

Impact of a Pandemic on Early Career Women

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Reflecting on over a year and half of the COVID-19 pandemic, it is easy to enumerate how stroke physicians and researchers have been affected. To fully understand the future impact of the past year and a half on the physician workforce, though, addressing the disproportionate impact of the pandemic on early career women (ECW) is critical, especially given preexisting disparities in promotion and compensation. Here, we aim not only to describe the challenges experienced by ECW during the pandemic but to establish both low- and high-cost strategies that may help mitigate challenges and allow ECW in the field of stroke to maintain successful, fulfilling careers.

CHALLENGES OF ECW IN THE PANDEMIC

There are well-established gender disparities in career development, which are being worsened by the COVID-19 pandemic,¹ especially among ECW. Defined here as those in the first 5 to 8 years of their career as stroke clinicians or researchers, the early career time frame often overlaps with life events such as pregnancy or adoption, care of young children, or even care of older relatives. Unfortunately, the pandemic has affected many of the opportunities and resources of ECWs that are essential to career success and personal fulfillment (Figure). As resources are limited, other interconnected elements of the lives of ECWs also become disrupted, including the internal or invisible components: an individual's mental, physical, and emotional well-being.

Domestic duties are commonly cited as an example of this pandemic-related disruption. As part of gender-associated social norms, these responsibilities significantly increased for many ECWs due to a variety of factors including school and daycare closures.² As a result, other

expectations and academic achievements such as completion of publications, research, committee involvement, and clinical productivity were sidelined. Despite increasing time spent caring for children and family due to inability to outsource such responsibilities, especially early in the pandemic, clinical and academic expectations remained the same, with some ECWs even having increased workload expectations. In reality, the proportion of academic submissions from women decreased during this time frame. For example, data demonstrate a decrease in submissions to preprint servers with female first authors³ and a preponderance of men as first and senior authors of COVID-related studies.⁴ For many ECWs, wellness, fitness, and personal health practices were sacrificed in exchange for time to be clinically productive or to care for family. Boundaries between work and home disappeared. Overall, the burden of the pandemic has affected the physical, mental, and emotional aspects of ECW.¹

Specific challenges for faculty in the subspecialty of stroke are worth noting, with the potential to disproportionately affect ECW. For example, some hospitals transitioned faculty to new clinical roles such as neurointensivists covering COVID-19 units or telehealth. Such transitions were especially challenging for some in the setting of working from home while caring for young children. For ECW neurologists, emergency physicians, neurointensivists, and neurointerventionalists caring for stroke patients in-person, anxiety around COVID-19 exposure with limited personal protective equipment was high, given the subsequent risk of exposure to infants and young children. This may have been particularly true for pregnant stroke clinicians, due to the paucity of data regarding pregnancy and neonatal outcomes in COVID-19. For ECW neurointerventionalists, additional challenges included financial

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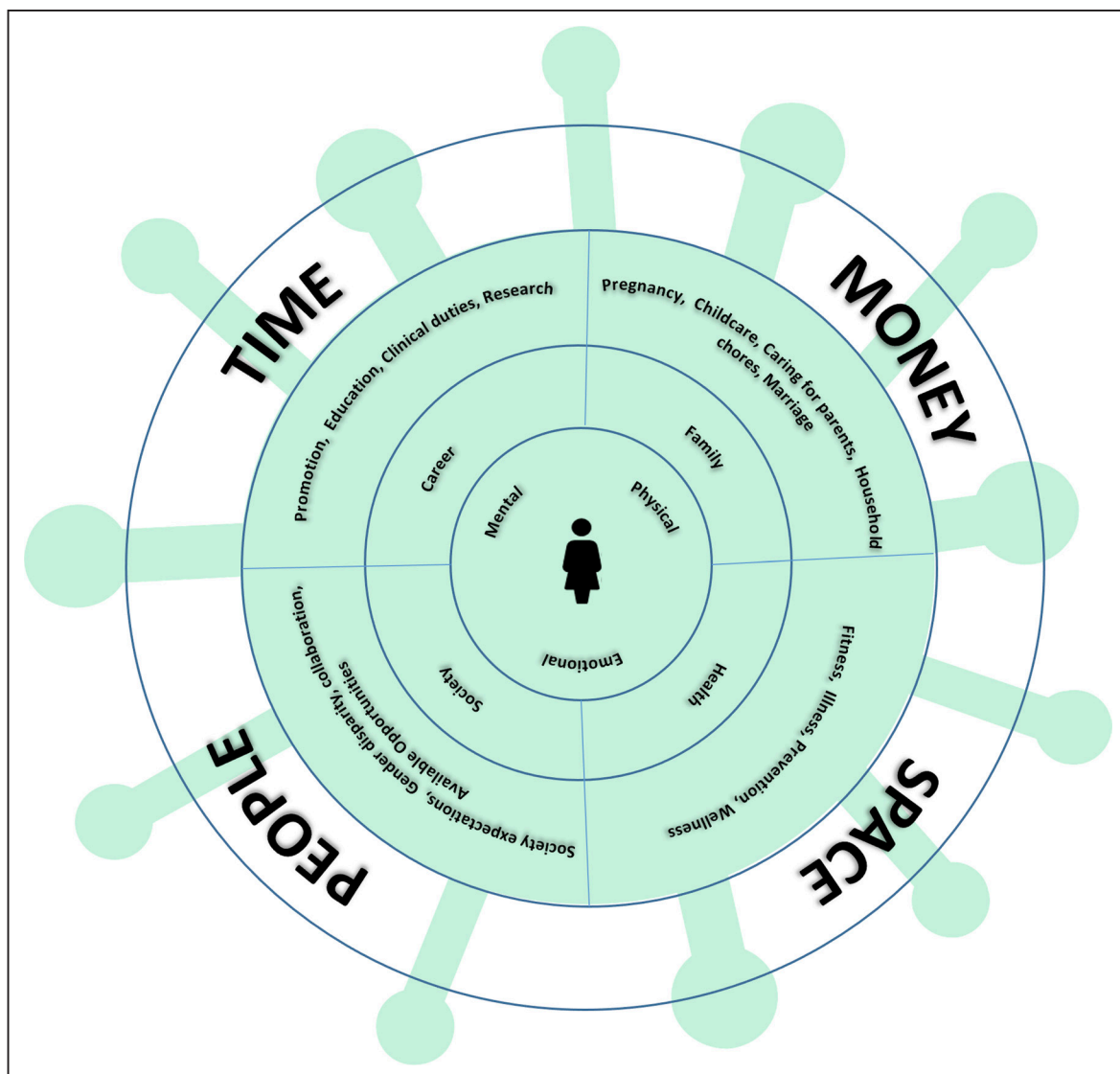


Figure. The impact of the pandemic on the expectations, needs, and resources of early career women (ECW).

The Figure shows the interconnected nature of the key components of internal/personal well-being (innermost layer), external personal and professional needs and expectations (middle two layers), and resources (outermost layer) needed and utilized by ECW to achieve expectations and fulfill needs.

strain due to staffing shortages, limited surgical instruments, declines in hospital stroke volumes, and halting of elective endovascular procedures and clinics early in the pandemic,⁵ resulting in variability in salaries dependent on relative value units or clinical productivity, grants, or clinical trials. Reduction in salaries is of particular concern to ECWs who already face disadvantages due to salary inequities at baseline.⁶ Further, ECWs were affected more by salary variability as they were able to work less due to domestic responsibilities including managing kids' virtual learning.²⁷ Paused enrollment for clinical trials, suspended laboratory studies, and unfamiliarity with new billing practices during the pandemic all contributed to overall decreases in productivity for both stroke clinicians and basic scientists. Again, though decreased productivity may affect a range of faculty, this is of special concern to ECWs who already

face inequities in promotion timelines.⁸ Many ECWs in the field of stroke have administrative duties in their stroke center as well, adding an additional layer of competing obligations given changes in stroke protocols related to staffing changes, infection risk, visitor restrictions, and reduced ability to communicate with family members.

Breastfeeding while working has been another challenge specific to ECW. Initially, the lack of information and guidance about the safety of breastfeeding and pumping at work while seeing COVID-19 patients, as well as the role of personal protective equipment, was not clear. Showering at work before pumping or breastfeeding is typically not feasible for clinicians, adding to the uncertainties about the safety of pumping in this setting.

Finally, additional challenges for some ECWs include greater domestic responsibilities experienced by single

mothers and exacerbated by school closures, as well as challenges for ECW caring for elderly parents.²

MITIGATION STRATEGIES TO COMBAT CHALLENGES FOR ECW

In light of all the challenges described above, increased attention has been paid to disparities in the academic medicine workforce over the past year. As we envision the stroke field in a postpandemic world, implementing strategies to support ECW on their career trajectories with a goal of true equity should be at the forefront. Here, we describe multilevel strategies to address the challenges outlined above. We recognize that settings and resources vary, and thus we specifically include examples of both high- and low-cost strategies, some of which do not require large financial investments. Additional specific strategies pertaining to each level can be found in the [Data Supplement](#).

INDIVIDUAL LEVEL

One of the ways that the pandemic has positively affected ECW at the individual level is by facilitating more virtual networking opportunities, increasing the probability that one can collaborate with other physicians and scientists remotely and increasing academic productivity. Other benefits of virtual platforms include increasing national and international speaking opportunities, as well as helping to promote well-being through a reduction in expected travel. Given increasing opportunities for virtual meetings and remote work, though, ECW should continue tactics to manage boundaries including creating a separate home workspace, considering the use of a virtual background to protect privacy, creating a schedule that accounts for individual recovery time, and establishing email boundary times.⁹ Video conferencing also has the potential to reduce productivity, especially in settings of extended meetings or an expansion of the number of meetings each day, the tendency to multitask during virtual meetings, and overall, less uninterrupted work time.^{10,11} Advocating for ourselves and for each other via social media platforms is also critical and can increase visibility of ECW in spite of less face-to-face networking.

DEPARTMENTAL LEVEL

Potential low-cost mitigation strategies include increased mentorship and sponsorship of ECW to help increase visibility of their academic work. As part of structured mentorship programs, mentors may also help faculty to choose academic projects that align with their career missions and promotion trajectories, while being deliberate about minimizing large amounts of uncompensated work, service, or mentorship, especially early in their careers. Departmental leadership or mentors may increase sponsorship of ECW

and work to facilitate local, regional, and national speaking opportunities. Providing opportunities for career coaching may also be considered. Other low-cost priorities include encouraging boundaries for virtual meeting times, avoiding early evening meetings when childcare may be a priority, normalizing a cameras-off mode for video calls when convenient, and promoting other policies that promote work flexibility such as continued options for virtual meeting attendance post-pandemic. Professional development activities should continue to be supported financially including professional allowance funds to attend virtual stroke conferences.

Other mitigation strategies may be higher in cost but have the potential to be highly valuable for the careers of ECW. Such strategies include increased administrative support to facilitate meetings and collaborations, helping to free up time for other academic work. Another higher cost mitigation strategy is the provision of protected time for ECW building careers in research or administration. Though internal funding of academic time can be costly, potential solutions include partnering with institutions to provide short-term career development awards or grants for faculty early in their careers. Additionally, departments should mentor ECW toward career development grants that provide some external funding and establish a foundation for independent funding in the future. For ECW with administrative roles in the department, faculty should be compensated in the form of protected time or stipends, and department leaders should critically evaluate the structure of department-supported protected time to evaluate whether time is equally distributed across all faculty including ECW.

With regard to clinical roles, departments should ensure that physician backup systems are robust and allow for compensated time off for personal or family illness without having to make up missed clinical time—a visible issue during the pandemic. For ECW, other adaptations might include streamlining clinical staffing models for stroke call to reduce the number of faculty in-house for a given stroke call when possible, distributing work equally across all faculty, and building flexibility into the system to allow for increased remote work for ECW when childcare shortages or other unexpected family obligations occur such as providing clinicians the option of telehealth clinics or incorporating telehealth as a backup option in cases of childcare issues.

INSTITUTIONAL LEVEL

The role of institutional leaders in helping ECW maintain work satisfaction while experiencing the effects of the pandemic on their academic careers and their families cannot be overstated. In terms of promotion, there should be an institutional commitment to working with ECW facing barriers to promotion including loss of academic productivity or scholarship related to disruptions in research that became more difficult to conduct due to

the pandemic. Stopping the clock policies or extension of promotion timelines should be carefully considered and applied if needed, though strategies utilizing structured mentorship to keep women on their promotion timelines should instead be prioritized to mitigate further disparities in advancement. Institutions should take into account pandemic-related activities as part of the promotion portfolio, adjusting promotion metrics for the years affected by the pandemic, and providing administrative assistance with portfolio preparation. Other institution-level mitigation strategies include education on intersectionality and how it can increase the impact of work-life issues brought about by the pandemic (detailed in Table I in the [Data Supplement](#)).

Finally, institutions may consider strategies to support and extend the bandwidth of ECW for succeeding in their work including stipends for backup dependent care, partnerships with vendors that may provide discounted services such as childcare and cleaning and thus facilitate work-life balance, and psychological support systems that are readily available for faculty.

NATIONAL OR INTERNATIONAL ORGANIZATION LEVEL

Mitigation strategies at the national or international organization level include ensuring equal distribution of speaking opportunities at conferences for women and underrepresented in medicine, disbursement of dependent care grants to support women's participation at virtual meetings, onsite childcare, and lactation spaces for in-person meetings, and normalization of having children in the background of virtual and in-person meetings. Other strategies that national specialty organizations and funding agencies should consider include wellness initiatives, grant mechanisms for women in science, adequate representation of women on editorial boards and as first and senior authors on publications, and administrative and no-cost grant extensions.

We have seen increased awareness of both preexisting gender disparities and the disproportionate burden of COVID-19 on careers of ECW in the last year. Within the subspecialty of stroke, novel solutions to COVID-19-related challenges have included adaptations to clinical staffing, increased use of telehealth, virtual stroke conferences and speaking opportunities, and changes to research approaches to balance infection risks. These workforce changes have illuminated ways in which ECW can be supported from the national level all the way down to the departmental and individual levels. As our workforce continues to evolve over time, a renewed focus on equitable promotion, advancement, and compensation must be a priority. We suggest a framework to achieve this.

ARTICLE INFORMATION

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Supplemental Material

Online Table I

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