Assessment and Recommendations for the Society of Obstetric Anesthesia and Perinatology Fellowship Websites

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One study found that up to 98% of prospective anesthesiology applicants use websites to learn more about residency programs.[1] This letter hopes to analyze the information provided on each obstetric anesthesiology fellowship program website and make recommendations for future improvements that would aid fellowship program directors in evaluating their methods of information delivery to prospective applicants.

Fifty-five total fellowship programs are currently listed on the Society for Obstetric Anesthesia and Perinatology (SOAP) database, but 3 programs currently do not have a corresponding obstetric anesthesia institutional website, so they were excluded from our study.[2] Appendix A outlines a set of 24 total criteria that were selected for assessment and evaluation. Out of the 26 criteria outlined by Nguyen et al, we incorporated 24 variables into our study.[3] We selected the 24 criteria after a comprehensive review of fellowship websites, focusing on what we deemed most pertinent for evaluation. The 2 criteria omitted from our study, namely "name of current fellows" and "past fellow current employer," were excluded due to overlap with other criteria already included in this study, such as "alumni listed" and "current fellow listed." It is crucial to point out, however, the limitations of relying on dated survey data. The 24 criteria used to evaluate the websites in this paper were gathered from previous

studies examining the websites of various specialties. A study from the *Journal of Neurosurgical Anesthesiology*[4] and another study from *Pediatric Anesthesia*[5] used these criteria to evaluate the fellowship websites of neuroanesthesiology and pediatric anesthesiology fellowship programs, respectively. These compilations include insights from Chu et al's survey, which identified information frequently sought by anesthesiology applicants.[1] The SOAP webpage was used to identify the 52 websites of obstetric anesthesiology fellowships that were each evaluated by 2 separate researchers (KD and EK). For instances in which there was disagreement between the 2 evaluators, a third author (JL) would evaluate the website to settle the discrepancy. The websites were accessed by the investigators in May 2023. The information on these websites was analyzed on the webpage of the fellowship program or through links within the institution website that were readily accessible. The results are listed in Appendix A. The number of criteria identified ranged from 0 to 24, with a mean number of criteria met of 16.2 out of 24 (67.3%). The number of deliveries expected at each fellowship program and the type of acute or advanced procedures that incoming fellows may experience at each institution are displayed in Appendices B and C.

The criteria that were not found on most of the fellowship program websites are

displayed in Appendix D. Although almost half of the websites examined in this study contained more than 50% of the content, none of them completely met all 24 criteria, which supports the idea that these programs can continue to work on their websites in hopes of providing the most accurate information to prospective applicants. Some of the important information that was missed by many of the programs included salary, call responsibility, life in the area, alumni, and current fellows (Appendix B). Some program websites may have omitted this information due to the possibility that certain criteria could undergo annual changes. This observation underscores the potential for improvement, suggesting that these programs can enhance their websites to offer the most accurate information to prospective applicants. Specifically, there is an opportunity for standardization of website criteria on platforms like the SOAP website, addressing areas that are inconsistently reported on institutional webpages. This standardization would facilitate ease of comparison for applicants.

The salaries of incoming fellows were only displayed on 8 of the 52 (15.4%) fellowship websites examined in this study. Salaries and living expenses for a given area may be important considerations for applicants living in a different area. It is understandable that these programs do not display a specific salary, as this number can

fluctuate depending on the year, economy, and job market. However, showing an estimated number may allow applicants to set expectations or find programs that best align with their financial needs.

Life outside of medicine may be important for prospective applicants, especially those who have families or prioritize work-life balance. The program websites should showcase the culture, diversity, entertainment, amenities, housing, transportation, safety, cost of living, and overall quality of life in the local city or region. It is possible that applicants will be more incentivized to select a particular program if their needs are fulfilled by the surrounding location, proximity to family, and more. Despite the importance of work-life balance, only 12 of the 52 (23.1%) programs shared content regarding the local area on their websites.

Another criterion that was often missed was call responsibility, where only 12 of the 52 (23.1%) programs examined in this study included this information on their websites. Prospective fellows can evaluate whether the administrative responsibilities tied to patient care, process for transferring patient care responsibility, and in-house time commitment during call activities align with their desired experiences during fellowship training.

Less than half of the programs showcased information regarding their alumni and current fellows. Only 16 of the websites displayed the names, contact information, and current updates regarding graduated alumni, while only 18 of them shared information regarding their current fellows. Knowing the names of current and former fellows may help applicants visualize the credibility, preparedness, and success of these programs. Applicants may have the opportunity to reach out to those who have completed training at these fellowship programs to ask about their personal experiences and establish professional mentorship. However, there are drawbacks to adding alumni information, such as privacy concerns, limited representation of the program, and selection bias of past alumni.

Only 17 of 52 programs (32.7%) included the type of procedures or advanced training associated with their fellowship experience. Sharing this information on their fellowship websites will allow applicants to tailor the type of skills that they would want during their time in these programs. Applicants should be able to create expectations on the procedures of interests that they desire to learn to best advance their careers as obstetric anesthesiologists.

Faculty involvement within a program was included in only 20 of the 52 program websites that were assessed in this study. Prospective fellows may prioritize direct mentorship, research guidance, and/or advanced clinical training from faculty. Providing the names, biographies, publications, credentials, and training roles of faculty will allow applicants to examine if the expertise, style of teaching, and reputation of faculty align with their career goals. These programs can share how their faculty members are involved in didactics, research conferences, clinical training, and more.

One limitation to our study is that the article by Chu et al involved a limited number of responses from residency applicants (37% response rate) and may not fully represent current obstetric anesthesia fellowship expectations. Furthermore, a recent survey of fellowship applicants could have ensured the relevance of the derived criteria.

With more obstetric anesthesia fellowship programs relying on virtual interviews, it is advantageous for programs to showcase engaging, reliable, and comprehensive webpages. This allows program directors to provide important information to interested applicants, giving them the opportunity to critically compare the benefits and drawbacks of each program. Our study examined the websites of 52 obstetric anesthesia fellowship programs and found that essential content was absent from many of these webpages. Program directors should use these websites as recruitment tools by highlighting the accomplishments of their institutions and expectations that they have for future fellows.

References

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Appendices

Appendix A. Analysis of Obstetric Anesthesia Fellowship Websites Containing Pertinent Categorical Information

Category	Websites With Criteria Present
SOAP contact information/email: the SOAP website displays information to contact individual programs.	52 (100%)
Accreditation status: indicates whether a program has been accredited by the Accreditation Council for Graduate Medical Education.	52 (100%)
Program overview: provides a summary of a program's vision and training experience.	51 (98.1%)
Opportunity for internal moonlighting: details if there are moonlighting opportunities for fellows.	51 (98.1%)
One click from Google: the program's websites can easily be reached with just one click from Google.	51 (98.1%)
SOAP website: number of fellowship positions. The fellowship program displays the number of fellows that they accept each year on the SOAP website.	50 (96.2%)
Elective rotations: shares the rotations that fellows will experience during their training experience.	50 (96.2%)
Director contact: displays the contact information of the program's director.	47 (90.4%)
Application process: shares the requirements, deadlines, and other logistics needed to apply to the fellowship programs.	46 (88.5%)
Research: information on the scholarly activities at the fellowship programs.	46 (88.5)
Functional SOAP link: the links displayed on the SOAP website for each program redirect applicants to the proper webpages.	42 (80.8%)
Number of deliveries per year: the number of cases or deliveries that each institution experiences.	39 (75.0%)
Coordinator contact: shares the contact information of the program's coordinator.	36 (69.2%)
Number of fellows accepted each year: displays the number of accepted fellows each year on their websites.	34 (65.4%)
Journal club/conferences: information on journal sessions, conferences, and other scholarly events at their institutions.	34 (65.4%)
Didactics: information on didactic meetings and schedules, such as seminars or lectures, at their programs.	31 (59.6%)
Rotation schedule: shares the overview schedule for fellows, including their rotations, electives, breaks, and more.	25 (48.1%)
Faculty involved: displays a list of faculty members who are involved in the fellowship training.	20 (38.5%)
Current fellows listed: name and information of fellows who are currently in the program.	18 (34.6%)
Types of obstetric anesthesia procedures/advanced training: details regarding specific procedures or advanced cases that fellows will be exposed to during their training.	17 (32.7%)
Alumni listed: names and information of past fellows who have graduated from the program.	16 (30.8%)
Life in the area: information about the living conditions, local amenities, cost of living, and more regarding the surrounding city or region.	12 (23.1%)
Call responsibility: shares the on-call responsibilities that fellows should expect during their training.	12 (23.1%)
Salary: shows how much fellows should expect to make in terms of compensation or stipend during their training.	8 (15.4%)

Appendices *continued*

Appendix B. Number of Deliveries for Each Institution

Institution	Number of Deliveries Per Year
Baylor College of Medicine Program	3500 deliveries
BC Women's Hospital, University of British Columbia	7000 to 8000 deliveries
Brigham and Women's Hospital	8000 deliveries, 24 fetal surgeries, 1500 in vitro fertilizations
Cedars-Sinai Medical Center	7000 deliveries
Cleveland Clinic Foundation	13000 deliveries
Columbia University	4500 deliveries
Duke University	3500 deliveries
Emory University	7000 deliveries
Icahn School of Medicine at Mount Sinai	8400 deliveries
IWK Health Centre, Dalhousie University	5000 deliveries
Johns Hopkins University	4000 deliveries
Magee-Women's Hospital of UPMC	10000 deliveries
Mayo Clinic	2500 deliveries
McGovern Medical School at UT Health, Houston	7000 deliveries
Mount Sinai West	6000 deliveries
New York Presbyterian Hospital Weill Cornell Medical College	7300 deliveries
New York University Grossman School of Medicine	6000 deliveries
Northwestern University Feinberg School of Medicine	Over 12000 deliveries Cesarean (3500) Labor neuraxial analgesia rate (11000 procedures)
Ochsner Clinic Foundation	3500 deliveries
Stanford University	5000 deliveries
Sunnybrook Health Science Centre	4000 deliveries
The George Washington University School of Medicine and Health Sciences	3500 deliveries
The Ottawa Hospital	7000 deliveries
Thomas Jefferson University Program	2200 deliveries
University of Alabama at Birmingham	4500 deliveries
University of California at San Diego	3000 deliveries
University of California, Irvine	6000 deliveries
University of Cincinnati Medical Center	2500 deliveries
University of Colorado School of Medicine	3800 deliveries
University of Florida	3185 deliveries
University of Illinois Chicago	3000 deliveries

Appendices *continued*

Institution	Number of Deliveries Per Year
University of Maryland Medical Center	2000 deliveries
University of North Carolina, Chapel Hill	>4000 deliveries
University of Texas Health Science Center	Memorial Hermann Hospital: 5000 deliveries Harris Health System's Lyndon B. Johnson Hospital: 2000 deliveries
University of Texas Medical Branch	5600 deliveries
Wake Forest School of Medicine	3500 deliveries
Washington University School of Medicine in St. Louis	3600 deliveries
Western University	6000 deliveries
Yale University	9000 deliveries

Appendix C. Types of Obstetric Anesthesia Procedures/Advanced Training for Each Institution

Institution	Types of Cases
BC Women's Hospital, University of British Columbia	Cesarean delivery, elective ambulatory gynecologic surgery, high-risk antenatal anesthesia
Brigham and Women's Hospital	Fetal heart tracing recognition, neonatal resuscitation, neuraxial analgesia, point-of-care coagulation testing, lumbar spine ultrasonography, and transthoracic echocardiography
Cleveland Clinic Foundation	Transthoracic echocardiography, neuraxial anesthesia, and alternative, supportive analgesic blocks
Johns Hopkins University	Elective and emergent cesarean section, dilation and curettage, postpartum tubal ligation, cerclage, regional anesthetic block, uteroplacental blood flow, and fetal heart monitoring
Montefiore Medical Center	Labor analgesia, cesarean delivery, and additional procedures such as cerclage placements, external cephalic versions, and fetal surgery
New York Presbyterian Hospital Weill Cornell Medical College	Congenital and acquired cardiac lesions, abnormal placentation, coagulopathies, and difficult airways. Fellows participate in a large number of neuraxial blocks and difficult intravenous and arterial line placements
Stanford University	Fetal surgery, nonobstetric surgery during pregnancy, and high-risk deliveries
University of Cincinnati Medical Center	Labor analgesia, cesarean section anesthesia, postpartum tubal ligations, dilation and curettage, cerclage placement/removal, and minor fetal surgical procedures such as thoracentesis, shunt placements, and fetal blood transfusions
University of Colorado School of Medicine	Congenital cardiac patients and a significant number of invasive placentation cases each year. Fetal procedures, including fetoscopy, open MMC repairs and EXIT procedures
University of Florida	Labor, assisted vaginal deliveries, cesarean deliveries, and other obstetric procedures

Appendices *continued*

Institution	Types of Cases
University of Illinois Chicago	Abnormal placental implantation, including placenta percreta, amniotic fluid embolism, postpartum hemorrhage, achondroplasia, vaginal births after cesarean delivery, conjoined twins, triplets, quadruplets, and the super morbidly obese
University of Maryland Medical Center	Approximately 3 to 4 critically ill gravidae per month, often hospitalized with severe cardiac, neurologic, or traumatic disease and requiring mechanical ventilation and invasive monitoring
University of North Carolina, Chapel Hill	Early gestation pre-eclampsia with severe features, super morbid obesity, cardiac and neurological disorders, intrinsic or acquired coagulopathy, abnormal placentation, and fetal conditions that include severe prematurity, fetal airway anomalies and masses, chromosomal abnormalities, and central nervous system lesions
University of Texas Southwestern Medical School Program	Interpretation of fetal heart rate monitoring, antepartum fetal testing, and high-risk antepartum care
University of Washington	Nonobstetric surgery during pregnancy, fetal surgery, cesarean hysterectomy, cerclage placement, and other surgeries related to pregnancy and delivery
Vanderbilt University Medical Center	Labor analgesia (neuraxial, inhalation nitrous oxide), cesarean anesthesia (neuraxial, general), postpartum anesthesia (eg, hemorrhage, retained placenta), antenatal anesthesia (eg, cerclage), and ultrasound-guided techniques (eg, neuraxial block, transversus abdominis plane block)
Yale University	Regional (local) anesthesia for vaginal and cesarean deliveries, tubal ligations, fetal surgeries, and EXIT procedures. Regional blockade for postoperative pain relief and the use of ultrasound for regional analgesia and epidural placements

Abbreviations: EXIT, ex-utero intrapartum treatment; MMC, myelomeningocele.

Appendix D. List of Criteria Less Than or Equal to 35% of Websites Provided

Criterion	Details
Current fellows listed	Displaying the names and biographies of current fellows allows applicants to assess the diversity of a program, seek networking opportunities, and learn more about the training at an institution.
Alumni listed	Listing the names, biographies, accomplishments, and future plans of alumni displays the successes and credibility of fellowship programs.
Life in the area	Sharing about the culture and environment of the surrounding city allows applicants to examine if they will enjoy living in a certain region. This is important for those who prioritize work-life balance, have families, or enjoy specific activities.
Call responsibility	Displaying the call responsibility allows applicants to predict the type of training that they will receive at a certain program and examine how they will allocate their time for research, teaching medical students, and more.
Salary	Sharing the salaries of current fellows helps applicants plan a budget for the incoming year, which is important for those who have families or plan to train in expensive regions.
Types of obstetric anesthesia procedures/ advanced training	Showing the type of procedures or advanced training that applicants will be exposed to allows them to tailor the type of experiences that best suits their career goals.