Appendix 3 – Temporal-based Reporting of Work Environment Themes over the Course of the Study Period (March 9 to May 17, 2020)

Theme	Early (Weeks 1-3)	Middle (Weeks 4-7)	Late (Weeks 8-10)
1. Cancellations due to COVID-19	In Week 1 there were reports of cancellation of rotations for residents; cancellation of conferences, and cancellation of other work (outside of the ED, such as ambulance ride outs). By Week 3, our comments revealed that lower patient volumes were leading to cancellation of ED shifts.	During this period, more shifts are reported being cancelled due to persistent low volume. One participant noted that they were unable to start a new ED job due to the pandemic.	In the later weeks, no more reports of cancelled activities. Frustrations around the cancellation of end-of-training exams were noted still within the comments late in the study period.
2. Reasons for Not Working	Even early on, some participants were not working simply since they were not scheduled, on parental leave, were scheduled for vacation, on sabbatical, or for unrelated non-COVID-19 related health reasons. These routine themes persisted throughout the whole of the 10 weeks. Initially, individuals who were considered higher risk (immunosuppression, age) were already reporting that they were not working. These individuals seemed to continue either not working or were noted to transition into other accommodations (e.g. working in cold zones). Still others were not working because of having been tested (quarantined awaiting results), mandated quarantine after returning from out of country. At week 3, several participants who were parents wrote comments about needing drop shifts since they could not arrange childcare.	Persistent themes around cancelled vacations, not working due to health concerns, post-travel isolation, or COVID-19 related testing.	Individuals who were pregnant were noted during this period to opt out of work.
3. Comments about Hospital and ED Leadership	During the initial weeks, many participants shared concerns they had about leadership during the pandemic. Key problems noted were around communication (either the sheer volume or lack thereof), and the perceived lack of planning.	During the middle period, some individuals reported improved communication, but some still found communication both stressful and poor. Frustration begins to mount with those in leadership positions, some seeing them as ineffective leaders. There is also a perception of lack of political support for emergency physicians. Concerns around the lack of planning continue during this period.	During the last few weeks, conflicting messaging and inconsistent policies emerge as a theme within our participants' comments.
4. Personal Protective Equipment (PPE)	Early on (Weeks 1-3) stressors were around not having enough PPE (Week 1), that people weren't using PPE (Week 2), learning to use PPE properly (Week 2).	Many participants noted lack of PPE still although some reported having increased (Week4) or at least good access to PPE (Week 6); Some worried that they developed COVID-19 symptoms DESPITE use of PPE, reports of reusing PPE started emerging (Week 5) including practices like washing/reusing face shields (Week 7); theme of depletion (Week 6) & lack of PPE maintained (Week 7) in this period. Some started feeling the impact of the PPE on their connection with patients (Week 7), and first comments reporting a phenomenon we will dub 'PPE Fatigue'	In later weeks (Weeks 8-10), the theme around PPE fatigue persists (with more individuals reporting how challenging they found it to work due to PPE), but also now reports of decreased PPE vigilance in their work environments (Week 9). Despite this, there was a persistence in reports of lack of PPE and lack of cleaning supplies,
5. Testing for COVID-19	Being tested for COVID-19 was reported throughout the 10 weeks.	Week 5 is the first comment related to the stress of having a patient exposure or a COVID-19 patient that was under their care succumb to death. Week 7 are the first comments where individuals reported testing positive for COVID-19. Testing for COVID-19 is reported in the comments as taking too long (Week 7).	By Week 8, some physicians were starting to report seeing the light at the end of the tunnel. Some were proud to report that they had not yet had positive cases or at least there was a lack of critically ill COVID-19 patients. Interestingly, the comments in Week 8 suggest that systems issues created by COVID-19 testing were now beginning to impact on patient care (e.g. patients being held in ED until confirmed negative swab). At Week 10, more comments related to more testing due to symptoms and positive results in both our participants and their loved ones and yet there are also increasing comments during weeks 9-10 of no new cases in their area. Anxiety around testing persists throughout.

Appendix 3 (Continued) – A Time-Series Reporting of Work Environment Themes over the Course of the Study Period (March 9 to May 17, 2020)

Theme	Early (Weeks 1-3)	Middle (Weeks 4-7)	Late (Weeks 8-10)
6. Patient Volumes & Types	Early on, it was noted at Week 2, which reported seeing an increase in COVID-19 patients. Low patient volumes	Persistent themes around changes in patient use of ED, especially lower patient volumes being experienced. This was thought to be a bit of a stressor ($ ramifications). Some reports of patient volumes picking up again around week 7. Increasing complexity of patients is observed starting in week 7.	By Week 8, some participants noted that the low volumes persisted, but many more reports of increasing patient volumes (especially with non-COVID patients). Increasing complexity of patients were noted still during this later phase. An increasing number of patients were reported from LTC. By Week 10, the stressor of having both COVID-related needs (e.g. PPE, vigilance) is now mixed with regular patient volumes.
7. Change in usual physician patterns of emergency department work	Early themes included, stress over possible redeployment plans, cancellation of shifts and decreased shifts due to low volumes; some individuals opting to give up shifts though freely (for other work). By week 3, several participants detailed their struggles with childcare – many needed to rearrange schedules due to lack of childcare supports.	By week 4 – work patterns had changed with many participants highlighting that there were now more shifts to cover (with junior physicians at times being asked to cover shifts of older physicians; which were either now not working OR were subject to accommodations). There is a pattern of comments related to increased meetings, administration, planning (to the point where people are Sick of meetings by week 6). Some physicians were giving up shifts in favour of other types of work (e.g. admin etc..). Reports of docs being actually redeployed to other areas (e.g. ICU) at week 7. Innovations such as "cold zones" emerge in the comments by week 5. And some of those older docs are asked to work there to protect them.	In the later weeks, the theme of reduced number of shifts persists. However, there are increasing individuals giving up shifts especially as other colleagues are looking for more shifts. Some report giving up shifts to help colleagues financially. Non-clinical work is increasingly mentioned (e.g. Research) in later weeks.
8. Work Environment Changes	Early during the pandemic, individuals reported increased stressors from constantly changing guidelines and regulations (Week 3). Some worried also unsafe work conditions. Generally, when called on to help, our participants noted that they covered for their colleagues. This was a persistent theme across the 10 weeks.	By Week 4, some reported stabilization of their guidelines/protocols, while many others reported continued changes in the work environments, guidelines, or protocols (Weeks 4/5/6/7). Some noted that it was taking longer to see patients (Week 5). Around week 4, participants started to remark on the stress-levels and anxiety of their colleagues. Some even noted that their colleagues were quitting, opting not to work in the ED. Some noted that they had good back-up for illness, and many reported covering for their colleagues. Some reports of the lack of certain changes in their work environment [e.g. lack of types of services like dentistry, needing to have important conversations over the phone rather than in person] were starting to grate on them. Multiple physicians note how physical distancing measures are keeping patients from their loved ones, especially during stressful ED visits (Week 6). Week 7 is the first mention of clinical innovations such as 'airway teams'. Also, there is an increased use of digital technologies to stay connected with their teams. Similarly, at week 7, at least one participant noted that old practice patterns (e.g. use of BiPAP for CHF) were starting to resume.	During the later phase of the study (Weeks 8-10), we start to see comments related to the delay of care. For instance, the cancellation or delay of surgeries began being noted as a root cause for a patient's presentation. At least one individual noted that their hospital was beginning to resume/restart other hospital services. At week 9 we see the first comments about the recurrence of exit block for admitted patients, and in week 10 one observations around the loss of space for the ED 'hot zone' was leading to ramifications on other patients. AGMPs continued to have an impact on our docs during this phase, the reports of assisting with AGMP as the outside-the-room physician. One participant noted that due to the inability to avoid AGMP, they were opting not to work while pregnant. Participants continue to remark on the fatigue, stress-levels (especially over financial matters), and anxiety of their colleagues. There were some reports now of colleagues being short tempered. Reports about colleagues becoming sick due to COVID-19 start emerging in our data. Persistent themes were noted in our data around change fatigue and uncertainty around best practices.
9. Other Types of Work that our participants engaged in (outside of the ED)	Early on, other types of work include administration/pandemic planning, education/simulation, research, and other staffing clinical services (e.g. trauma, ICU). Some reports from early adopters of new innovations such as COVID clinics and telemedicine appear around weeks 2/3.	During the middle three weeks, there is an increase in administrative tasks (including pandemic planning) reported. Participation in other services like Trauma, Hospitalist, and COVID-19 clinics continue.	Simulation, education and research tasks are not mentioned as much in the comments later within the study. There is also a drop off in Pandemic planning meetings report, but there is a persistence in administrative, telemedicine, base hospital duties, COVID-19 clinics, Trauma and ICU. Individuals start to report Locum work at new sites in week 9/10.