staff members in 1995 to 151 full-time staff today. We greatly expanded our footprint, including the number of hospitals we practice in, the patients seen and babies delivered. We began as a small department, and now we are a very large institute.”

In addition to the employed physicians, he pointed to the large midwifery program and more than 360 nonphysician support staff, including ultrasound technicians, embryologists, nurse practitioners and nurses.

“In 2018, we are expected to have more than 400,000 patient visits, more than 10,000 deliveries and 11,000 surgeries distributed over 36 sites, three main tertiary care hospitals with Level 3 NICUs and four secondary hospitals," he says.

“We are ranked No. 5 in the nation and No. 1 in Ohio by U.S. News & World Report. And the staff is highly regarded throughout Northeast Ohio, across the nation, and internationally.”

(continued)
We greatly expanded our training programs,” he continues. “We went from no Cleveland Clinic residents and research. I am very proud of them and the physicians I have mentored, many of whom have gone on to become leaders and exceptional clinicians.

“We greatly expanded our training programs,” he adds. “We went from no Cleveland Clinic residents when I started in 1995 to having our own residency program with seven new residents each year in a program that is highly focused on surgery. We also have new fellowship programs, bringing the total to four sought-after fellowships.”

Dr. Falcone shared that his greatest personal accomplishment was when his research team performed the world’s first robotic gynecological surgery in a patient in 1999. “More recently, we performed the first uterine transplant in the Americas,” he says. “In the research arena, I continue to work on ways to improve the surgical management of endometriosis and fertility preservation for women suffering from this painful disease.”

As Chief of Staff in London, Dr. Falcone’s responsibility is to develop all programs in various specialties — heart, neurosurgery, digestive disease, orthopaedic surgery, eventually all specialties — to build out the entire service.

“My biggest opportunity is to build a world-class team, specifically one that excels in clinical care, research and education,” he says. “Physicians in the U.K. are very well-trained, but I’m looking forward to building a hospital staff with Cleveland Clinic standards, care and culture. We are combining the best of Cleveland Clinic and the best of U.K. medicine into a unique practice model.”

country and internationally for clinical care, education and research. I am very proud of them and the physicians I have mentored, many of whom have gone on to become leaders and exceptional clinicians.

Ob/Gyn & Women’s Health Institute
At a Glance

13 centers across the region and in Florida

Chronic Pelvic Pain
Endometriosis
Fertility
General Gynecology
Gynecologic Infectious Diseases
Gynecologic Oncology
Maternal-Fetal Medicine
Menstrual Disorders, Fibroids and Hysteroscopic Services
Obstetrics and Family Maternity
Postpartum Care Clinic
Specialized Women’s Health
Urogynecology and Pelvic Floor Disorders
Women’s Weight Management

Shared medical appointments

Cleveland Clinic’s Ob/Gyn & Women’s Health Institute offers shared medical appointments in these centers:

General Gynecology | Obstetrics and Family Maternity | General Obstetrics and Gynecology, Florida | Menstrual Disorders, Fibroids and Hysteroscopic Services | Specialized Women’s Health | Urogynecology and Pelvic Floor Disorders | Women’s Weight Management

Virtual visits

Virtual visits allow patients to communicate in real time (audio and video) with their providers from their home, office or elsewhere via a computer or smartphone. The Ob/Gyn & Women’s Health Institute offers virtual visits for its Metabolic Weight Management Program and for new, follow-up and postoperative visits in a variety of services.

Clinical research: by the numbers

$2.4 million in new research funding
184 studies
78 publications

The Ob/Gyn & Women’s Health Institute provides a robust infrastructure for the conduct of high-impact studies through research support and career development of physician-researchers.

Patient activity

Hospital admissions 9,802
Surgical procedures performed* 9,039
Deliveries 9,523
Outpatient visits 377,874
Shared medical appointments 709
Virtual visits 895

Caregivers

Ob/Gyns 153
Certified nurse midwives 22
Advanced practice nurses 40
Residents 24
Fellows 15

Caregivers

Ob/Gyns 153
Certified nurse midwives 22
Advanced practice nurses 40
Residents 24
Fellows 15

*excludes c-sections

Statistics reported are from July 1, 2017, to June 30, 2018.

Zika Infection Still Poses Concern for Pregnant Women

While our knowledge about Zika has grown in the past two years, providers still need education and we still need more research, according to Oluwatosin Goje, MD, head of the Ob/Gyn & Women’s Health Institute Gynecologic Infectious Diseases Program. The burden of infection for the unborn baby and congenital birth defects are of major concern. Congenital Zika syndrome includes microcephaly, brain calcifications, hearing loss and/or ophthalmic abnormalities.

Steven Gordon, MD, Chair, Department of Infectious Disease, cautions that while Zika is primarily a mosquito-borne disease, it can be transmitted sexually through infected semen from a male who harbors the virus but is asymptomatic. Viral RNA has been detected in semen up to six months after exposure. It’s important for couples to practice safe sex for about six months after a partner may have been exposed.

Most patients are asymptomatic, and that is why the Centers for Disease Control and Prevention recommends “opting in,” meaning any pregnant woman or woman who is thinking about becoming pregnant should be assessed based on history for risk of Zika infection.

It’s not just where you’ve been, but also where your partner has been. As of July 2017, the World Health Organization identified about 95 countries where there is ongoing transmission of Zika.

Diagnosis of Zika can be difficult because the virus remains in tissue for a relatively short time. The symptomatic pregnant woman with exposure will always be tested. But testing the asymptomatic pregnant woman may cause unnecessary anxiety. Expert advice is advised.
Fertility Center laboratory excellence
Accredited by the College of American Pathologists, our Fertility Center has seven experienced embryologists. This allows us to perform procedures meticulously, develop and train in new protocols, and cover the lab 365 days a year.

On the weekends, we have a minimum of three staff doing procedures and monitoring incubators and cryofreezers. This on-site staff checks our alarm system every day, 365 days a year. In addition, our remote alarm monitoring system operates 24/7. If something were to go wrong with our liquid nitrogen tanks or incubators, we would receive an immediate alert and a staff member could be at the center quickly, ensuring the safety of all embryos.

In addition, we employ continuous undisturbed culture by using a high-tech system that allows us to continuously monitor embryos without removing the dish from the incubator, thus minimizing stress.

Other key performance indicators
The benchmark for fertilization with intracytoplasmic sperm injection, when a single sperm cell is injected directly into an egg, in high-performing laboratories is 70 percent or higher. The rates in our lab are between 80 and 90 percent. We are especially good at working with severely impaired sperm.

The implantation rate of a single transferred embryo is another key performance indicator. The implantation rate for our younger patients is 56 percent — well above the 2016 national average of 45.6 percent.

Our embryo survival rate after freezing is excellent: 95 to 98 percent with frozen-thawed embryos. In fact, our pregnancy and implantation rates with frozen embryos are as high as those with fresh transfers.

Cleveland Clinic Fertility Center’s live birth rate per transfer is 60 percent compared with 49 percent, according to 2016 national data.

Resources for Physicians

Consult QD — Ob/Gyn & Women’s Health
News, research and perspectives from Cleveland Clinic experts:
consultqd.clevelandclinic.org/obgyn

Ob/Gyn ePerspectives
To subscribe, visit:
clevelandclinic.org/obgynnews

24/7 Referrals
855.REFER.123
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Outcomes Data
clevelandclinic.org/outcomes

CME Opportunities
Visit ccfcmn.org for offerings from Cleveland Clinic’s Center for Continuing Education.

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clevelandclinic.org/obgyn

Cleveland Clinic
Every life deserves world class care.

9500 Euclid Ave., Cleveland, OH 44195

The Ob/Gyn & Women’s Health Institute provides a full spectrum of care for women from adolescence through menopause. Institute members provide collaborative care for gynecological cancers, infertility, incontinence, pelvic floor disorders and other women’s health issues in a supportive environment enhanced by innovative research. The Ob/Gyn & Women’s Health Institute is one of 26 clinical and special expertise institutes at Cleveland Clinic, a nonprofit academic medical center ranked as the No. 2 hospital in the country by U.S. News & World Report. More than 3,500 staff physicians and researchers in 140 specialties at Cleveland Clinic collaborate to give every patient the best outcome and experience, clevelandclinic.org

Ob/Gyn & Women’s Health Institute 2018 Year in Review
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