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Association of Women Surgeons' Comprehensive Initiative for Healthy Surgical Families During Residency and Fellowship Training

Helen M. Johnson, MD; Madeline B. Torres, MD; Mecker G. Möller, MD; Lisa Cannada, MD; Lauren B. Nosanov, MD; Andrea N. Riner, MD, MPH; Leah C. Tatebe, MD; Chantal Reyna, MD; Maria S. Altieri, MD, MS

IMPORTANCE The lack of family-friendly policies continues to contribute to the underrepresentation and attrition of surgical trainees. Women in surgery face unique challenges in balancing surgical education with personal and family needs.

OBSERVATIONS The Association of Women Surgeons is committed to supporting surgical families and developing equitable family-friendly guidelines. Herein we detail recommendations for adequate paid parental leave, access to childcare, breastfeeding support, and insurance coverage of fertility preservation and assisted reproductive technology.

CONCLUSIONS AND RELEVANCE The specific recommendations outlined in this document form the basis of a comprehensive initiative for supporting surgical families.

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Author Affiliations: Author affiliations are listed at the end of this article.

Corresponding Author: Maria S. Altieri, MD, MS, Division of GI Surgery, Penn Medicine/Pennsylvania Hospital, Philadelphia, PA 19107 (maria.altieri@pennmedicine.upenn.edu).

Despite the increasing number of women joining the surgical workforce, the lack of family-friendly policies continues to substantially contribute to the underrepresentation and attrition of women in surgery. The benefits of adequate paid family leave, access to childcare, breastfeeding support, and insurance coverage of fertility preservation and assisted reproductive technology (ART) cannot be overstated. The Association of Women Surgeons (AWS) is committed to supporting surgical families and developing equitable family-friendly guidelines. Trainees face unique challenges balancing personal and family needs with surgical education and require support during residency and fellowship. Herein, we detail family planning considerations including pregnancy, adoption, fertility preservation, ART, infertility, and pregnancy loss, as well as postpartum considerations including parental leave, breastfeeding support, and childcare. We advocate for universal policies across institutions that encompass these arenas and offer practical recommendations for policy implementation.

Planning for Parenthood

The decision to become a parent is personal and should not be at odds with surgical career goals. Trainees who start or grow a family during residency or fellowship should be supported by their programs and colleagues, regardless of others' opinions about optimal timing, perceived burden on colleagues, or other concerns. Trainees should be encouraged to share family planning decisions, including pregnancy status, whenever they are comfortable doing so, with as much advance notice as possible to allow sufficient time for collaborative planning. When a trainee notifies their program director of upcoming changes to their family, a formal meeting should be held to discuss all available options for leave and other accommodations. American Board of Surgery (ABS), Accreditation Council for Graduate Medical Education (ACGME), institutional, and program policies should be reviewed, with consideration for unforeseen circumstances, such as premature birth or pregnancy complications, requiring starting leave earlier than anticipated, and/or extension of training. Suggested goals and action steps for program directors and institutional leadership seeking to support trainees who are planning for parenthood are outlined in **Table 1**.[1]

Pregnancy

For many surgeons, the prime childbearing years overlap with medical school, residency, and fellowship training. Some defer parenthood until attendinghood due to the strenuous nature of surgical training, minimal control over one's schedule, financial insecurity, and fear of burdening colleagues by taking leave, among other common concerns. Multiple surveys report higher rates of delayed childbearing, pregnancy complications, and infertility among female surgeons.[2,3] Whereas the national average for age at first pregnancy is 23 years, the average for women surgeons is 33 years.[2] Delayed childbearing not only impacts fertility but also pregnancy risks. Advanced maternal age, defined as age 35 years or older, is associated with increased rates of preterm birth, poor fetal growth, genetic abnormalities, and neonatal mortality.[4] The stress and rigor of surgical training may compound these risks. A recent study noted that female surgeons have 1.7 times the odds of pregnancy complications compared with female nonsurgeon partners, after controlling for age and work hours.[3] Exposure to reproductive hazards in the operating room (eg, radiation, surgical smoke, anesthetic gases, and teratogenic agents) may also contribute to pregnancy complications.[5]

These data suggest that many pregnancies among surgeons should be regarded as high risk. Therefore, trainees who are pregnant require flexibility to attend regular prenatal appointments and may require work schedule modifications. Whereas many surgical

Table 1. Supporting Residents and Fellows Who Are Planning for Parenthood: Suggested Goals and Action Steps for Program Directors and Institutional Leadership

Goal	Action steps
Work collaboratively with trainees to develop plans that meet their individual needs	• On notification by a trainee of anticipated upcoming parenthood, schedule a meeting to review relevant policies (ABS, ACGME, institutional, and program) and discuss available accommodations and leave options • Collaboratively develop an individualized plan for anticipated accommodation needs, as well as contingency plans for potential complications • Uphold an open-door policy to ensure regular communication and modify the plan as needed should circumstances change
Develop and implement comprehensive policies for trainees who are planning for parenthood	• Consider use of published model policies, eg, Bamdad et al[1] • Emphasize allowance for time away from clinical duties for medical and other relevant appointments • Delineate options for schedule modifications, including reduced call and shorter shifts, with clear statement that there is no obligation to make up or pay back reduced work hours • Offer options for flexible rotations (eg, ambulatory surgery, research blocks, clinic-heavy rotations, and simulation electives) • Share responsibility with the trainee in arranging clinical coverage • Demonstrate commitment to safe patient care and trainee well-being by investing in locums physicians, moonlighters, and/or temporary advanced practice clinicians to meet short-term clinical coverage needs
Cultivate a culture of active support, awareness, and inclusion	• Ensure policies meet the needs of diverse families, including trainees planning parenthood through pregnancy, fostering, adoption, or surrogacy; single-parent, multiple-parent, and/or multigenerational households; and LGBTQ families • Normalize parenthood by actively encouraging trainees to take advantage of all available resources and accommodations • Advertise parental policies to prospective trainees and review policies annually with current trainees • Adhere to a zero-tolerance policy for pregnancy/parental discrimination and harassment
Decrease barriers to parenthood related to infertility	• Educate trainees about surgeons' increased risks of infertility and pregnancy complications through formal education • Advocate for institutional partnerships with insurance companies that provide coverage for assisted reproductive therapy and fertility preservation • Distribute information about these insurance benefits to all current and prospective trainees
Advocate for trainees' well-being and mental health needs	• Invest in formal and informal mentoring programs, including peer-to-peer and trainee-faculty • Offer trainees who experience pregnancy or infant loss or related forms of grief the opportunity to take time off and use resources for mental health support • Ensure insurance coverage for comprehensive mental health care, including perinatal mood and anxiety disorders • Facilitate confidential referrals for psychiatric/psychological treatment

Abbreviations: ABS, American Board of Surgery; ACGME, Accreditation Council for Graduate Medical Education; LGBTQ, lesbian, gay, bisexual, transgender, queer.

trainees who are pregnant report concerns about the impact of their work schedule on their health and the health of their fetus, few programs offer modifications.[6] Some surgeons need to take medical leave for pregnancy complications, while others benefit from reductions in call and/or operative load in the final trimester. Indeed, a large survey reported that surgeons who operated for 12 or more hours per week in the last trimester bore 1.6 times the odds of pregnancy complications than those who operated fewer hours.[3] Programs should support individualized modifications to meet trainees' needs.

Programs should develop comprehensive policies that detail the options available to residents who are pregnant who require medical leave or schedule modifications. Pregnancy policies should clearly describe the process for requesting reduced call or shorter shifts and specify that decreased work hours do not need to be made up or paid back. Flexible rotation options should be offered, including ambulatory surgery, research blocks, clinic-heavy rotations, or simulation electives, including preparation for required certifications, such as Fundamentals of Laparoscopic Surgery and Fundamentals of Endoscopic Surgery. Programs should foster a culture of support wherein trainees using accommodations are not misperceived as a burden and adhere to a zero-tolerance policy for pregnancy discrimination and harassment. Institutions should invest in their employees by normalizing pregnancy during training and actively supporting use of all available accommodations for their health and the health of their children. Institutions should demonstrate commitment to safe, high-quality patient care by arranging supplemental clinical coverage to avoid overworking other trainees when a resident or fellow who is pregnant needs to be removed from the call pool or reduce their operative volume. Multiple coverage options exist, including employment of locums physicians or advanced practice clinicians, moonlighting, and temporary switching from 24-hour call to night float to allow shorter shifts. Model policies have been published[1] and should be widely implemented.

ART and Fertility Preservation

Delayed childbearing among surgeons is associated with infertility challenges, thus increasing use of ART to conceive. Assisted reproductive therapy is cumbersome to navigate and expensive, as well as time consuming and physically demanding. The costs and logistical demands of this time-sensitive process can be prohibitive, especially for those still in training. Furthermore, discussion about infertility and ART often occurs later in a surgeon's career when childbearing is not optimal or even feasible. Awareness and education on infertility, treatment options, and fertility preservation early in medical school or surgical training are therefore paramount.

Insurance coverage for reproductive counseling, ART, and fertility preservation continues to fall behind the needs of surgical trainees. As only 17 states in the US have passed laws that require insurers to offer coverage for infertility diagnosis and treatment,[7] coverage heavily depends on the institutional agreement of benefits with the insurance companies. Institutions should provide prospective and current trainees with detailed information and explore options to subsidize cost or switch carriers if coverage is absent or limited.

Coverage for fertility treatment and preservation goes beyond the financial cost, as these processes are time intensive as well. Frequent monitoring leading up to retrieval or implantation procedures necessitates flexibility in scheduling. Trainees should be allowed ample sick time for medical appointments and should not be required to exhaust vacation time for this purpose. Additionally, medications must be taken on a strict schedule, with little to no flexibility in the timing of administration, which requires understanding and planning on the parts of both the trainee and their program. Open communication and confidentiality are essential. Program leadership should assist trainees in finding clinical coverage if necessary.

Fostering, Adoption, and Surrogacy

Some trainees elect to become parents through fostering, adoption, or surrogacy. All parents need time to bond with a new child, irrespective of their genetic or birthing relationship. Trainees seeking to foster or adopt will also require time prior to parental leave for the requisite appointments and travel. Those using surrogacy to build their families may wish to attend prenatal visits or require scheduling flexibility for other appointments, such as legal meetings prior to the birth of the children. There are substantial financial costs associated with adoption and surrogacy,[8] which may be prohibitive for trainees. As nearly half of surgeons in same-sex couples use adoption or surrogacy, these individuals may face disproportionately greater challenges in balancing parenthood with surgical training.

Pregnancy Loss, Grief, and Well-being

Surgeons experience pregnancy loss at more than twice the rate of the general population.[3] In addition, some pregnancy attempts through ART are not successful. Adoption attempts may also fail for a variety of reasons or require more time than expected to finalize. Some trainees may experience the death of an infant or child. Each of these events requires time for grieving in addition to time needed for medical procedures and follow-up visits. Training programs must not only promote awareness of these potential needs, but also resources for trainees who are experiencing pregnancy/infant loss or related forms of grief.

Surgical trainees who do not experience challenges with fertility, pregnancy, or adoption also require active support in their parental endeavors. The stress during surgical training is both physical and psychological and can lead to burnout and overall decreased health, affecting their ability to conceive. Programs and institutions should offer resources for dealing with stress and improving well-being. As mentorship by seasoned surgeon-mothers is strongly desired by female trainees who wish to become parents,[6] programs and institutions should invest in formal and informal mentoring programs, such as through AWS. A supportive workplace culture that fosters acceptance among colleagues as well as superiors is essential for trainees to thrive in both their personal and professional lives. Additionally, programs should be mindful that female surgeons experience increased rates of postpartum depression[3] and ensure that trainees have access to insurance that covers comprehensive treatment of perinatal mood and anxiety disorders. Programs in conjunction with GME offices should facilitate urgent psychological/psychiatric treatment when necessary and provide trainees with contact information for clinicians who offer evening and weekend appointments. Trainees must be supported in taking the time necessary to use these resources to heal.

Postpartum Support: Parental Leave, Breastfeeding, and Childcare

New parenthood, including the postpartum period and the first several months following adoption, is a stressful phase of life. New additions to the family, whether newborns or older children, come with a new set of needs that do not always integrate easily with existing family needs and dynamics. Some families face challenges with bonding and breastfeeding, which often cause high levels of distress as these experiences are generally presumed to come naturally but in fact require substantive time and dedication. Perinatal mood and anxiety disorders may add additional complexity, and nonbirthing parents can experience similar mental health conditions. Given the multitude of stressors during the sensitive time period following the birth or adoption of a new child, programs should support trainees through paid parental leave of adequate duration. On return to work, trainees may require breastfeeding accommodations and flexibility surrounding childcare needs. Suggested goals and action steps for program directors and institutional leadership seeking to support trainees with a new child are outlined in **Table 2**.[9,10]

Table 2. Supporting Residents and Fellows With a New Child: Suggested Goals and Action Steps for Program Directors and Institutional Leadership

Goal	Action steps
Develop and implement inclusive paid parental leave policies	• Consider use of published policy recommendations, eg, Altieri et al[9] • Ensure policies meet the needs of diverse trainees, including birthing and nonbirthing parents and families that include fostering, adoption, or surrogacy • Advocate for continued improvement of policies by the ABS, ABMS, and other organizations toward the WHO standard for 18 weeks of paid leave
Develop and implement comprehensive breastfeeding support programs	• Consider use of published model policies, eg, Johnson and Walsh[10] • Provide access to clean, private, conveniently located lactation rooms equipped with a sink and refrigerator • Emphasize allowance for time away from clinical duties for breastmilk expression according to the physiological needs of the trainee • Support use of wearable breast pumps in the operating room when desired by trainees
Decrease barriers to flexible, convenient, affordable childcare	• Offer on-site childcare facilities with extended and weekend hours, with preferential enrollment and subsidies for trainees • Partner with local organizations that provide emergency childcare, drop-in childcare, and sick child care, and negotiate discounts and prioritized scheduling for trainees • Administer call schedules and after-hours requirements (eg, journal club) well in advance to allow parents to schedule childcare accordingly • Extend increased consideration and flexibility to single parents and parents of children with disabilities

Abbreviations: ABMS, American Board of Medical Specialties; ABS, American Board of Surgery; WHO, World Health Organization.

Parental Leave

Lack of adequate paid parental leave is associated with delayed childbearing, use of ART, difficulty maintaining breastfeeding, increased physician dissatisfaction, and burnout.[3,6,11] Paid parental leave is beneficial not only for parents and children, but also for employers. Family-friendly policies promote gender equality and support women's participation in the workforce. Additionally, improved work satisfaction leads to lower attrition rates and reduced absences related to illness. Despite the many benefits of parental leave and World Health Organization recommendations that governments should mandate paid maternity leave for a minimum of 18 weeks, surgical trainees routinely take far less time.[12]

For decades, there was no overarching policy regarding family leave for medical trainees. As such, practices varied between specialties and among specific programs. A 2018 review revealed that less than half of specialty boards had a parental leave policy and that

details such as duration varied considerably.[13] The ABS has been a leader among specialty boards, with one of the longest-standing parental leave policies. Prior to October 2021, the ABS permitted general surgery trainees to take an additional 2 weeks off during each of 2 periods—postgraduate years (PGYs) 1 to 3 and PGYs 4 to 5—and allowed for averaging of weeks during these periods to meet minimum weeks-per-year requirements. These flexibilities enabled parents to design a family leave period of at least 6 weeks consisting of vacation and the 2 additional weeks, with the ability to take 2 such leaves during training. For several years, the ABS has also offered an option to complete the 5 years of training over 6 years, with advanced approval.[14] This 6-year option can be used for any purpose and may be particularly helpful for birthing parents with pregnancy complications and parents of children with serious medical needs.

Effective July 2021, the American Board of Medical Specialties (ABMS) instituted a groundbreaking policy requiring each of its member boards with training programs of 2 or more years' duration to develop a policy that allows its trainees to have a parental leave period of at least 6 weeks' duration that does not exhaust all their vacation time.[15] The ABMS emphasized that policies must be inclusive of all parents, including nonbirthing parents, surrogates, adoptive parents, and foster parents, and encouraged the boards to preserve a minimum of 2 weeks of vacation in addition to the parental leave period. Several months later, the ABS announced an update to their leave policy: the number of additional weeks for parental leave was increased from 2 to 4, allowing trainees to have at least 6 weeks for parental leave while preserving 2 weeks for vacation.[16]

However, the ABS also requires that residents complete 48 weeks of chief resident rotations, which by default are the clinical weeks in the final year of training, unless advanced approval is given to include PGY4 rotations.[14] This has caused strife among residents in the final year of training at the time of the policy change, who are unable to craft a 6-week parental leave period without delaying their graduation, which also requires advanced approval. Indeed, this practice fails to meet ABMS requirements that explicitly state that provision of a 6-week parental leave period should not require extension of training. The chief rotation requirement will likely lead to additional consternation in the future, as residents would have to plan pregnancies and childcare needs well in advance of their chief year to ensure sufficient time to request advanced approval. We advocate for further modification of the ABS leave policy to allow for retroactive approval of appropriate PGY4 rotations as chief rotations to ensure compliance with ABMS policy. This increased flexibility is in line with the upcoming transition away from time-based training requirements in favor of competency-based requirements. Further recommendations on parental leave are detailed in a position piece by the AWS Publication Committee.[17]

Breastfeeding

Breastfeeding provides numerous health benefits to both children and mothers, including but not limited to lower rates of infant mortality and morbidity from multiple infectious diseases, cancers, and chronic illnesses, as well as decreased maternal risk of hormone-sensitive malignancies such as breast and ovarian cancers.[18] The World Health Organization recommends exclusive breastfeeding for the first 6 months of life with continued breastfeeding after the introduction of solid foods for at least 2 years.[19] Women physicians, particularly surgeons, rarely meet these metrics. A 2017 survey of current and recent general surgery residents reported that nearly all desired to breastfeed (96%) but more than half (58%) were unable to do so for as long as they intended due to insufficient workplace accommodations.[6] The AWS recently issued a call for comprehensive support for breastfeeding surgeons that details recommendations for adequate parental leave, lactation rooms, time for pumping, and supportive workplace cultures.[20] These recommendations are reviewed below.

Breastfeeding is a complex skill that requires practice and is subject to challenges requiring medical intervention such as hypolactation and mastitis. Milk production depends on supply-and-demand physiological factors, with the first few weeks postpartum being particularly crucial for the establishment of milk production or supply. Therefore, maternity leave is an essential component of a comprehensive breastfeeding support program. Longer maternity leaves are associated with higher rates of sustained breastfeeding and the Academy of Breastfeeding Medicine recommends that workplaces and educational programs allow mothers to take the longest leave possible to establish breastfeeding.[21]

Upon return to work, women who are breastfeeding require both time and space accommodations for regular milk expression, as well as a safe, accessible place to refrigerate expressed milk. Most working women in the US who are breastfeeding express milk with an electric breast pump, which takes 15 to 30 minutes per session depending on individual and pump factors. Women who are breastfeeding need to pump every 3 to 4 hours to maintain milk production. The ACGME requires that programs provide "clean and private facilities for lactation that have refrigeration capabilities, with proximity appropriate for safe patient care" and recommends that lactation rooms include a computer and telephone for patient care purposes.[22] Surgical programs should ensure that there is a lactation room with a refrigerator near the operating rooms to minimize residents' time away from procedural training. Some trainees may elect to use wearable breast pumps in lieu of a private lactation room to optimize multitasking and/or avoid missing educational opportunities. Lactation via wearable pumps should be regarded as equivalent to breastfeeding, which is protected by federal and state laws in public spaces. Use of wearable breast pumps in the operating room is supported by the American Society of Anesthesiologists[23] and the AWS.[20]

Arguably, the most important component of a comprehensive breastfeeding support program is the workplace culture. Programs should demonstrate their commitment to supporting breastfeeding by developing and disseminating a clear written policy. Model policies are readily available for easy modification and rapid implementation.[10] Programs must support trainees in taking the time necessary to lactate and assist in arranging alternative clinical coverage if necessary during pump sessions. Policies must comply with ACGME requirements, and safe reporting mechanisms for discrimination and harassment should be established.

Childcare

While it is often stated that it takes a village to raise children, surgical training often takes parents far afield from their village, leaving a substantial gap that must then be filled with an array of primary and backup childcare options.[24] This need engenders major psychological and financial stressors. Inadequate access to reliable child-

care has been repeatedly demonstrated to be a barrier to both pursuit of and success in surgical careers. In a survey of US medical students, 75% of female students reported that they would be more interested in pursuing a surgical specialty if on-site childcare was provided.[25] Another survey reported that 63% of trainees face difficulties arranging childcare, with a need for multiple available clinicians.[26] Furthermore, while parents of both genders experience the consequences of childcare gaps, the burden is not equally shared. Childcare difficulties caused plastic surgery residents who were female to miss work twice as often as their male colleagues, and they were twice as likely to require a coresident to cover clinical duties.[27]

Hospitals should offer on-site childcare facilities with extended and weekend hours. In an analysis of general surgery resident perspectives on pregnancy and motherhood, on-site childcare was reported to "improve physician well-being, is cost-effective by reducing lost days of work, and may serve as a powerful recruitment tool for future trainees."[28] Emergency childcare, drop-in childcare, and sick-child care options are also strongly desired by and desperately needed for surgical trainees.[29] Institutional support of trainee parents should include preferential daycare enrollment, discounts to local facilities, and access to backup services, including sick-child care.[30] Yet even with subsidies, childcare costs can absorb a large proportion of trainee income, as high as 43% of pretax salary for PGY1-2 trainees.[26] Programs should support trainees in their childcare arrangements by giving ample notification of call schedules and after-hours requirements, such as journal club.

All surgeon parents should be supported in managing both training and parenting, which may require resources to be structured in a way that it remains feasible for trainees to grow their families even in situations of limited or no support (eg, logistical, financial, or psychological) from a partner or robust local support system. Programs and institutions should be sensitive to the unique needs of single parents and parents of children with disabilities, who may face greater challenges securing consistent childcare that fits the needs of their family.

Conclusions

Surgical training programs must actively support residents and fellows desiring and/or with children in order to promote healthy surgical families and continue to attract a skilled, diverse workforce. While family planning decisions are complex, trainees should not have to delay starting a family due to insufficient pregnancy accommodations, parental leave policies, or institutional support for childcare. The AWS urges all surgical residency and fellowship programs to engage in family-friendly practices that support trainees in all stages of parenthood, from family planning to pregnancy, adoption, or surrogacy, and through the postpartum period and beyond. The specific recommendations outlined in this article form the basis of a comprehensive initiative for supporting surgical families and should be used as a foundation on which programs can build to meet the unique needs of each trainee.

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Author Affiliations: Department of Breast Surgical Oncology, MD Anderson Cancer Center, Houston, Texas (Johnson); Department of Surgical Oncology, MD Anderson Cancer Center, Houston, Texas (Torres); DeWitt Daughtry Department of Surgery, University of Miami, Miller School of Medicine, Miami, Florida (Möller); University of North Carolina Department of Orthopaedics, Raleigh (Cannada); Department of Surgery, Weill Cornell Medicine, New York, New York (Nosanov); Department of Surgery, University of Florida College of Medicine, Gainesville (Riner); Department of Surgery, Northwestern University, Chicago, Illinois (Tatebe); Department of Surgery, Crozer Health, Upland, Pennsylvania (Reyna); Department of Surgery, University of Pennsylvania, Philadelphia (Altieri).

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Concept and design: Johnson, Torres, Möller, Cannada, Nosanov, Tatebe, Reyna, Altieri.
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