

Introduction

- Infectious Disease physicians have historically had high levels of burnout¹. This phenomenon has likely been exacerbated by the SARS-CoV-2 pandemic². Trainees are not immune to the pressures that attending experience, especially during a global infectious disease outbreak.
- The Accreditation Council for Graduate Medical Education now requires programs to formally promote well-being amongst trainees³. However, many superficial wellness interventions have not been found to be effective⁴.
- We created a structural intervention to improve ID fellow well-being and conducted a pre-post study demonstrating effectiveness.

Methods

- We built an intervention restructuring our ID clinical services, including increased attending presence on weekends and afternoons to help distribute clinical volume (**Figure 1**).
- A survey with the Maslach Burnout Inventory for Medical Personnel (MBI-HSS(MP))⁵ and other wellness metrics (Tables 1,2) was completed by our 5 ID fellows before and after the intervention. Consult volume and clinical efficiency (Table 3) were also assessed before and after the intervention.
- Descriptive statistics, paired t-tests or Wilcoxon signed-rank tests were used as appropriate for normality. Free text qualitative survey responses were coded into key domains until saturation was reached for analysis.

Table 1 – Analysis of 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	

Results

- The ID fellows' post-intervention Maslach Burnout Inventory-HSS(MP) mean emotional exhaustion (EE) scores significantly improved [3.3 to 2.3, p-value .0089], which reflects decreased frequency of EE. Personal accomplishment and depersonalization improved, but not significantly. Survey items assessing time for education, education/service balance, satisfaction and wellness all improved, but were not significant (**Table 1**).
- Assessing free text responses, consult volume was the most frequent domain cited as a reason for dissatisfaction, but was also described as the most improved item since intervention (**Table 2**).
- Regarding the clinical efficiency of our general infectious disease fellows, the number of consults seen daily and hours spent in the hospital did not improve following the intervention, and volumes actually appeared higher (**Table 3**).

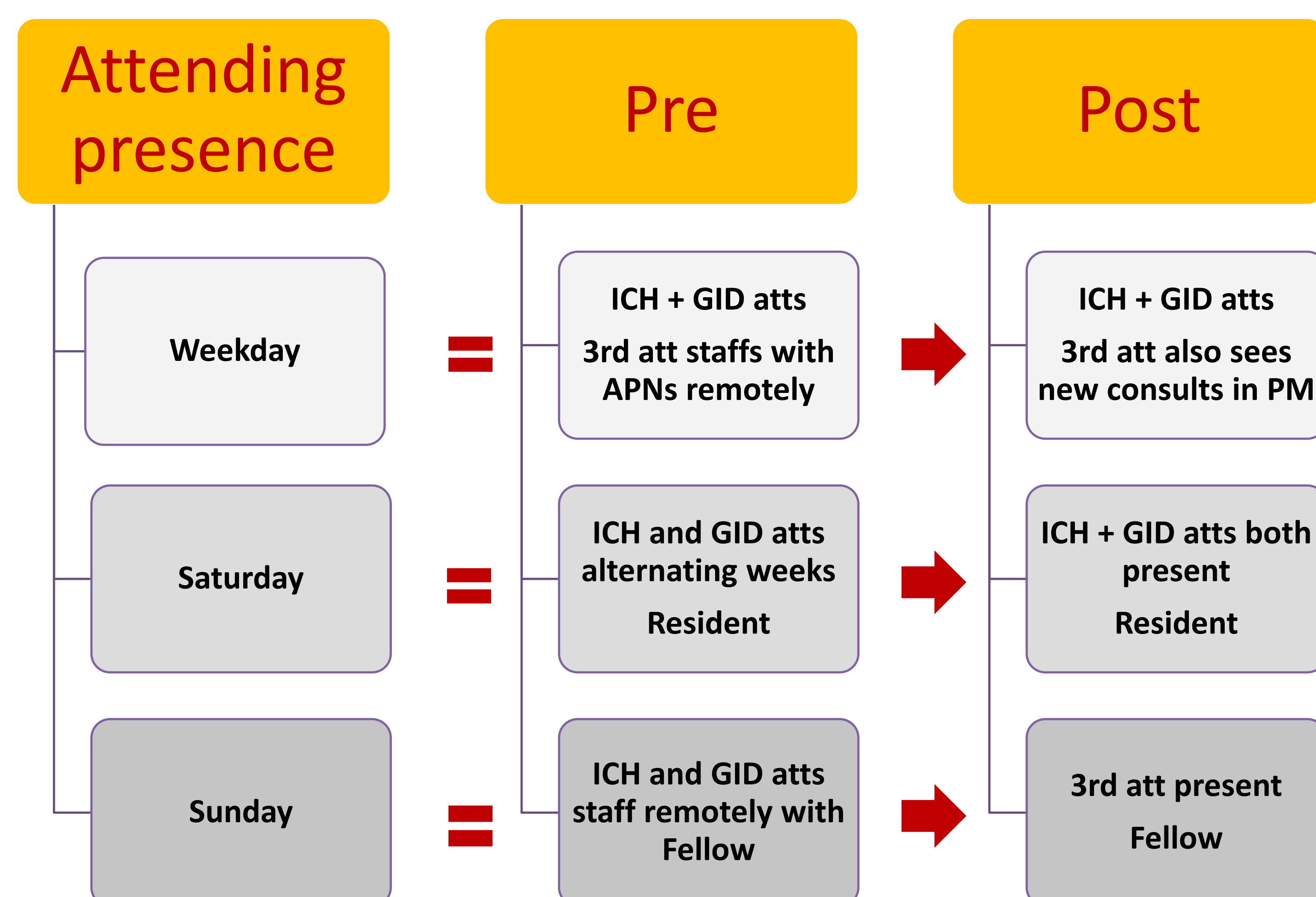
Quotes From Fellows Post-Intervention

- [Weekend to Monday] patient distribution [is] more structured, and there is less left 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.
- I feel this change has made the service better and enhanced my learning experience
- I am finishing rounds and paging [out recommendations] earlier
- Sundays are less stressful due to less consults per fellow and our third (APP directed) service being covered [by an attending familiar with the patients].

Table 3 - Analysis of Consult Service Metrics

Variable	Pre Median (IQR)	Post Median (IQR)	p-value
Residents*	2 (1-2)	2 (2-3)	<0.0001*
Max List Size*	18.5 (17.5-21)	21 (19-23)	0.0001*
New Consults	5 (4-6)	5 (4-6)	0.76
Bumped Consults*	2 (0-4)	1 (0-1)	0.04*
Billed Consults	8.5 (4-10)	7 (6-8)	0.19
Curbside Consults	3 (1-4)	2 (1-3)	0.5
Rounds End (time)*	1530 (1500-1600)	1600 (1520-1640)	0.03*
Last Rec (time)*	1630 (1550-1710)	1720 (1630-1730)	0.002*
Work from Home (hrs)*	0 (0-1)	1 (0.75-1.5)	0.016*
Pages	15 (11.5-19.5)	18 (15-21)	0.09
COVID-19 Census	98 (10-155)	94 (40-188)	0.65

Figure 1 - Intervention Diagram



Intervention: Change to attending schedules and responsibilities to improve fellow wellbeing and redistribute clinical volume. Abbreviations: GID: General Infectious Disease Attending, ICH: Immunocompromised Host Attending; 3rd: Advanced Practice Service Attending, PM: Afternoon

Table 2 – Qualitative Analysis of Free Text 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

Conclusion

An intervention addressing key structural contributors to burnout demonstrated effectiveness in reducing emotional exhaustion frequency and perception of clinical volume. While fellow clinical efficiency did not improve with this intervention, this was possibly confounded by the omicron outbreak of COVID-19, which occurred simultaneously with the service restructuring. Further work will examine this intervention's impact on ID attending wellness.

Summary statement: "Many hands make light work."

References

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