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The Effect of a Structural Wellness Intervention on ID Fellows and Faculty

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ABSTRACT

Introduction: Physician burnout is prevalent amongst Infectious Diseases (ID) physicians and trainees in the United States. There is limited data assessing the impact of structural interventions in reducing burnout among medical professionals.

Methods: The multifaceted intervention included increased faculty presence over the weekend and faculty support during the week. ID fellows were surveyed before and after the intervention and faculty were surveyed after the intervention using the Maslach Burnout Inventory for Medical Personnel and additional questions regarding wellness and time for education. Pre- and post-intervention responses were compared. Free response answers were analyzed to determine major themes. Metrics of clinical efficiency were recorded before and after intervention as well.

Results: 100% of fellows (5) and 70% of faculty (7) participated in surveys. Fellows identified consult volume and pager interruptions as the most common reasons for dissatisfaction prior to the intervention. Following the intervention, 80% of fellows noted improved subjective consult volume (despite service census being slightly larger), as well as other improvements on qualitative analysis of free text responses. Fellows' post-intervention MBI-HSS(MP) mean emotional exhaustion scores significantly improved (3.3 to 2.3, $p = 0.009$), while metrics assessing depersonalization (2.4 to 1.9, $p = 0.07$) and personal accomplishment (4.5 to 4.9, $p = 0.06$) were not significantly changed. There were no significant differences in survey responses between post-intervention fellows and faculty. For service level metrics post-intervention, we less frequently needed to hold consults overnight until the next day (mean 2.1 to 1.1, $p = 0.04$).

Conclusion: A structural intervention to the ID consultation service was associated with reduced emotional exhaustion amongst fellows and improved perception of clinical volume. Although there was increased workload for faculty there was not a significant difference in markers of burnout or quality of life comparing solely post-intervention responses.

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INTRODUCTION

Chronic stress associated with emotionally intense work demands can result in a state of burnout [1–3]. Physician burnout is a work-related syndrome within the healthcare setting involving emotional exhaustion, depersonalization, and a sense of reduced personal accomplishment. This has become increasingly prevalent over the last few decades within the United States healthcare system and abroad [4]. Burnout has been associated with adverse effects on patients, the healthcare workforce, costs, and physician health. Rates of this phenomenon exceed 50% in studies of both physicians-in-training and practicing physicians [4–8]. Beyond physician experiences, one survey-based study found >96% of all respondents reported some degree of burnout among all facets of healthcare [9]. Among medical trainees, one large national survey found approximately 50% were experiencing burnout symptoms, and around 80% high stress [10].

Infectious Disease (ID) physicians specifically have historically had elevated levels of burnout with studies showing >50% prevalence [11, 12]. Primary drivers of this syndrome included lack of adequate compensation and support staff for maximum productivity in job-specific roles [9, 11]. This has led to impediments in attracting trainees to train in Infectious Disease and increasing risk of the future of this workforce [13, 14]. This phenomenon has been shown to be exacerbated by the SARS-CoV-2 pandemic, among both ID and non-ID physicians alike. Trainees are not immune to the pressures that attendings experience, especially during a global infectious disease outbreak. The pandemic has shown how vital the role of both the ID physician and ID trainee are to the global health system [15–19].

The Accreditation Council for Graduate Medical Education (ACGME) now requires programs to formally promote well-being amongst trainees [20]. Prior to the COVID-19 pandemic, studies had suggested that individual wellness interventions

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such as self-care and mindfulness lead to improved well-being and reduced rates of burnout [21–23]. However, during the COVID-19 pandemic, these personal interventions have not been found to be as effective, which may have to do with social isolation. This finding may also relate to additional tasks trainees had to complete beyond typical clinical duties in the setting of an international health emergency [24, 25]. Institutions that offered greater scholarly opportunities, educational experiences and ancillary support reported greater well-being and resiliency in the trainees [24, 26, 27]. Addressing structural contributors within a medical education system, as opposed to addressing personal techniques to overcome burnout, may be a more successful path to address the root of the problem. Utilizing this rationale, we designed a fellow-led and fellow-centric wellness intervention amid the COVID pandemic to reduce symptoms of burnout within our ID training program.

METHODS

Participants

This project surveyed the five adult and combined program medicine and pediatric Infectious Disease fellows at the University of Chicago Medical center present for the 2021 through 2022 academic year. All fellows rotate on the General Infectious Disease (GID) service multiple times per year, but not all faculty rotate on GID. Service specific metrics were recorded on weekdays by the Infectious Disease fellow on GID at the conclusion of the workday, both pre- and post-intervention. Although initially conceived as a fellow-centric quality improvement project, ID section administration requested a one-time "pulse check" after the intervention was started to ensure there were not significant differences between faculty and fellow responses. Therefore, surveys were sent to the ten adult ID faculty who rotated on our primary GID consult service following the intervention. There was no specific incentive given to any subject for survey completion. At the time of submission of this manuscript all but one author (in a dual program) had graduated from the fellowship.

Setting

The University of Chicago is an 811-bed, tertiary Academic Medical Center with 1051 residents and fellows [28]. During the 2021-2022 academic year and preceding years, two adult ID fellows were recruited each year. Medicine-Pediatrics combined ID fellowships have been offered as allowed. Pre-intervention there was a GID service with one ID fellow, one ID attending and typically 1-3 Medicine Residents, an Immunocompromised Host (ICH) ID consult service with one ID fellow and one ID attending, and our 3rd Consult service, which consisted of two advance practice providers supported by a third ID attending who typically did not see patients independently prior to the intervention. Pre-intervention, typically one Medicine resident and one ID attending covered Saturdays, and one ID fellow covered Sundays, who staffed patients remotely with the respective attendings. The advanced practice providers and third service attendings were not present in the hospital on weekends prior to the intervention. For the purposes of this project, all data represents opinions on or metrics from the GID service alone. The authors (five fellows and our fellowship program director) had a series of meetings prior to the first survey being sent. These meetings were held to determine what was needed as part of an intervention to improve fellow wellness and patient care on the GID service. In this way the intervention, detailed below, was fellow-generated, and directed.

Tools

All ID fellows were sent a baseline electronic survey through REDCap, completed anonymously, which included the Maslach Burnout Inventory for Medical Personnel (MBI-HSS(MP)) – a validated method to assess healthcare worker burnout, questions about work life balance, satisfaction with the GID service, and ability to teach (specifically teaching medicine residents or medical students) while on service [2, 29, 30]. A license for the relevant number of surveys administered for this project was purchased from Mind Garden for the MBI. Apart from the MBI, the authors were not able to find other validated tools to answer the questions they felt germane to the project, so additional survey questions were developed in house. There were additionally free response questions posed on the survey regarding the respondent's opinion of issues related to the GID service. A copy of the survey (less the MBI questions, which are unable to be reproduced given they are under copyright) is provided in the supplementary files.

Briefly, for "education versus service balance" respondents used a visual analogue scale (0-100) to assess their views of balance of education (lower values) to service (higher values) while on GID consults. Respondents were asked to rate their "satisfaction" with GID on a visual analogue scale from 0-100 with lower values as dissatisfaction and higher values as satisfaction. Emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA) are metrics used in the Maslach Burnout Inventory for Medical Personnel (MBI-SS(MP)). Questions answered as part of the MBI-HSS(MP) fall into one of these three categories, and contribute to their respective category score (EE, DP, PA). The MBI-SS(MP) was scored according to the licensor's instructions. Higher values for EE and DP correspond to more frequent negative experiences, and higher values for PA mean more frequent positive experiences. All survey items were developed prior to intervention for this Quality Improvement project.

Three months following the intervention, the same survey was sent to the same fellows, with the additional free response field asking if they had noticed changes since the intervention. Following the intervention, the same survey was also sent to ID faculty (who provide coverage of GID) to assess differences between fellow and faculty responses to the organizational changes.

GID fellows recorded metrics of the service itself (number of consults, duration of rounds, etc.) through a shared electronic document at the end of each weekday before and after the intervention.

Outcome Measures

Outcome measures included change in mean scores of domains on the MBI, changes in wellness metrics, difference in mean MBI and wellness metrics between post-intervention

faculty and post-intervention fellows. Other outcome measures included analysis of the qualitative data and change in mean service level metrics following intervention. All analyses were of equal value to the authors and sample size was inflexible (could not be increased); therefore, a single primary outcome was not delineated in advance nor were power calculations performed.

Intervention

The initial survey to the fellows was sent in December of 2021. Beginning in January of 2022, the structural intervention began and has continued since initiation (**Figure 1**). Notably, unknown to the authors during the planning phases of this project, the intervention coincided with the Omicron wave of COVID-19 in our locale. The intervention was multi-faceted and included having the third service attending independently start to see consults in the afternoon or respond to pages during GID rounds on weekdays (typically 12-3 pm M-F). With the intervention, the GID attending and ICH attendings both provided in-house coverage on Saturdays along with the Medicine resident. On Sundays, as part of the intervention, the 3rd service attending also began providing in-house coverage and supervision in addition to the already present ID fellow. In consultative care, we do not have specifically defined "shifts" as in Emergency Medicine or some other specialties, as the day is "finished" when the work (seeing patients, documentation, communication with other services) is done. Typically, weekend responsibilities are from 8am-3pm with variability depending on the number of new consults and complexity of care required.

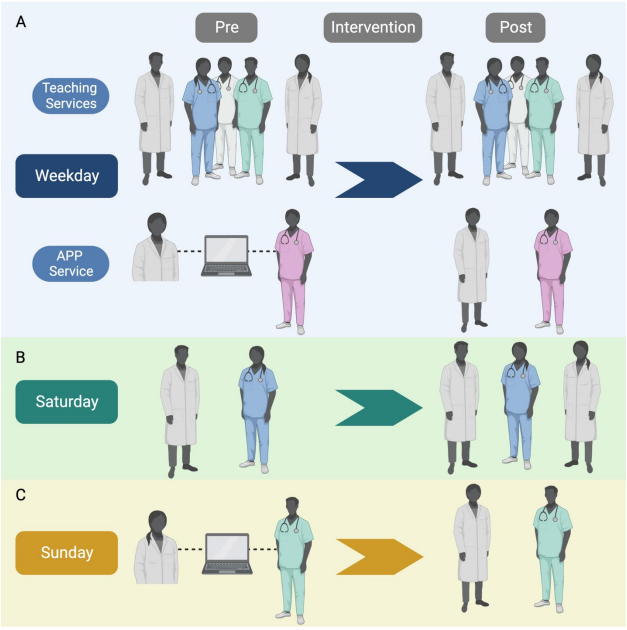

Figure 1 Intervention Structure: Schematic diagram of the structural intervention. Providers with white coats represent attending physicians. Providers in colored scrubs represent fellows (teal), residents (blue), and advanced practice providers (pink). The computer represents virtual or telephone rounds, all other rounding was in person. (A) Weekday structure was unchanged on the teaching services. The advanced practice provider (APP) service structure changed by adding an attending from 12-3pm to answer pages and / or see patients. (B) Saturday structure was changed to add another attending physician to the pre-intervention resident and attending team. (C) Sunday structure changed from virtual rounds with an attending and fellow to in-person rounds with work sharing.

Globally, the roles and responsibilities of the 3rd service attending increased during Sundays and weekday afternoons, and the roles and responsibilities of the ICH attending increased on Saturdays. These changes were undertaken to assist in decompressing the busy GID service, improving care coordination and patient safety over the weekend to weekday transition.

Statistical Methods

Descriptive statistics, paired (pre-post) t-tests, two sample (two different groups) t-tests or the Wilcoxon signed rank tests were used as appropriate for normality of data and group(s) being compared. REDCap datasets were exported into STATA 17 for analysis. The authors reviewed all free text responses as a group to determine major themes or domains for coding of free-text responses. All prose responses were reviewed, thematic saturation was reached. The authors then met together to code all responses into the major concepts abstracted from the responses.

Ethics

This project received Quality Improvement designation through our medical center, which provides exemption from IRB review. This determination deems the project as not human subjects research. Institutional policies on QI designation versus human subjects research can be found here: https://hdsi.uchicago.edu/qi-determination/

Consent Statement

This project had a QI designation, the intervention was done at a departmental level, and all survey responses were anonymous and voluntary. Consent to participate was presumed based on completion of the survey. No incentives were provided for survey completion.

RESULTS

Fellows Quantitative Data

All five ID fellows present during the 2021-2022 academic year completed both the pre and post intervention surveys. There was not a significant difference comparing the fellows' opinions before and after the intervention of education compared to service balance on GID nor their satisfaction with the service, although the mean scores for satisfaction and education balance both improved slightly (from 75.8 to 69.4 for education balance, favoring more education compared to service, and from 48.4 to 61.2 on the scale for satisfaction with GID service, reflecting a higher rating) (**Table 1, on page 8**). There was additionally no significant difference following the intervention comparing the fellows' ability to complete home responsibilities or time to teach (specifically to teach medicine residents or medical students) while on service although the distribution of frequencies for these items in the post-intervention arm did appear to improve slightly (Table 1). The ID fellows' post-intervention Maslach Burnout Inventory-HSS(MP) mean emotional exhaustion (EE) scores significantly improved (3.3 to 2.3, $p = 0.009$). This reflects a decrease in the frequency of the fellows' experiences of emotional exhaustion following the intervention. Frequency of personal accomplishment and depersonalization improved, but not significantly (Table 1).

Fellows Qualitative Data

Assessing free text responses, consult volume (frequency and number of consults) was the first most common domain cited as a reason for dissatisfaction with the GID service (100% of responses). However, volume was also described as the first most improved item since intervention in the follow up survey, alluded to in 80% of fellows' responses (**Table 2, on page 8**). Interruptions (such as from paging, e-mails or other communication from primary services, external facilities, and outpatient providers) was found to be the second most frequent domain present when respondents were asked to identify issues with the clinical service, present in 60% of responses (Table 2). Following the intervention, the second most frequent domain present in responses to what had changed with GID was that there was improved coordination of care, especially during the weekend to Monday transition (40% of responses). Mondays are faculty switch days, and therefore typically a more prolonged day.

Notable quotes from fellows regarding what had changed following the intervention included: "[Weekend to Monday] patient distribution [is] more structured, and there is less work left over [from the weekend to Monday], " "I've noticed that patient care itself on weekends has become more involved, and in my mind may make for better outcomes with the increased attending presence," and "I feel this change has made the service better and enhanced my learning experience," among others. All free text responses are provided as a supplement (edited, as indicated by brackets to ensure privacy and understanding to the reader).

Service Level Metrics

Assessing service level metrics before and after the intervention, we found beneficial changes in that there was a slight increase in the number of Medicine Residents present on a daily basis following intervention (which was not part of the intervention, $p < 0.0001$) and that we less frequently held consults overnight until the next day (mean 2.1 to 1.1, $p = 0.04$) (**Table 3, on page 8**). However, following the intervention, the mean list size of GID increased (18.5 to 21, $p < 0.001$) and the duration of work in hospital (length of rounds, length of paging out recommendations) and at home also increased slightly (Table 3). There were no significant differences in the number of new consults, curbsides (direct to provider telephonic patient advice without formally consulting on a patient or providing documentation), or the number of pages received per day. Assessing our hospital's COVID-19-specific census, it was peaking during the Omicron wave at 200-250 patients admitted in late December 2021 and early January 2022, just at the time that our wellness intervention was deployed (**Figure 2**).

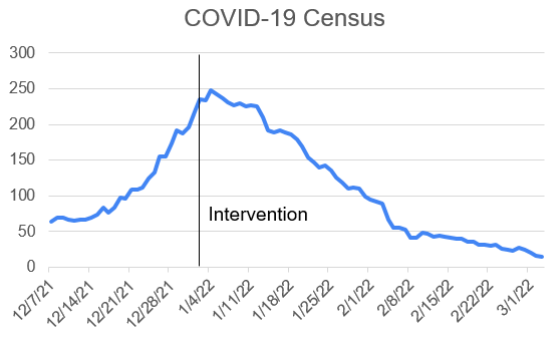

Figure 2 COVID-19 Hospital Specific Census: Graphical representation of the daily hospital COVID-19 census and the time of the studied intervention.

Faculty Qualitative Data

Seven of ten clinical faculty who rotated on the GID service during the 2021-2022 academic year completed the survey following the intervention. They were also asked to comment on issues with the GID service from their perspective. Mirroring the ID fellows' responses, clinical volume was the most often cited domain in faculty responses as being problematic (in 43%) (**Table 4, on page 9**). This was followed by issues relating to interactions with house staff and students, including work ethic and professionalism, as well as dissatisfaction with scheduling—with either domain present in 29% of faculty responses. For reasons which are unclear, only one faculty member responded to the question assessing their thoughts on what had changed following the intervention, and their response contained allusions to improvement in clinical volume, care coordination, safety, and wellness—which mirrored fellow responses. All free text responses, edited (indicated by brackets) to ensure privacy and understanding to the reader, are now provided as a supplement.

Faculty Quantitative Data

In addition to the free text responses, all seven faculty respondents completed 100% of the other survey responses assessing well-being and service-education balance and the MBI-SS (MP) questions. Comparing faculty responses post-intervention to fellow responses post-intervention, we did not see a significant difference in satisfaction, service balance, burnout inventory domains or other well-being assessments (**Table 5, on page 9**). Despite this, the distribution of faculty responses did seem to indicate that they had more time to complete responsibilities at home or teach while on service (Table 5).

DISCUSSION

Burnout amongst healthcare providers and trainees is an active area of investigation internationally with many institutions seeking effective interventions to prevent / ameliorate this issue. The herein presented prospective, before and after study, demonstrates that a house-staff centered and driven structural intervention which addressed key overarching organizational contributors to burnout reduced the frequency of emotional exhaustion amongst ID fellows at our program, and improved the perception of clinical volume. Notably, ID faculty at our institution saw increased clinical work because of this intervention, but importantly, their survey responses assessing wellness and satisfaction following the intervention did not differ significantly from the fellows' responses. Our work appears to agree with a previously published one-time survey evaluating wellness in post-graduate medical education which demonstrated that increased work hours, clerical duties, and less education were

associated with increased likelihood of burnout while trainees with less clerical burden were less likely to experience burnout and depression [31]. The success of this intervention also underscores the value of trainee-led projects in the management of their own wellness. The fact that this intervention and the assessments were developed by those with "boots on the ground" likely contributed to the outcome. Recently there has been a movement to incorporate medical trainees as leaders in the development of local and national steering programs, as well as those seeking to bolster wellness, educational assessment, and diversity / inclusion—this project's design reinforces that initiative [32, 33].

A framework to describe contributors to healthcare worker wellness, consisting of key domains and sub-strategies has previously been developed in the Stanford Model for Professional Fulfillment [34]. The intervention described in this paper addresses the key domain of institutions developing a culture of wellness through enhancing control over a provider's schedule and activities and increasing teamwork through a more equitable distribution of clinical duties. This allowed for increased clinical efficiency through more even distribution of volume, supporting healthy lifestyle behaviors by attempting to reduce hours worked (especially at home), and providing peer support via increased supervision on weekends. This study supports the idea that wellness interventions targeting these domains and sub-strategies may be effective in reducing objective measures of burnout, though further research is still needed.

During the study we found that following the intervention there was evidence of increased clinical volume for our GID service (increased list size, longer work periods), which was not anticipated given additional clinical assistance provided as part of the project. This may have related to the Omicron surge of COVID that was contemporaneous to the intervention (more new late consults were being seen the same day as opposed to being bumped to the next day, or perhaps additional trainees on the service required more supervision). Despite these markers of increased clinical volume, the free text and other survey responses offered by the ID fellows demonstrated clear improvement in their experience of rotating on the GID service post-intervention. This demonstrates that the presence of perceived increased support may improve the subjective experience of the fellow physicians by improving their perception of, and their attitudes toward work—even in the setting of increased infectious disease volume. A previous study in healthcare workers found that increased perceived social support may impact satisfaction, resilience, and depression (all in a positive manner)—which is consistent with our findings [35].

Since the intervention began in January of 2022, we have maintained a somewhat similar model of additional support for the GID team (and especially the GID fellows) during afternoon rounds and on weekends. Four of the fellows who participated in this project have since matriculated to faculty. Those remaining as faculty at our institution will continue to contribute to this intervention as part of their clinical service.

LIMITATIONS

This study had a relatively small sample size making statistical inference challenging. There may have been insufficient subjects to detect other significant effects of the intervention and the sample size may have introduced other errors to the analysis. In this quality improvement study, sample size is fixed and therefore cannot be adjusted to potentially increase power. More confidently ascertaining the effectiveness of structural interventions on provider wellness would require performing similar interventions at multiple institutions to increase sample size and reduce risk of bias from personnel or practices at a single site, which could be considered in the future.

Assessments following the intervention were also conducted fairly rapidly, and at a single point in time. The short duration of follow-up is also a limitation in that the persistence or extinction of effect long-term cannot be inferred. However, further analysis at our program related to the intervention detailed above cannot be completed due to other changes that have occurred to the structure of the program which would impact wellness (number of fellows, faculty, changes to schedules), and the graduation of most of the authors.

Additionally, pre-intervention faculty responses were not assessed, so we are unable to determine if attending wellness in response to the intervention improved or declined. We found no significant differences in fellow compared to faculty responses at the time point just following the intervention. However, it is possible that faculty had a higher level of wellness at baseline due to factors such as scheduling, autonomy and pay.

We would also note that although there was no incentive provided for survey completion, the subjects were aware that they were being assessed, which may impact results. Additionally, subjects may have presumed that promising results from the intervention could result in a beneficial change in the program, potentially making their professional and personal lives easier. There is therefore a theoretical possibility that positive bias in the post-intervention fellow responses could have been induced by the study design.

CONCLUSION

This study suggests that dedicated structural interventions may positively impact health care trainee wellness. Although objective service level metrics did not improve with our intervention, the fellows' subjective experience of volume and emotional exhaustion did, which led the authors to believe that the simple presence of additional clinical support may be helpful in combatting burnout. Larger studies of similar interventions should be undertaken over a longer period of follow-up to confirm these findings.

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Table 1: Analysis of Fellows' Survey Items

Survey Item or MBI-SS(MP) domain	Mean Pre-Intervention (SE)	Mean Post-Intervention (SE)	p-value
Education vs. Service Balance	75.8 (1.07)	69.4 (4.86)	.28
Satisfaction	48.4 (9.90)	61.2 (3.55)	.22
Emotional Exhaustion (EE)*	3.3 (.30)	2.3 (.10)	.0089*
Depersonalization (DP)	2.4 (.40)	1.9 (.47)	.065
Personal Accomplishment (PA)	4.5 (.19)	4.9 (.21)	.0568
	Frequency Pre (n=5)	**Frequency Post (n=5)**	
Frequency of Ability to Complete Home Responsibilities			.16
– Never	1	0	
– Once per two-week rotation	0	1	
– Once per week	4	1	
– A few times per week	0	3	
How often do you have time to teach on service?			.16
– Once per two-week rotation	2	0	
– Once per week	2	2	
– A few times per week	1	3	

MBI-SS(MP): Maslach Burnout Inventory for Medical Personnel; SE: standard error of the mean. * Indicates statistical significance ($p < .05$).

Table 2: Qualitative Analysis of Fellows' Free Text Survey Responses

Prompt 1: What is the biggest problem with General Infectious Disease Consult Service (pre/post)?		
Key Domain (examples)	**Frequency (n=10)**	**Percent (%)**
Volume (frequency/number of consults)	10	100
Interruptions (paging)	6	60
Efficiency (ability to complete tasks in timely manner)	2	20
Schedule (number/frequency of days worked)	2	20
Interactions with residents (work ethic, team management)	2	20
Education (insufficient time to teach or receive teaching)	2	20
Coordination of care (redirecting pages or assigning consults)	1	10
Academic pursuits (insufficient time for research)	1	10
Fatigue (lack of energy after work)	1	10
Prompt 2: What has changed since intervention initiated (post)?		
Key Domain (examples)	**Frequency (n=5)**	**Percent (%)**
Volume (less clinical work)	4	80
Coordination of care (more organized Sunday to Monday transition)	2	40
Safety (better outcomes from weekends)	1	20
Education (enhanced my learning experience)	1	20
Wellness (less stressful)	1	20

Prompt 1 was given to the 5 fellows before and after the intervention leading to 10 responses. Prompt 2 was given to the 5 fellows only following intervention.

Table 3: General Infectious Disease Service Level Metrics

Variable	Pre-Mean (SD)	Post-Mean (SD)	*p*-value
Residents	1.4 (0.7)	2.5 (0.6)	<0.0001
Max List Size	18.5 (3.2)	22 (2.9)	0.0001
New Consults	5.2 (2.0)	5.1 (1.6)	0.76
Bumped Consults	2.1 (2.1)	1.1 (1.5)	0.04
Billed Consults	7.9 (4.3)	6.8 (2.0)	0.19
Curbside Consults	2.6 (1.6)	2.3 (2.0)	0.5
Rounds End (time)	3:22pm (85 mins)	3:55pm (95 mins)	0.03
Last Rec (time)	4:15pm (107 mins)	5:00pm (79 mins)	0.002
Work from Home (hrs)	0.5 (0.6)	0.9 (0.6)	0.016
Pages	16 (4.9)	18 (5.4)	0.09
COVID-19 Census	116 (52)	109 (78)	0.65

Daily measures of key metrics measuring consult service work volume and efficiency. Max list size is the maximum number of patients on the service, bumped consults is the number of consults not seen until the following workday, curbside consults is the number of consults where recommendations were given without seeing the patient, Last Rec is the time of delivery of the last recommendation.
SD: standard deviation

Table 4: Qualitative Analysis of Faculty Free Text Survey Responses

Prompt 1: What is the biggest problem with General Infectious Disease Consult Service (pre/post)?		
Key Domain (examples)	**Frequency (n=7)**	**Percent (%)**
Volume (frequency/number of consults)	3	43
Interactions with residents (work ethic, team management)	2	29
Schedule (number/frequency of days worked)	2	29
Interruptions (paging)	1	14
Efficiency (ability to complete tasks in timely manner)	1	14
Education (insufficient time to teach or receive teaching)	1	14
Coordination of care (redirecting pages or assigning consults)	1	14
Academic pursuits (insufficient time for research)	0	0
Fatigue (lack of energy after work)	0	0
Prompt 2: What has changed since intervention initiated (post)?		
Key Domain (examples)	**Frequency (n=1)**	**Percent (%)**
Volume (less clinical work)	**1**	**100**
Coordination of care (more organized Sunday to Monday transition)	**1**	**100**
Safety (better outcomes from weekends)	1	100
Wellness (less stressful)	1	100
Education (enhanced my learning experience)	0	0

Table 5: Analysis of Survey Items (Faculty vs Fellows Post-Intervention)

Survey Item or MBI-SS(MP) domain	**Mean Fellow Post (SE)**	**Mean Faculty Post (SE)**	***p*-value**
Education vs. Service Balance	69.4 (4.86)	64 (7.41)	0.59
Satisfaction	61.2 (3.55)	69.3 (6.66)	0.36
Emotional Exhaustion (EE)	2.3 (.10)	2.6 (0.43)	0.60
Depersonalization (DP)	1.9 (.47)	1.1 (0.26)	0.14
Personal Accomplishment (PA)	4.9 (.21)	5.1 (0.21)	0.65
	Freq Fellow Post (n=5)	**Freq Faculty Post (n=7)**	
Frequency of Ability to Complete Home Responsibilities			0.33
– Never	0	0	
– Once per two-week rotation	1	0	
– Once per week	1	2	
– A few times per week	3	4	
– Daily	0	1	
How often do you have time to teach on service?			0.82
– Once per two-week rotation	0	1	
– Once per week	2	1	
– A few times per week	3	4	
– Daily	0	1	

MBI-SS(MP): Maslach Burnout Inventory for Medical Personnel; SE: standard error of the mean

Appendix A

Example of survey questions less the Maslach Burnout Inventory

Please use the slider to opine on the current balance of service to education while on General Infectious Disease consults.	Education — Equal balance education and service — Service *(Place a mark on the scale above)*
Please rate your current satisfaction with General Infectious Disease consults	Horrible — Things are ok — I love it *(Place a mark on the scale above)*
While on General Infectious Disease consults do you have sufficient time to complete your non-work responsibilities (such as childcare/family responsibilities, cooking, cleaning, grocery shopping).	◯ Never ◯ Once per two week rotation ◯ Once per week ◯ A few times per week ◯ Daily
While on General Infectious Disease consults do you have sufficient time to teach the residents or students	◯ Never ◯ Once per two week rotation ◯ Once per week ◯ A few times per week ◯ Daily
What is the single biggest issue with General Infectious Disease consults?	_____
If you are taking this survey for the second time (IE Spring 2022), what changes have you noticed to service since 1/3/2022?	_____
What date did you complete this survey?	_____