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System-level recommendations for improved wellness for gynecologic oncologists: A Society of Gynecologic Oncology Review

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HIGHLIGHTS

- Burnout in gynecologic oncologists is linked to practice and incompletely addressed by individual-level interventions.
- Institution-level changes include changes in work environment, decreased administrative barriers, and promotion of wellbeing.
- Additional changes include optimized electronic medical record use and support of a diverse workforce.
- Implementation and regular evaluation is critical to successful intervention with specific attention to at-risk groups.

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ABSTRACT

Burnout and its negative sequelae are a persistent problem in gynecologic oncology, threatening the health of our physician workforce. Individual-level interventions such as stress management training, physical activity, and sleep hygiene only partially address this widespread, systemic crisis rooted in the extended work hours and stressful situations associated with gynecologic oncology practice. There is an urgent need for systematic, institution-level changes to allow gynecologic oncologists to continue the crucial work of caring for people with gynecologic cancer. We present recommendations for institution-level changes which are grounded in the framework presented by the National Plan for Health Workforce Well-Being by the National Academy of Medicine. These are aimed at facilitating gynecologic oncologists' well-being and reduction of burnout. Recommendations include efforts to create a more positive and inclusive work environment, decrease administrative barriers, promote mental health, optimize electronic medical record use, and support a diverse workforce. Implementation and regular evaluation of these interventions, with specific attention to at-risk groups, is an important next step.

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1. Burnout in Gynecologic Oncology

More than half of United States (US) physicians experience burnout, which has increased in recent years and is characterized by emotional exhaustion, depersonalization (i.e. lack of empathy for or negative attitudes toward patients), and feelings of decreased personal achievement [1–3]. In 2019, the World Health Organization (WHO) classified burnout as an "occupational phenomenon," not a medical condition, and stated that this results from "chronic workplace stress that has not been successfully managed." Burnout is an occupational syndrome. Important symptoms of burnout according to the WHO include energy depletion/exhaustion, increased mental distance from one's job, and reduced professional efficacy [4]. For gynecologic oncologists, risk factors may include time pressure, lack of control over tasks at work, long working hours, shift work, lack of clinical support personnel, and secondary trauma.

As noted in the Society of Gynecologic Oncology (SGO) 2020 State of the Society Survey (SoSS), burnout has increased among US gynecologic oncologists (GO) since 2015, and rates of depersonalization have doubled [5]. This survey was administered in August 2019 and thus did not account for anticipated worsening of symptoms during the COVID-19 pandemic, indicating that current rates may be even higher than currently reported. For example, in a survey study of US health care workers conducted between July and December 2020, 24% of physicians planned to leave their profession in the next two years and nearly 31% planned to reduce their hours [6]. Rates were even higher among allied medical staff, including 40% of nurses and 33% of APPs who planned to leave their practice within two years, signaling additional burden on physicians and allied staff who remain in patient care.

Mitigation of burnout is critical since it has major impacts on individual, patient, and healthcare systems. Persistent burnout makes individuals more susceptible to medical problems, such as cognitive impairment, diabetes, and cardiovascular disease [7,8]. Although the WHO does not classify burnout as a medical condition, it may share some pathophysiology with depression and contributes to poor sleep patterns [9,10]. A recent systemic review and meta-analysis revealed that physician burnout is associated with career disengagement and poorer quality patient care; thus, burnout mitigation is also in the best interest of patients and institutions. The burned-out physician is more likely to leave their job. Physician recruitment is very costly and can cost an institution from $250,000 to $1 million [11]. National costs of physician burnout, including turnover and reduced productivity, are approximately $4.6 billion [12]. Physicians experiencing burnout have lower job satisfaction, are twice as likely to be involved in patient safety incidents, have lower professionalism, and lower patient satisfaction scores [13].

With the increasing prevalence of burnout and the serious downstream consequences it has on both healthcare professionals and the community, large physician organizations are recognizing the urgent need to address this pervasive issue. In 2023, the American Medical Association (AMA) made a pledge to lead a "national effort to solve the growing physician burnout crisis" by "working to eliminate the dysfunction in health care" [14]. The American College of Surgeons (ACS) recently formed a Coalition on Surgeon Well-Being to leverage representation from many different specialties to examine evidence-based approaches to support surgeons [15]. While these efforts are valiant and represent a shift in the mindset toward physician well-being, GO encounter intensified stressors such as facing surgical complications and providing end-of-life care, and merit specific attention.

The SGO Wellness and Executive Committees recognize the urgent need to further examine the source of burnout in GO and to investigate methods to prevent and mitigate this debilitating condition. We evaluated the evolution of burnout within our Society and how it affects membership, including by gender. We know that despite the heightened awareness of burnout in the medical community, in our profession, burnout rates have increased. Also of concern is the disparity in burnout between genders in GO. In the 2020 SoSS, both female GO and advanced practice providers (APPs) reported higher rates of emotional exhaustion while female GO singularly experienced higher rates of self-reported mental health symptoms and resistance to seeking professional mental health services [16].

Some of the most beloved and unique aspects of GO, such as longitudinal relationships, opportunities to offer complex surgical care, and the availability of ever-growing cancer therapeutics, can also be stressors or sources of secondary trauma. We also straddle employment by and involvement in both obstetrics and gynecology departments and cancer centers, with responsibilities to each. Therefore, the experience of burnout is potentially different than that of other physicians and thus worthy of a tailored solution. We know that efforts aimed at the individual, while well-intentioned, put the responsibility for wellness on the clinician and ignore the systems-level issues that contribute to and exacerbate burnout and are only part of the solution. The National Academy of Medicine (NAM) Action Collaborative on Clinician Well-Being and Resilience released a national plan that addresses seven priority areas focusing on strengthening the healthcare workforce well-being and restoring the health of the nation [13]. The aim of this paper is to explore methods to implement system-based changes that promote wellness among GO, including opportunities to incorporate the National Plan for Health Workforce Well-being developed by the NAM [13].

2. Incorporating the Priorities of the National Plan in GO

In October 2022, the NAM launched its National Plan for Health Workforce Well-Being, a document detailing the concrete steps to achieving its vision "that patients are cared for by a health workforce that is thriving in an environment that fosters their well-being as they improve population health, enhance the care experience, reduce costs, and advance health equity, therefore achieving the quintuple aim" [13]. Authored and reviewed by a multifaceted group of healthcare and government leaders, this plan identifies seven priority areas and makes a call to collective action for change. The NAM Clinician Well-Being collaborative put foundational pieces into place which will

allow continuation of a national well-being initiative [17]. In the following sections, the seven priorities and proposed corresponding action plan for GO is outlined and summarized in Fig. 1.

2.1. Create and Sustain Positive Work and Learning Environments and Culture

The first of the priority areas in the National Plan for Health Workforce Well-Being is to "Create and Sustain Positive Work and Learning Environments and Culture." Goals are included within this priority area that highlight the path forward and speak specifically to the importance of leadership recognizing the importance of worker well-being. This urgent need was highlighted in the SGO 2020 SoSS where approximately 70% of US GO reported that their work schedule "never," "occasionally" or "sometimes" leaves enough time for personal life or family [16,18]. This Survey report emphasizes the need for institutions to provide real system-wide solutions, such as those presented in the following sections of this paper, that can partner with personal-level wellness efforts to address this critical and urgent need successfully.

A sub-goal of the first priority of the National Plan is "increased retention and decreased turnover of health workers," with an action step that is to "invest in appropriate and flexible staffing plans that allow for safe patient care, including needed backup." [13] Improved work hours and increased predictability of schedules via strategies such as clinic templating, use of block time, and delegation of work to support staff should be encouraged if we are to mitigate burnout in our profession successfully. Additionally, use of vacation and sick time should be encouraged with coverage provided, without work demands encroaching during time off, and without need to "make up" for vacation or sick time. Call requirements vary widely by institution and GO practice size, with many GO covering complex benign gynecologic and emergency obstetric surgical cases, and some smaller practices reporting being on call for 20 weeks a year [5]. For institutions with smaller GO practices that are unable to implement "post-call" days, efforts must be made to consider alternative sources of backup surgical support (e.g., general surgery, urology, colorectal surgery) and call support (e.g. internal medicine, medical oncology, surgical oncology, or intra-departmental APPs) to mitigate burnout.

As reported in the 2020 SGO SoSS, the average number of new patients seen per month per GO was 50, and the number of return patients was approximately 200 [5]. While these numbers are self-reported and thus may be overestimated, they provide a good starting point for discussions regarding clinical burden. Assuming two days in clinic per week, a GO would need to see six to seven new patients and 25 return patients each day. We posit that a reasonable new and return visit should be 45 and 20 min respectively, leading to a 14 h clinic day with no breaks in this scenario. Clearly this is not a sustainable model for physicians or their support staff. For those who work with learners in their clinical setting, capacity may be increased that allows more patients to be seen or those with more complex medical conditions. However, the additional time for teaching must also be accounted for in these academic settings and is limited by the number of faculty and staff available for a given clinic.

To effectively maintain the clinical volume encountered by most GO with less strain on the physician, institutional support is required. Right-sized staffing recommendations do not yet exist for specialty care and vary by geography, practice setting and institutional norms. Thus, each institution may need to test different staffing ratios, then monitor satisfaction and outcomes [19]. For example, when the University of Colorado expanded medical responsibilities with increased training and changed the medical assistant to physician ratio from 1:1 to 2.5:1, productivity increased and burnout reduced from 53% to 13% [20].

Ineffective outpatient scheduling results in patient, physician, and staff dissatisfaction and may impact patient safety [21,22]. The development of an SGO working group representing the varying practice models could develop a "typical" or "reasonable" schedule to be presented to institutions. This group could also lead the effort to define the minimum amount of needed support (APP, nurse, allied health staff) based on volume and patient complexity. Operating room (OR) considerations require attention to maximize efficiency and high utilization, and it is critical that GO have input regarding details such as preferred block time, staffing, and supplies. Improving the well-being of surgeons during busy operating days includes easy access to healthy food and improved ergonomics such as transport teams or equipment for patient lifting, mats for standing and appropriate equipment sizes.

Physician compensation models can also contribute to burnout. Pure RVU-based models and other productivity considerations correspond with higher rates of burnout [5]. Since provision of chemotherapy or targeted therapeutics typically is not recognized in RVU reporting, provision of full scope gynecologic cancer care may not be recognized or reimbursed, although it increases complexity and work. Nevertheless, for those who provide these services, providing the full scope of gynecologic oncology care is likely an important factor when choosing their practice. In RVU-based model environments, if not rewarded for non-clinical productivity, physicians are effectively penalized for any time spent on alternate activities, including committee assignments, leadership, academic endeavors, backup support for difficult cases, and community-building within departments. Participation in leadership, research, outreach, or other service activities benefitting the institution were utilized to determine bonus payments for only about 20% of GO in 2020 [5].

Between 2015 and 2020, there was a 22% decline in the amount of time spent on clinical medicine (81% vs 63%). This "non-productive" work, though critical to the function of a healthy organization, is not

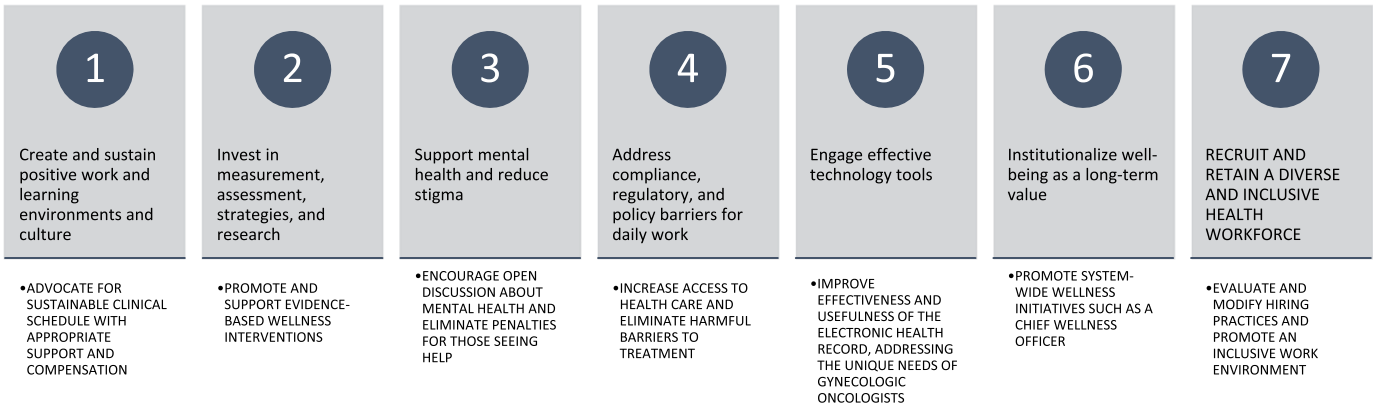

Fig. 1. 7 Priority Areas in the NAM National Plan for Health Workforce Well-Being.

consistently rewarded unless administrations are vigilant in recognizing the intangible return on investment from these activities. Academic achievement may also be recognized in academic promotion structures, but in many institutions service work tends to be undervalued relative to grants or scholarship. Bonus structures tied to patient satisfaction scores (encountered by >10% of GO in 2020) may additionally create undue stress, competitiveness, and misplaced attribution of value, since these scores commonly do not represent care quality [23]. Institutions should recognize that a healthy institution requires more than solely clinical productivity and website-published satisfaction scores, and more universally factor this into income; for example, with the utilization of education and research value units to recognize academic contributions [24].

2.2. Invest in Measurement, Assessment, Strategies, and Research

The second of the priority areas of the National Plan is to "invest in measurement [of burnout], assessment [of interventions], strategies [to improve burnout], and research [regarding burnout]" to promote healthcare worker wellbeing. Evidence-based approaches are critical to guiding improvement [13]. This includes use of validated burnout assessment instruments to assess not only individual-level burnout but also as efficacy tracking tools for burnout interventions [13,25]. In order to carefully consider and address the contribution of gender- and race-based discrimination to burnout for physicians with identities underrepresented in medicine, sufficient demographic information to evaluate disproportionate burnout should be tracked as well [26]. For transparency and to encourage the upward flow of new ideas, data regarding tracked metrics should be shared, and feedback should be encouraged [25]. Combined, non-punitive, prospective tracking of burnout, safety outcomes, and patient satisfaction could provide further evidence of the importance of healthcare worker well-being to high-reliability organizations [13,27]. Institutions should consider utilizing exit interviews as a way to gain more honest feedback from clinicians who are leaving their positions, particularly regarding the work environment, without fear of retaliation.

Passed in 2022, theDr. Lorna Breen Health Care Provider Protection Act, which aims to reduce and prevent suicide, burnout and mental and behavioral health conditions among health professionals, established a grant program to provide additional support for these goals via increasing funding for programs promoting healthcare worker well-being [28]. Additionally, the Department of Health and Human Services (DHHS) is tasked to make formalized, evidence-based recommendations for interventions to improve healthcare worker well-being and start a campaign to encourage healthcare workers to obtain mental health and substance use treatment and solicit grant applications from institutions or professional organizations implementing mental health interventions for healthcare professionals [28,29]. The recommendations made by DHHS following the Lorna Breen Act may also fulfill the National Plan's goal of a national registry of evidence-based interventions and epidemiologic tracking [13,28]. However, since passage of this bill, <1% of US hospitals have received grants and does not yet consider other health care settings outside of hospitals. To achieve the intended goals of The Lorna Breen Act, additional legislative reauthorization and funding is needed to fully enact this bill. We encourage institutions and SGO members to support legislation, contribute data, reference these resources, and promote implementation of evidence-based interventions. These interventions may yield financial dividends if they show similar results to the Cleveland Clinic "Coaching for Care Giving" project, which saved the organization $133 million in physician retention [30]. Through this peer-to-peer program, physician coaches were trained to help other physicians navigate challenges at work [30]. The focus of this program is active listening, used to help identify personal and system improvements [30].

2.3. Support Mental Health and Reduce Stigma

A third priority of the National Plan is to "support mental health and reduce stigma" [13]. In GO, 41% of respondents had a positive depression screen on the 2020 SGO SoSS, up from 33% in 2015 [5]. What may be most concerning is the very low rates of mental healthcare utilization- only 11% of respondents sought treatment [5,16]. More than half of respondents in 2020 reported reluctance to seek psychological help, highlighting the likely prevalence of stigma and self-stigma among our colleagues [16,31]. The National Alliance on Mental Illness recommends several actions to fight stigma: open discussion and honesty about mental health and treatment, education, compassion, recognition of equity between mental and physical illness, and avoidance of self-stigma [32]. Conversations normalizing and promoting mental healthcare within GO are sorely needed. These may occur in a structured fashion or organically within a psychologically-safe work environment or through organizations such as the SGO [13]. An opt-out program including psychological counseling in a bundle of multiple wellness interventions for surgical residents was highly valued by trainees (3.58 out of 5), whereas an opt-in program with counseling recommended based on survey responses was met with poor engagement (83 of 526 eligible respondents were referred for mental health care, with only 14 follow up participants) [33,34]. We support the implementation of opt-out counseling programs for GO and trainees based on this evidence and the stigma that seems pervasive in our specialty.

Our colleagues who seek treatment remain affected by a dearth of available mental healthcare professionals, as well as time to access treatment [13,31]. Lack of mental healthcare availability and flexibility creates difficulty incorporating treatment into the GO workday, and stigma may prevent GOs from advocating for this access for themselves. While appointments, time, and coverage may each exist on their own, finding all three requires cultural shifts to promote care. Many of us would likely recommend to our patients to ask for the time and treatment that they need, and the same should extend to ourselves and our colleagues.

Invasive licensing board questions regarding mental health add career and licensing concerns to social stigma [35]. Questions about past psychological treatment or hospitalization likely reveal little about a physician's current ability to provide safe patient care [35,36]. The Foundation of State Medical Boards (FSMB) made recommendations in 2018 for only relevant mental and physical health questions to be included on state licensing applications, consistent with the Americans with Disabilities Act, but with limited implementation [35,37]. We join the FSMB in recommending more responsible questioning by the licensing boards. A more useful role for licensing boards would be to hold healthcare employers accountable for the environments they create, since burnout, and not mental health issues, have been shown to impact patient outcomes.

The National Plan recommends that institutions improve the supply of mental health professionals via improved pay, debt forgiveness, and better referral pathways [13]. While the pipeline of available caregivers is in development, the National Plan also encourages the use of professional coaches, faith leaders, and peer supporters [13]. In a 2023 survey of SGO members regarding unaddressed mental health needs, lack of treatment access was commonly reported [31]. Concerns included difficulty with payment or insurance coverage, confidentiality concerns, appointment availability, and lack of time for appointments within the workday [31]. In the same survey, telemedicine availability was cited as a facilitator of care receipt [31], an avenue that is also supported by the National Plan [13]. Additional recommendations include optimizing and improving the availability and utilization of clinicians that work outside of the GO's institution to improve confidentiality, payor coverage parity with other medical conditions, increased mental healthcare reimbursement, decreased prior authorization burden, schedule flexibility,

and tracking of the utilization of institutional mental health programs [13]. We encourage the implementation of these recommendations to improve treatment access, together with stigma reduction, to improve its acceptance.

2.4. Address compliance, regulatory, and policy barriers for daily work

Goal four of the National Plan is to address the barriers to care created by compliance and regulatory policies. GO have a uniquely laborious connection to prior authorization requirements, since they are essential for surgery and many cancer therapeutics. Financial or insurance-mediated roadblocks to timely management create patient discomfort and stress, worsening moral distress for the physician. Different payors have inconsistent requirements for prior authorization, preventing clear communication with patients during their initial visit. The moral distress of patients being forced to wait for a potentially curative surgery or being asked to assume financial responsibility for surgery places enormous stress on patients and their surgeons. Current day chemotherapy shortage discussions can add to this, contributing to moral injury. Recent therapeutic advances in gynecologic cancer treatments continue to benefit our patients but insurance policies are slow to update policies to allow reimbursement of these agents, creating additional frustration for both patients and their physicians. Automating these authorizations or having dedicated qualified clinical staff is a piecemeal solution. The American Hospital Association has advocated for insurance utilization of validated clinical decision tools, which should eliminate the need for many authorizations [38].

Streamlining compliance requirements is another sub-goal of the National Plan. System-wide annual education regarding safety, health, environment, and risk management abounds, but much of this does not apply to physicians. This time may be better used for clinical, academic, or wellness activities. In lieu of system-wide compliance module requirements, this time could be better spent in focused education that addresses surgical and oncologic skills.

2.5. Engage effective technology tools

Goal five of the National Plan is to engage technology tools effectively. The technology tools we interact with daily, and the popularization of artificial intelligence, have the potential to streamline medical practice, but they commonly are not being used to sufficiently benefit clinicians [39]. Healthcare practitioners typically prefer more time facing the patient and less time on the computer. GO often access the electronic medical record (EMR) in a unique fashion, utilizing surgical schedules, billing, and documentation, outpatient documentation and ordering, and oncology modules for chemotherapy and clinical trials. Because there is such variety within the clinical practice of GO, many physicians necessitate access to several different EMR systems; however, these systems may not easily communicate information among other programs. Our teams need adequate training in all areas and with all updates, and the additional time needed must be allowed within the clinical schedule. Additionally, constant use of EMR software allows for highly tailored and proactive intervention. Systems should collect data on time spent in the EMR and develop metrics for typical times for task completion, then create automatic interventions for when metrics are exceeded. Tracking those metrics after system updates or changes would confirm increased efficiency. The most and least efficient clinicians can also be identified via EMR use patterns and targeted for training. With a proactive strategy, an in-house team could use technology to help clinicians in highly individualized ways and promote strategies to eliminate redundancy of work. Standardization of EMR use across healthcare systems would also increase the efficiency of cross-institution EMR use, making care coordination between institutions less cumbersome.

2.6. Institutionalize well-being as a long-term value

The sixth priority of the National Plan is to "institutionalize well-being as a long-term value." A proactive chief wellness officer should facilitate this service-specific work. System-wide wellness initiatives are the backbone of supporting healthcare practitioners, but additional flexibility is needed to address the unique needs of subspecialists. Trainee wellness is now part of the American Council for Graduate Medical Education Common Program Requirements, and the SGO has created the Fellowship Wellness Curriculum to support fellows and satisfy those requirements. Burnout rates change during career transitions, and interventions should be tailored appropriately. When uncommon stressors arise, a chief wellness officer can lead a response. Daily wellness rounds were started by a dedicated multidisciplinary taskforce at Rush University Medical Center, led by their wellness officer, in response to the COVID-19 pandemic. This is an example of what a mature, well-supported, and leadership-integrated wellness program can bring to an institution, especially during a crisis [40]. Long-term, additional initiatives to address and institutionalize well-being will be needed within gynecologic oncology as our specialty faces current and future challenges. This ongoing work can be potentially addressed through ongoing efforts of SGO such as through the Wellness Committee or an appointed task force.

2.7. Recruit and Retain a Diverse and Inclusive Health Workforce

To "recruit and retain a diverse and inclusive workforce" is not only one of the seven priority areas of the National Plan, but is also interwoven in several other priority areas as crucial goals [13]. This will require changes in recruiting practices for GO, and also for each step prior to a staff position, such as medical schools, Ob/Gyn residencies, and GO fellowships. Examples of these changes include changing the wording to make job descriptions and advertisements more attractive to diverse applicants, diversifying interview panels, and changing website and institution-placard messaging to prioritize inclusion [41,42]. For example, a conference room typically used for interviewing that houses photos of past GO may inadequately represent the current diversity of the workforce. Changing this to diversity-focused messages or photography both in in-person and virtual interviewing settings can speak volumes about an institution's priorities to recruit and retain a diverse GO workforce. Focusing on the "culture-add" instead of the "culture-fit" in the recruitment process will also be an important part of diversifying the healthcare workforce. Diversity, equity, and inclusion (DEI) has also emerged as a key driver of retention in healthcare. A true belief that the institution's leadership "demonstrates a commitment to workforce diversity," "treats employees with respect," and that "coworkers value individuals with different backgrounds" is critical to retention. Representation without support or inclusion is not sufficient [43]. Additionally, investment by institutions in retention efforts such as performing Press Ganey Pulse Surveys and transparently sharing engagement metrics with all employees may allow feedback without repercussions. This would aid in efforts to understand and improve exclusionary environments and policies [44].

3. Future Work is Needed to Target Specific Groups

The disparate impact of burnout on women is well documented and is not unique to GO [45]. Several known factors seem to contribute to the relationship between female gender and burnout. Impostor phenomenon, experienced more commonly by women, was shown to correlate with burnout and suicidal ideation [46]. In the Coping with COVID survey, female healthcare workers were 22% more likely to experience childcare stress, which was highly correlated with burnout, reduced hours, and anxiety and depression [47]. Women are also shown to experience more mistreatment or discrimination in the past year by patients or families (OR 2.33), as were racial and ethnic minority physicians (OR

Table 1
Summary of proposed institutional or systems-level interventions to promote GO wellness.

Priority area	Recommendation
1. Create and sustain positive work and learning environments and culture	• Schedule predictability • Adequate support staff • Clinic templating to reflect patient complexity • Encourage use of and fully cover vacation time • Encourage use of and fully cover sick time • OR predictability to include block time, staffing, supplies, turnover time • Consider non-GO sources of surgical support for OB/GYN departmental colleagues • Reimbursement for "backup" coverage • Recognition and reimbursement of non-clinical activities that strengthen the organization • Avoidance of recognition and reimbursement based on patient satisfaction scores
2. Invest in measurement, assessment, strategies and research	• Consistent institutional use of validated burnout interventions as intervention tracking tools • Consistent institutional tracking of burnout in clinicians of identities underrepresented in medicine • Exit interviews for honest assessments of the work environment • Apply for wellness intervention and research funding through DHHS • Clinician coaching programs
3. Support mental health and reduce stigma	• Encourage open discussion about mental health and treatment • Reinforce equity between mental and physical illness in employee benefits, sick time, and discussion of well-being • Opt-out counseling program • Flexibility within clinical schedules to allow mental health appointments • Support SGO and FSMB in recommending more responsible questioning by licensing boards • Improve supply of mental health professionals via improved pay, debt forgiveness, better referral pathways • Create pathways for coaches, faith leaders, peer supporters to provide physician support • Telemedicine mental health service coverage from employer-based health insurance • Include mental health professionals outside the institution in insurance plans
4. Address compliance, regulatory, and policy barriers for daily work	• Insurance utilization of validated clinical decision tools • Streamlined compliance requirements for clinicians
5. Engage effective technology tools	• Adequate training for GO in all related EMR modules (OR, clinic documentation/orders, chemotherapy, clinical trials, inpatient setting, billing) • Track metrics non-punitively and target most and least efficient clinicians for optimization of EMR use • Standardize EMR use across institutions
6. Institutionalize well-being as a long-term value	• Designate a chief wellness officer • Target interventions to staff at times of transition
7. Recruit and retain a diverse and inclusive health workforce	• Change recruiting practices to include job descriptions or advertisements attractive to diverse applicants, diversify interview panels, change messaging to prioritize inclusion • Focus on "culture-add" instead of "culture-fit" • Employee surveys to identify and improve exclusionary environments and policies
Interventions focused on women	• Facilitate flexible childcare arrangements • Identify and address workplace harassment, gender bias and discrimination • Promote mentorship and sponsorship

2.33 for Black physicians), and mistreatment or discrimination carried an increased odds of burnout (OR 1.27–2.20, depending on severity) [48]. In the 2020 SGO SoSS, 20% of US female GO reported sexual harassment at work, compared to 2% of male GO. Nearly 40% of the harassers were a colleague, followed by a patient, administrator, supervisor, other, or trainee [5]. Mental health surveys of GO have not focused on post-traumatic stress, which can be sequelae of harassment or assault [49]. Other proposed etiologies of poorer burnout, mental health and suicidal ideation in women physicians include lower pay, ongoing responsibility as the "CEO" of the home, nursing pushback or decreased assistance from staff, and spending more time with patients or taking on their psychosocial burdens [50,51]. Data demonstrate improvement in wellness when interventions target 4 areas: 1. Addressing barriers to professional satisfaction and work-life integration; 2. Recognizing and reducing gender bias; 3. Promoting and supporting mentorship and sponsorship; 4. Formulating policies and procedures that facilitate care for children and other family members [45]. In a study of Austrian academics, "family-supportive supervisor behaviors" moderated the relationship between work stress and exhaustion [52,53]. Patagonia's on-site childcare provides an example of the resultant expanded retention, trust, and female leadership, attractive to both workers and employers [54].

The intersectionality of gender and race on occupational burnout is less well understood. In a cross-sectional study published in 2020, underrepresented racial/ethnic physicians (i.e., Hispanic/Latinx, non-Hispanic Black, and non-Hispanic Asian physicians) were less likely to report burnout compared to non-Hispanic white counterparts [55]. This is corroborated by a 2020 review of burnout studies addressing race/ethnicity, the majority of which showed no difference or a protective effect in racial/ethnic minority group physicians [56]. Data in medical students were more mixed, but one study did find increased burnout in medical students exposed to discrimination, prejudice or isolation [56]. Criticism of this work highlights the small sample sizes insufficient to adequately determine associations between race/ethnicity and burnout [57]. A 2019 study of general surgery residents identified increased burnout scores and suicidality rates in trainees experiencing race- or gender-based discrimination, though racial/ethnic data of survey participants were not reported [26]. Ongoing evaluation of the interplay between race, ethnicity, gender, and the work environment merits further investigation. It is unclear if physicians with more than one underrepresented racial, ethnic, gender, or sexual identity increases rates of burnout in an incremental fashion. Patients have improved outcomes when cared for by race and gender concordant clinicians, and diversity is a sign of a healthy and high performing institution [58–60]. DEI initiatives are critical interventions for the well-being of the healthcare system at large.

Within the SGO survey, the number of racial/ethnic minorities remains too small to conduct a robust analysis to determine the impact of race and gender on the wellness of GO. This information could be better understood by collaborating with other surgical specialty groups to further delineate the extent of the burnout problem in the 'House of Surgery' but also brainstorm innovative solutions aimed at harm reduction for physicians. The ACS, recognizing the need to foster wellness for all surgeons, has formulated a national Coalition for Surgeon Well-being of which SGO is a part. Ideas that would support surgeon wellness include the creation of a national "support group for surgeons" that

could share difficult outcomes to lessen the stigma and isolation that comes with these events.

4. Conclusions

Here we present specific recommendations (summarized in Table 1) for systemic changes to improve burnout and mental health in GO based on the framework provided by the National Plan from the NAM. Further work is needed to implement and evaluate the proposed interventions and to focus on specific at-risk groups.

CRediT authorship contribution statement

M.Y. Williams-Brown: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **R.M. Summey:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **A. Newtson:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **W. Burke:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **T. Turner:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **P. Sabu:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **B.A. Davidson:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Data curation, Conceptualization. **G. Glaser:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

Dr. Davidson reports other from GSK and Onc Live, outside the submitted work.

All other authors have nothing to disclose.

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