Digestive Diseases and Sciences (2020) 65:2461–2465
https://doi.org/10.1007/s10620-020-06468-z

FELLOWS AND YOUNG GIS SECTION

COVID-2019.2 Reboot: Returning a GI Fellowship to Pre-pandemic Practices

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Published online: 13 July 2020

Introduction

Throughout March 2020, the coronavirus disease of 2019 (COVID-19) pandemic forced residency and fellowship programs across the country to re-evaluate their training structures and overhaul how the program performed teaching and clinical elements. Like others, our gastroenterology (GI) fellowship program at the University of Pennsylvania, as part of an academic medical center, aimed for a rapid response that minimized viral exposure while maintaining clinical coverage and trainee education. We earlier described our program's response and early lessons learned when adapting to the novel virus [1]. Subsequently, the "new normal" became a system in which we downsized the inpatient consultation services, embraced virtual forums for educational activities, and minimized fellows participating in endoscopy.

As more information about the transmission of COVID-19 surfaced and the cases plateaued in our city, the leaders of our hospital system and Graduate Medical Education (GME) program initiated a plan for resurgence in clinical activity and training. As opposed to a single point in time to design a plan, this process was more of a continual cycle of assessment, adaptation to new rules, and communication. Here, we summarize how we iteratively re-adapted to the resurgence with the same priorities as the initial response: safety, appropriate clinical care, communication, distributive justice, and continued education.

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Deciding to Begin a Resurgence Process

By the beginning of May, the census of COVID-19 patients had stabilized and was reducing; the institution, hospitals, and division were all outlining plans for a phased resurgence. Our providers had stable access to personal protective equipment (PPE), with a steady supply ensured through reuse of sanitized N95 respirators [2, 3]. There was an improved general understanding of the modes of viral transmission and how to mitigate spread. The institution had implemented universal COVID testing for all procedures and admissions through the emergency department. By nature, our response within the fellowship was iteratively reactive to broader changes by the institution and division. Our driving principles are summarized in Table 1.

From the beginning of the COVID-19 response, we as a fellowship collected data from the fellows in order to objectively guide our decisions. At each virtual huddle, we gathered observations from the fellows on service, maintaining a log of notes. We also asked fellows on service to document the number of consultations/day at each service, so as to track the trend in volume, and used the huddles to discuss any perceived trends. Another goal with the huddles was to provide a space for qualitative assessment of readiness for change and to maintain a sense of community and dialogue among the fellows.

Phased Periods of Resurgence

Period 0

New COVID Normal Involved Structural Changes

Table 2 summarizes the periods of resurgence. During period 0, Stage 3 Pandemic Emergency Status was declared for all of our ACGME-accredited residency and fellowship programs. All research operations were stopped

Table 1 Motivating principles maintained through the resurgence process

Motivating principle	Methods
Safety	Follow the updates from the division and hospital on available PPE in determining when and how fellows can participate in endoscopy. Continue tele-consults in the hospital as appropriate
Appropriate clinical care	Track volume of consultation requests in the hospitals when considering the number of fellows needed at each site
Communication with departmental and divisional leaders	Regular e-mails regarding structural changes and their impact on fellows and fellowship activities
Communication among fellowship leadership and fellows	Twice-weekly virtual huddles with all fellows and once-a-week with on-service fellows. These presented the opportunity for fellowship leadership to discuss new information to be incorporated openly and transparently, address questions, and collect ideas and feedback from fellows. Minutes were sent by e-mail for those who could not attend and maintained in an ongoing document for easy identification of trends
Distribute justice	We assessed the impact of new changes on first-year fellows and upper-year fellows separately, as well as on clinical education as well as academic pursuits. We sought input from fellows to make sure our strategies were in line with this
Education	On every iteration of change in the clinical schedule, we aimed to assess the impact of prior changes and adjust service rotations, in order to equitably distribute educational opportunities in all sites to all clinical fellows. Wherever possible, fellows engaged in virtual rounds and educational meetings throughout the division, department, and hospital, resulting in a diverse and robust experience despite diminished clinical exposure

with the exception of life-sustaining activities at the start of the pandemic. We reduced fellows on the inpatient consultation services and deepened a pool of fellows to be on back-up call (jeopardy) for both the GI services and other medicine services, as requested by the department and hospital. To reduce exposure, we divided nightly on-call services so that one fellow was on "tele-call" to answer calls from all three hospitals from home without hospital exposure, and the fellow on service was on "travel-call," to be called into the hospital only for urgent procedures. The services were designed with 1-week blocks in order to minimize any impact on scheduling from exposure-related quarantine.

Regarding endoscopy, fellows were not allowed to participate in outpatient endoscopy out of concern for safety and minimization of PPE use. The very few inpatient endoscopic cases, and only urgent outpatient cases, were being done in the OR, and all outpatient endoscopy centers were otherwise closed.

Period 1

Stimulating Change

After a drop in consultation requests from mid-March through April at our main hospital, the number of daily consults was increased and back at the pre-COVID average. The VA also experienced a return to pre-COVID inpatient volumes. It was deemed that fellows could participate in inpatient endoscopic cases on patients who tested negative for COVID.

While the mean number of inpatient endoscopic cases per day was 8 prior to COVID, this had dropped to 4.5 per day through April; in May, there was less hesitation for inpatient endoscopic procedures, resulting in more cases being done per day.

Notably, none of our fellows needed quarantine after exposure, and there was less concern about jeopardy shifts. Still, there were personal concerns about asymptomatic exposures, and we were still in ACGME Stage 3 Pandemic Emergency Status with statewide shelter orders in place.

Program Response

The goal was to adhere to the principle of safety while acknowledging the increased need for personnel in order to provide appropriate clinical care. We increased the number of fellows on the consultation service from 1 to 2, for in-person and telemedicine consults, and added back a fellow to the VA consultation team. With five fellows now on service instead of three, we maintained a travel-call and tele-call separation, but revised the call schedule so no fellow was required to do travel-call more than three times a week. This new system improved clinical education for more fellows while still minimizing the number of fellows exposed to the hospital.

Period 2

Stimulating Change

The outpatient endoscopy center opened for some rescheduled endoscopic procedures, where all patients were being tested for COVID prior to procedure. The volume was still much lower than our pre-COVID normal. Balancing a minimization of staff on site and PPE use with fellow education, the division deemed it appropriate to have limited fellows

Table 2 Summary of changes on the timeline, including the pre-COVID state for reference and the COVID-related adaptations as documented in the first article

	Pre-COVID	Mid-March (COVID changes)	May 4: increased consult load	May 11: outpatient endoscopy resumes	Early June
Inpatient consultative services	*HUP* three fellows gut, one fellow on liver service *VA* one fellow *PPMC* one fellow	*HUP* one fellow gut, one fellow liver *VA* zero fellows *PPMC* one fellow	*HUP* two fellows gut *VA* one fellow *PPMC* one fellow	No changes	No changes
Calls	Two fellows covering the three hospitals per night for phone calls and emergent procedures	One fellow for "tele-call" for all three hospitals. On-service fellow for "travel-call" for emergent procedures	With more service fellows, fewer nights of travel-call per on-service fellows	No changes	Return to pre-COVID call model. Call schedule adjusted for distribution
Endoscopy	*Y*2/*Y*3 join attendings for scheduled cases at four sites, consult fellows do inpatient cases	No fellows for any endoscopy	Fellows may perform inpatient endoscopy	Graduating fellows allowed to participate in outpatient endoscopy on limited basis	Other fellows can join outpatient endoscopy on limited basis
Clinic	In-person continuity clinics for *Y*1 and *Y*3 and subspecialty clinics for *Y*2 and *Y*3	Only urgent in-person visits for attendings, no fellow participation. Only telemedicine for *Y*3 VA clinic	Subspecialty telemedicine clinics are ongoing by faculty and available for *Y*2/*Y*3	Resumption of *Y*1 continuity clinic through telemedicine	Sixth *Y*1 does mix of clinic and self-learning
Research	Six fellows in basic science laboratories	All in-person laboratory activities halted			Research laboratories opened on June 8

*Y*1 is a first-year fellow, *Y*2 is a second-year fellow, and *Y*3 is a third-year fellow

participating in outpatient endoscopic procedures. Meanwhile, attendings were conducting substantially more visits through telemedicine.

Program Response

We re-opened the sign-up process for joining attendings for scheduled procedures, where only graduating fellows could participate during the first week. Upper-year fellows re-joined attendings for subspecialty clinic exposure through telemedicine.

Period 3

Stimulating Change

In early June, the ACGME Stage 3 Pandemic Emergency Status was downgraded to stage 2 at our institution. Hospital data were reassuring in showing very limited transmission to healthcare providers after implementing institution-wide PPE policies. The division was expanding staffing and the number of cases for outpatient endoscopy to be done per day. There was interim access to N95 decontamination processes, expanding PPE access. The university planned to begin a phased re-opening of research operations with limited personnel allowed to be in the laboratories at a designated time.

Program Response

All fellows not on service were now able to sign up for outpatient endoscopy. But, due to the limited time for graduating fellows to scope under supervision, we instituted a policy where they had first priority to sign up for endoscopic opportunities. All fellows understood this decision.

Moreover, we returned to the previous call system with no "tele-call" or "travel-call." The listed fellow on call was now responsible for answering all questions over the phone and, if required, going into the hospital for any urgent overnight consults. This was found acceptable with the return of all fellows coming to the hospital grounds for endoscopy. Though, out of concern for any vulnerable populations, fellows were encouraged to voice individual concerns; accommodations were made accordingly. All fellows were still not to participate in procedures on COVID-positive patients.

With the aim to return to inpatient service and education, we used this opportunity to equalize exposure to different rotations in order to balance some of the rotations for educational experience during the COVID era, namely time on the liver consult service toward ACGME requirements. Since the luminal service was operational with only two fellows and the physician assistant (PA), the sixth first-year fellow in this system could now focus on a mix of outpatient and self-learning activities, coinciding with the resumption of the continuity clinic, since preceptors were more comfortable by this point with the virtual platform for outpatient clinic.

The final phase of the resurgence, which is still ongoing, is the resumption of all in-person research activities. Fellows who were performing in-person research activities will be allowed to resume research in accordance with university guidance and their mentor or principle investigator (PI).

Special Circumstances

At the time of planned resumption of in-person research activities, the city of Philadelphia experienced both peaceful protests and civil unrest following the death of George Floyd. In consideration of this and related incidents, the perception of race and its impact on our faculty, trainees, and patients was brought to the forefront. Our fellowship program and senior leadership provided resources for those who wanted to discuss the impact of recent events on their lives. Moreover, acknowledging concerns of safety, road closures, and citywide curfews, only essential fellows were permitted to come into the hospitals for only as much time required in order to complete work. All research activities at the university were paused for one week.

Other Educational Changes

As a result of the COVID-19 pandemic, many educational sessions were switched to remote learning including lectures, grand rounds, case conferences, and board review. With this, lectures and some conferences were recorded and made available for those who could not attend. The move toward telemedicine and remote learning has opened new opportunities that likely will continue after COVID-related restrictions are lifted.

Our prior curriculum for video capsule endoscopy (VCE) involved reading select capsule studies on dedicated computers and reviewing them in person with a VCE faculty member. With the move to complete these studies off site, a team of fellows and faculty converted the curriculum to be available remotely through the use of VPN access and uploaded video files. Fellows are now able to read video capsule endoscopy cases on their own time and later review the study with a faculty member virtually. This new remote format was well received from trainees due to the flexibility in time and location of reading capsules. We plan to adopt this format for video capsule endoscopy education in the future.

Remaining Issues

There is no way to predict if and when there may be another increase in COVID-19 cases. With improved understanding of transmission and safety protocols, we likely will not have to return to phase 0 scheduling, but there may be other accommodations to our approach needed. Furthermore, other changes in hospital staffing resulted in our fellows being redeployed for COVID-related coverage outside of GI, with the expectation that some of these requests may continue into future months. This, in turn, will impact scheduling of inpatient responsibilities and calls accordingly, necessitating maintaining a flexible schedule.

Endoscopy training and research output continue to be major concerns. All graduating fellows had completed requirements prior to restrictions but had limited time to hone and practice skills before graduating. Clinic experience continues to be entirely virtual; while attendings have resumed limited in-person clinics, fellows have not joined those yet due to space and the limited ability to maintain appropriate social distance.

With the new fellows starting in July, plans for their orientation and training are being adjusted. Some educational experiences involving hands-on training may require in-person demonstrations, while others can remain virtual.

Reflections and Conclusions

At the time of rapidly instituting the COVID-related adaptations aiming to reduce exposure, the goals and timeline were clear. The resurgence proves to be more complex, requiring a phased approach. Early on, there was much discussion about how and when to reverse those changes. Ultimately, our phases were not defined by an anticipatory plan but rather in response to feedback from fellows and to institutional and divisional changes as they developed.

In implementing the changes described above, we have learned the importance of dialogue and transparency. Much of what we have done over the past 3–4 months has been unprecedented; these actions have required cooperation and shared responsibility by our fellows. We found that open dialogue and engagement between fellows and fellowship leadership were essential to achieving this goal. Given the marked anxiety engendered by the virus, we found that incremental change also led to better buy-in from fellows and fellow leadership. The key strategies continued to be frequent communication, transparent dialogue, and flexibility.

Furthermore, all changes have not been neatly reversed as we continue to adapt to a new reality. Evaluating the impact of our phased changes led to some conclusions that may last beyond this era of COVID response: virtual learning, telemedicine, remote VCE curriculum, and change in the luminal service composition in order to facilitate more outpatient clinic exposure during the first year of training. We will continue to evaluate our adapted system striving for superior solutions regarding endoscopic training and research activity, understanding there may be a new normal for the foreseeable future. While the details of the institution and location will require a tailored approach for other programs individually, we provide a framework of strategies and principles that may be applicable for other training programs that share the dual mission of education and service.

Acknowledgments The authors appreciate the input and guidance of our other associate program directors, Nitin Ahuja and Marina Serper, and our former program director, Jan-Michael Klapproth. The authors also appreciate the rising chief fellows, Claire Beveridge and Sarah Coughlin, who were involved in many of the discussions and fellowship-related adaptations.

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