

chemotherapy and had catheter maintenance for >3 months were included for analysis. Groups were divided based on their maintenance interval: short interval (SI) at 4–6 weeks which is according to manufacturer's specifications, or long interval (LI) at 10–12 weeks which was historically performed with patient's 3-month surveillance visits. Complications were defined as events during the flush maintenance period that required removal of the port. Patient demographics and risk factors for inflammation, clotting, and infection were also collected for analysis. As a secondary outcome cost analysis was performed. SPSS was used to analyze data via Fisher's exact test and Chi-Square analysis. Significance was defined as $p < 0.05$.

Results: Data was collected on 259 patient charts from 2010 to 2017 of which 185 met inclusion criteria. Three complications requiring removal were seen during the study period: infection (1) and port malfunction (2). Complication rates were not statistically different between the SI group ($n=90$) 1.11% and the LI group ($n=95$) 2.10%, $p=0.525$. The groups were also noted to be evenly matched with no significant patient characteristics or demographic differences.

Currently, \$168 is billed for each implanted catheter flush encounter at the study facility. Patients traveled an average of 78.64 miles round trip to reach the facility. Considering only travel costs (gas, vehicle wear and tear) and billing, the LI scheduling could reduce a patient's expense by 50 to 66% and save as much as \$59–\$119 each month in addition to the individual's copay.

Conclusions: Our findings support the hypothesis that complication rates are not increased when using a long interval flush maintenance schedule. Additionally, the potential savings for the patient is not insignificant and warrants consideration

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Poster #42

Workplace harassment and discrimination in gynecology: Results of an International Society Survey

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Objectives: Sexual and non-sexual workplace harassment and discrimination have not been studied in gynecology despite reported concerns. Our objective was to characterize harassment and discrimination among physicians in gynecology.

Methods: An IRB-approved survey was constructed and beta-tested to inform policy changes within a professional gynecologic society. It was distributed by email to all members ($n=7026$) using the REDCap survey tool with questions regarding demographics, attitudes regarding harassment and discrimination, and experiences of workplace harassment and discrimination and perceived sequelae. All responses were anonymous and non-traceable and subjects provided consent at the time of survey submission. Frequency distributions were determined and non-parametric tests were performed.

Results: A total of 907 physicians responded; 603 were US and 304 were non-US. Sixty percent were female (F) and 40% were male (M). F were younger than M ($p < 0.05$); 20% were trainees. F were more likely than M to think that the #MeToo movement was justified and overdue ($p < 0.001$), independent of age or trainee status. More F than M experienced workplace discrimination (67% vs. 39%, $p < 0.001$), and gender was the most common factor for both. The most common

sequela was loss of self-confidence (46%); F reported this and lower salary, while M reported lower patient volume and fewer employment opportunities. Women felt harassment was more prevalent in the medical field than did men, independent of age or trainee status. Overall, 39% of physicians experienced workplace harassment, including 23% non-sexual, 37% sexual, and 40% both. Harassment was indicated by more F than M (81% vs. 18%, $p < 0.001$) and by more US than non-US respondents (43% vs. 30%, $p < 0.001$), and gender was the most common basis for harassment. The harasser was senior in 84% of cases, in a position of power in 72% of cases, and was more often a physician in cases involving F (91%). Sequelae occurred in 53% of victims but only 31% reported an incident, often due to fear of reprisal. Overall, 28% of respondents experienced sexual harassment; 84% were F ($p < 0.001$), 87% were US, and 44% were <40 years old. The nature of the events varied; 16 women and 2 men experienced workplace-related sexual assault. The sexual harasser was senior in 80% of cases and in a position of power in 59% of cases. Sequelae (work and personal issues) occurred in 36% of victims and 22% sought counseling. Only 8% of victims reported an incident; 62% did not think it was taken seriously and 10% felt subject to reprisal.

Conclusions: Workplace harassment, including sexual harassment, is commonly experienced by female and male gynecologists, usually related to a power differential. Gender based discrimination is commonly identified. Substantial improvements should be made in the workplace environment to achieve equity and a workplace free of harassment and discrimination.

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Poster #43

Prevalence of anemia and compliance to the National Comprehensive Cancer Network guidelines for workup and treatment of anemia among patients diagnosed with gynecologic cancer

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Objectives: The National Comprehensive Cancer Network (NCCN) recommends prompt evaluation of anemic patients with hemoglobin (Hb) ≤ 11 g/dL. There are a paucity of studies evaluating compliance with the NCCN guidelines. Our objective was to investigate the prevalence of anemia among patients diagnosed with ovarian and uterine cancer and assess compliance with NCCN guidelines.

Methods: We performed a retrospective cohort study of patients diagnosed and treated with ovarian and endometrial cancer at our institution from 2008–2018. Tumor-registry-confirmed cancer cases were identified using ICD-0 codes from the Synthetic Derivative (SD) database which is a de-identified copy our institution's electronic medical record. Patients were included if they were between the ages of 18 and 89, had their initial care at our institution, and had a hemoglobin (Hg) within the first 6 months of diagnosis. Anemia was defined as Hg ≤ 11 g/dL. Anemia was graded using the CTCAE v.4.0. Absolute and possible iron deficiency were defined by NCCN Guidelines.

Results: We identified 1190 patients who met our inclusion criteria. The median age was 61 years (interquartile range [IQR] 54–69). The most common malignancy was uterine cancer 875 (74%) followed by ovarian 273 (23%). Twenty-one were noted to have dual primaries (2%). Of the 1027 patients with a Hb identified prior to initiation of oncologic treatment 248 (24%) patients were noted to be anemic at time of diagnosis. Of the 1190 patients in our study, 851 (72%) were noted to be anemic within six months of diagnosis. Of these patients 279 (23%) were noted to have grade 1, 349 (29%) grade 2, and 223

(19%) grade 3 anemia. Two hundred forty-three (29%) underwent workup for anemia, of which 68 (8%) had iron studies performed. Of those with iron studies performed, 12 (18%) patients had absolute iron deficiency and 4 (6%) had possible iron deficiency. Despite the small percentage of individuals with iron evaluation, 222 (19%) patients were placed on iron supplementation. Sixty-one were placed on oral iron and 6 were placed on iv iron supplementation.

Conclusions: Anemia is pervasive among gynecologic cancer patients, but compliance with NCCN guidelines is low. Our data suggest there are opportunities for improvement in evaluation and management of anemia among patients with ovarian and uterine cancer.

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Poster #44

Preparation for Gynecologic Oncology fellowship during obstetrics and gynecology residency training: Incoming fellows' perspectives

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Objectives: To assess the perceptions of incoming Gynecologic Oncology fellows on how Obstetrics and Gynecology residency prepared them for subspecialty training.

Methods: A previously validated questionnaire, used to survey Gynecologic Oncology fellowship program directors, was modified and distributed to all incoming first year Gynecologic Oncology fellows. Distribution was via email and used commercially available survey software. The fellows were identified using a contact list provided by the Society of Gynecologic Oncology. The 25-item survey contained questions about fellows' surgical experience, their perceived ability to function independently both in the operating room and in other care settings, and their research experience. A Likert scale was used for responses. Standard descriptive statistical methods were used to analyze survey data.

Results: Thirty-five first year fellows completed the survey, for a response rate of 52.2%. In the surgical domains, fellows reported being most experienced and most comfortable with laparoscopic hysterectomy. Over 80% of respondents had performed 30 or more laparoscopic hysterectomies in residency. Despite reporting being the least comfortable with robotic hysterectomies, 48.6% of fellows had performed 16 or more cases. The majority of fellows (88.6%) felt mostly or very comfortable evaluating and managing post-operative complications but 57.1% reported feeling at most only somewhat

comfortable discussing surgery and chemotherapy with patients. Most fellows reported formal research experience during residency, largely limited to written abstracts. Only 25.7% of respondents had presented more than two oral research presentations. Most (68.6%) rated their understanding of basic statistics as poor or fair and 57.2% reported their ability to formulate a research project and collect and analyze data as poor or fair.

Conclusions: Incoming Gynecologic Oncology fellows report being underprepared for advanced subspecialty training in certain aspects of surgery and oncologic counseling as well as independent research. In comparison to the perception of fellowship program directors, a greater percentage of fellows reported feeling overall prepared for autonomous surgical practice. In light of the ACGME changing guidelines with respect to surgical training and research curricula, appropriate preparation for fellowship training and independent practice remain important areas of education research.

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Poster #45

Tumor involution is associated with dampening of immune elements

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Objectives: This study aims to determine the immune microenvironment (MIV) alterations of ovarian carcinoma during intraperitoneal (IP) chemotherapy induced tumor involution.

Methods: We identified a cohort of 10 patients with ovarian adenocarcinoma treated with IP chemotherapy during which serial biological samples were collected. Our cohort had available samples from early (pre-chemotherapy, cycle 1), intermediate (cycle 2-4), and late time points (cycle 5, post chemotherapy). RNA was isolated from serially collected IP fluid cells and analyzed via a Nanostring multiplex gene expression panel focused on immune function. Genes differentially expressed between early, intermediate and late time points were identified. Paired tumor tissue samples pre- and post-chemotherapy were analyzed by immunohistochemistry (IHC) for CD8, CD19 and mucin-1 (MUC1). To evaluate humoral immunity in tumor involution, MUC1 antibody (α -MUC1) levels in IP fluid were measured by ELISA.

Results: A total of 161 immune genes from IP fluid cells were differentially expressed between early and late time points. Most of the gene expression changes occur late in chemotherapy, with 126 genes differentially expressed between intermediate and late time points and only 48 genes differentially expressed between early and intermediate time points. After adjusting for false discovery rate, 6 immunoregulatory genes were differentially expressed (downregulated) late in chemotherapy and remain differentially expressed overall. IHC analysis of tumor tissue confirmed low immune cell infiltrate post-chemotherapy. Interestingly, 4 of the 8 genes that were differentially expressed early in chemotherapy and remain differentially expressed overall were specific to B-cell function and increasing in expression. Of all differentially expressed genes between early and intermediate time points, the largest portion (36%) were specific to B-cell function. α -MUC1 presence was detected in IP fluid samples of 5 out of 8 patients. Average α -MUC1 absorbance in both early and late time points differed between patients who are still alive compared with patients who are deceased. IHC analysis of tumor tissue identified two patients with tertiary lymphoid structures containing T-cells and B-cells, both of which have survived over 7 years with recurrent ovarian carcinoma.

