

Resident/Fellow/Student Deployment/Education During COVID-19 Crisis and Beyond

Our group, the “Subcommittee on Sharing and Documenting Experiences from Institutions in the Midst of the COVID-19 Surge, of the Special Committee of the ACS Academy of Master Surgeon Educators,” is charged to establish a mechanism by which residents and students related issues and their management observed in locations where COVID-19 infections have had significant penetration and surge can quickly be disseminated to locations that are early on the infection curve to be prepared for the surge in COVID-19 cases.

The members of the subcommittee felt that it would be beneficial to follow the staging system established by ACGME as we categorize and classify various actions. This system will allow each surgery educational program to plan based on what stage in the continuum they are in and use information bundled for their needs.

The following is the staging system:

Stage 1 – “business as usual”

Stage 2 – increased but manageable clinical demand

Stage 3 – crossing a threshold beyond which the increase in volume and/or severity of illness creates an extraordinary circumstance where routine care education and delivery must be reconfigured to focus only on patient care

However, based on the subcommittee discussions, it became apparent that the timing and the nature of a post-COVID surge plan should be considered to prepare programs for that stage as clinical and educational functions gradually return to normalcy.

We also felt that information should include the following topics:

1. Mechanisms of residents’ deployment such as deployment models during all three stages of the crisis in order to inform not very affected programs how to prepare for the different stages mentioned above.
2. Resident education models along the same three stages:
 - a. How to proceed with resident education at different stages?
 - b. Is there a time when the system is so overwhelmed that education takes a backseat to managing the crisis?
 - c. How are residents who are on isolation helping with the educational mission?
 - d. How are M&Ms and other conferences being managed?
 - e. What strategies are being used to maintain numbers of Chief cases required for graduation?
3. Impact on resident health, wellbeing, and mental health and its management:
 - a. Residents
 - b. Their partners and/or families (For example residents are afraid to go home worrying to transmit the virus to their partners and families)

The Product:

The idea is to host a website under the auspices of the Academy, where information can continue to be posted on an on-going basis from various sources. It will be open to others to post documents and experiences and provide links to existing website that are deemed useful; to do so we will need a process to vet sources and review documents for appropriateness and legitimacy. This can be done by a small group of subcommittee members and others to work with staff in updating contents of the website.

Steven Schwaitzberg, MD
University of Buffalo

STAGE 1. Residents deployed to six hospitals multiples services strict adherence to NYS and ACGME work rules

STAGE 2. All services retooled to one week on and one week off with 80 hr. envelop (no elective surgery)

- Daily status report of all residents to PDs and Chair including exposure, quarantine COVID-19 status and estimated return date
- Daily team map of location of each resident
- Daily message from PD or Chair
- Conferences/ M&M converted to Zoom platform
- Universal Masking
- Interview travel canceled converted to video conference
- Surgeons > 60 taken off call schedule
- NO double scrubbing
- No medical students on clinical services in the hospital
- Maslach burnout inventory (MBI) weekly (we have ongoing study of our PG1/2s to set baseline with)
- Creation of COVID-19 Critical Care rotation (for use if needed)

STAGE 3. Board eligible fellows granted emergency privileges in general surgery, malpractice obtained

- Surgical Critical Care fellow to manage one of the new created vent units in the former main PACU
- Malpractice arranged for attending level coverage
- Two stage plan to reduce emergency general surgery to 2 hospitals and if needed one hospital (our trauma center) to conserve resident attending/OR Nursing staff if ill.
- Resident manpower redistributed to provide care in vent unit – additional hours for APPs to backfill if possible
- Conferences canceled
- Work hours decision not yet made

Past the Peak. ????? Extended chronic phase

- In discussion with Dean/CEO >>> LCME for not IF but WHEN MS 3s and or 4s will return even if COVID-19 not totally eradicated which could be a very long time
- Who does elective surgery open up --- impact on training?
- New testing to determine unknown exposure and recovery or carrier????
- Rebuilding rotations letter of recommendations etc. this summer

Celia Divino, MD
General Surgery Training Program
The Mount Sinai Hospital

As the COVID 19 crisis evolves, it is important that we adapt and be prepared with a structure that will support our capacity to take care of patients, while maintaining the well-being of the housestaff and minimizing the potential of COVID 19 transmission. Effective Wednesday, March 18, 2020, all elective cases are cancelled, except for Category B (i.e. cancer) or emergency cases. Please see attached definition of Category A, B or C cases.

With the reduced elective schedule, the patient/inpatient census is expected to be low, allowing us to consolidate resources. To accomplish this, the current surgical teams will require reorganization for cross-coverage, and creation of special teams (i.e. Procedure, Operative, and Critical Care Teams) as needed. A schedule has been created. Regular COVID 19 updates are provided by the institution through Broadcast Notifications, and should be read carefully.

We will abide by the Mount Sinai Health System recommendations. Safety Training modules **must** be completed in Peak to ensure safety when caring for patients.

For Mount Sinai Hospital:

- 1) **Inpatient Surgical Team**- there will be one General Surgery team covering Team 3, 4, 5 and Surgical Oncology. The team will consist of :
 - 1 PGY 5 (Chief resident)
 - 3 PGY3's or PGY 4's
 - 4 PGY 1's
 - 2 PA's (for each shift)
 - 2 Consult residents (alternating 2 day shifts)

Responsibilities

1. The Inpatient Surgical Team will round on all inpatients on a 2 day rotation (2 days on and 2 days off), and be responsible for the care of the patients on the Service, and are expected to stay in house all day. One of the PGY3's will serve as the In-House Senior Resident overnight, and leave post-call after appropriate sign-out.
 2. Every member on the Inpatient Surgical team is expected to know the entire service regardless of PGY level.
 3. The Chief resident and Senior residents will decide on who will see the off service patients. This list should be limited as much as possible.
 4. The Chief and Senior Residents on the Inpatient Team will discuss plans with the attendings.
 5. The OR cases will be staffed by PGY5, and PGY 3 and 4. If needed, more seniors from the Home back up team will be called in.
 6. Notes are to be written by PGY 1's and PA's in a timely manner.
 7. Consult pager will be held by the Consult resident.
- 2) Inpatient Surgical team Back up Team- will be activated when the inpatient census \geq to 15 patients.
 - 1 PGY5
 - 1 senior
 - 1 PGY1

Responsibilities:

1. Round on patients not seen by Inpatient Surgical Team.
2. Take care of plans for these patients, including documentation and notes and arranging tests
3. Sign out if possible and leave the hospital.

3) Home Back Up team will consist of residents not on the Inpatient Surgical team.

Home back up will stay at home, not allowed to travel outside NYC as they will need to be available to come in in case of emergency, or if any members of the Inpatient Surgical team are unable to work.

In addition, all residents on Home Back up team are expected to participate in all educational events via Zoom.

4) Critical Care Team

This will consist of a PGY 1 rotating in the ICU to assist the Critical Care team. The Primary caregivers in the ICU are the Critical care attendings, fellows, and PA's,

The PGY1 will rotate 2 days on and 2 days off in the unit.

PGY 5's may be called upon to have a more senior supervisory role in the units as needed.

Responsibilities:

- a) Documenting history, putting in admission and medication orders
- b) Call consults
- c) Organize transfers
- d) Present patients on rounds

PGY 1 will not be expected to examine patients or do procedures.

4) Procedure Team (contingent on need)

- 1 PGY 5
- 2 Pgy3 or 4
- 2 PGY 1

The Procedure Team will be responsible for all procedures such as central lines, IV lines etc.

Communication:

The Inpatient Surgical team will have a dedicated WhatsApp group for constant updates—Inpatient Surgical

There will be a separate WhatsApp group, called SurgeryMSHCovid for the entire General Surgery residency program, and it will be used for coordination of major events and dissemination of general information.

Resident Facilities:

As per CDC guidelines, all facilities will be cleaned and disinfected twice a day.

The only facilities that will be open are the Team 4 and Team 5 call rooms and the Surgical Library.

All other team rooms will be locked as of Monday, March 23, 2020.

Outpatients Clinics:

All outpatient clinics at MSH will be staffed by their respective attendings and fellows. No residents will attend outpatient clinics. Colorectal Clinic is cancelled.

The Elmhurst Hospital:

Dr. Spiegel has assured me that staffing will be adjusted to limit the number of residents in the hospital as well as during Trauma teams. Please note that Elmhurst will continue to have Trauma patients coming in.

All outpatient clinics in Elmhurst are being triaged carefully and will be eventually cancelled. No residents will attend outpatient clinics. PA's will staff the outpatient clinics.

Bronx VA Medical Center:

For the Week of March 23:

- Both the vascular team and general surgery seniors and fellow will come in to round as normal
- Instead of 2 interns (the on call and day intern), only on call intern come in each day
- Interns will not go to general surgery clinic
- General surgery chief will round in the am, then leave if there are no cases
- Vascular team will also round on their patients and cover their own cases
- Weekend call will proceed as usual (with the general surgery chief and vascular senior splitting the calls)

Starting April 1:

- Starting April 1, the Vascular 2 will round on general surgery during the week days
- The general surgery chief resident will be on standby during the week for emergent general surgery cases

We recognize that this is a dynamic situation, and that as disease incidence/prevalence change, we may need to change procedures. The current MSHS policy for clearance/testing/home isolation of employees is linked below:

Please click on the below link to access the MSHS Employee Clearance Policy:

https://www.mountsinai.org/files/MSHealth/Assets/HS/About/Coronavirus/MSHS_COVID_19_Employee%20Monitoring_Testing%20%20Clearance%20%202020_03_16%20_5p.pdf

Please complete the required *Personal Protective Equipment (PPE) Training* via PEAK at your earliest convenience.

- Click on peak.mountsinai.org and find module name: **Contact-Airborne/PPE Training** in the PEAK system
- A quick guide can also be found at [PPE Handout](#)

GME is tracking progress and sending our program weekly reports. Let's get 100% completion rate ASAP!

While COVID 19 seems to be causing severe illness primarily in elderly individuals and those with underlying comorbidities, there are case reports of significant illness in young and healthy individuals. In light of this, your individual safety remains a priority. If you encounter any difficulties obtaining adequate personal protective equipment or are concerned about safety protocols in any way, please do not hesitate to contact Dr. Divino.

Pandemic Model

This staffing model was adapted about 2 weeks after the Surge Model as described.

The difference between Stage 1 and Stage 2 has not been significant in our program.

Significant changes had to be made once the crisis reached pandemic models.

By this time, there was no longer a separate COVID unit for the surgical patients. Bed shortage reached critical levels, which necessitated having COVID negative and COVID positive patients on the same floor.

With the depleted workforce, and increased demand for nonsurgical medical needs, staffing had to be adjusted while keeping to the staggered staffing. At this point, almost all the PGY5, 4 and 3 residents were deployed as leader of the surgical teams.

Surgical Inpatient Service

1) Inpatient Surgical Team

1 Senior Residents acting as Chief (PGY3 or 4)

2 PGY 2

4 Interns

2 PA's

Responsibilities:

- 1) Daily rounds on all inpatients and formulate treatment plan
- 2) 1 Senior resident 24 hour call for Consults
- 3) 1 Senior covers Emergency cases
- 4) 1-2 interns stay in house to work with PA's for documentation and discharges.
- 5) Rest of the team go home

2) Home Back Up team

Responsibilities as described in Stage 1 and 2.

All available to come in as needed

Surgical Teams were formed to help meet the needs of the health system, which includes 7 other hospitals ranging from 200-1200 bed capacity. Teams were assigned based on need and requests were evaluated by a centralized system that determined deployment. Parallel teams with similar composition were formed by other surgical subspecialties (i.e. Orthopedics, ENT, Urology).

For the Department of Surgery (includes General Surgery, Vascular Surgery, Plastic Surgery), the composition of the Surgical Team is as follows:

1 Chief/Senior Resident --Team Lead

2 Surgical Attendings

1 PA/NP

Two Ancillary (Medical Assistant or Administrative Assistant—for documentation and other low acuity medical needs)

Teams were deployed after careful evaluation of the need. Most common sites of deployment are the ICU's and Emergency Department.

For ICU- 12 hour shifts

For ED- 8 hour shifts

Rotations were 3 days on and 3 days off.

Only exception was illness and quarantine policies were strictly followed.

EDUCATION

Priority has been placed on this to maintain a semblance of normalcy in their training.

- 1) Weekly M & M by Zoom
- 2) M & M followed by a 30 minute presentation by a senior resident on a COVID related topic or paper chosen by PD and resident.
- 3) Weekly Basic Science Core lecture by Zoom
- 4) Weekly Journal Club by Zoom for all available residents. This is most important for residents who are at home and not deployed for continuous learning.
- 5) Educational materials on COVID regularly updated and disseminated on residency website

DUTY HOUR COMPLIANCE

Compliance with the 80 hour work extremely challenging but enforced

To augment our workforce:

- 1) All residents on research and in New York City were asked to come back and paid
- 2) Residents scheduled for vacation were given the option of working and paid

Funding for these moonlighting shifts were generously provided by the Graduate Medical Education.

RESIDENT WELLNESS

- 1) Weekly Wellness Zoom conference moderated by the Wellness Chief Resident and an assigned attending

Very popular for residents to voice concerns and fears

- 2) Twice daily Mindfulness sessions by Zoom moderated by the Departmental Mindfulness Coordinator
- 3) Yoga sessions by Zoom

SURGERY IN COVID PATIENTS

1) All patient having surgery require COVID testing at least 8-12 hours before proposed surgery. Currently, COVID test results come back 4-6 hours on the average.

- 2) PPE: N95, face mask or face shield
- 3) Laparoscopic approach not used for all procedures because of uncertainty of transmission with insufflation
- 4) Anesthesia Currently recommending delaying surgery for 7 days to allow respiratory symptoms to fully manifest itself. Intubation may precipitate respiratory failure in these patients.

EXCEPTIONS: Life threatening emergencies

- 5) Although non-operative management is advocated, there are certain presentations where patients will benefit from surgical intervention and discharge instead of prolonged hospitalization: 1) Appendicitis- early, non-perforated appendicitis may undergo appendectomy and discharged 4-6 hours later as opposed to IV antibiotics requiring inpatient admission.

Cases are evaluated individually

TRAUMA SERVICE

Trauma volume is considerably down at least for now. This allows the Trauma team to be deployed to various units in Elmhurst Hospital, where the number of COVID cases is staggering.

Responsibilities:

- 1) Trauma patients as they come in
- 2) Staff the SICU
- 3) Procedure Team for the entire hospital

PGY 2 level and up

Central lines, chest tubes, difficult IV access; arterial lines

L. Scott Levin, MD
University of Pennsylvania
Orthopedics

The University of Pennsylvania Health System is comprised of three downtown hospitals Princeton health, Lancaster General, and Chester County Hospital. Currently, our Orthopedics residents are at the three downtown hospitals. Our program now includes 47 residents that spend five or six years in our program. We have two six-year research residents that historically have been precluded from participating in any clinical work. Our approach during COVID-19 period is based on the following salient points:

1. Immediate cessation of elective surgery: As the chairman of the department of orthopedic surgery I have mandated that my faculty provide the histories and rationale for surgery for any orthopedic case that is to be performed in our system before it can be posted. Our operating room directors are requiring within EPIC specific justification for the case.
2. Redirection of musculoskeletal emergencies: We have established clinic space that is to be used for all musculoskeletal emergencies. Simply stated there is not one patient with a musculoskeletal issue that will enter a staging tent or emergency room in our system but rather be redirected to adjacent buildings or clinic space that is staffed by residents, fellows and attending staff.
3. Reconfiguring resident teams: The residents were redeployed in two alternating platoons to protect them and limit exposure. They are expected to work a full 80 hour work week involved in studying for in- training exams, self-study, and academic projects.
4. Redeployment of research fellows and residents: All of the research laboratories both clinical and basic science research laboratories as well as animal research has been shut down at Penn, which subsequently has freed up research fellows in a variety of medical specialties. We reentered our orthopedic Research residents into our total pool of residents available for acute musculoskeletal needs and operative procedures that center around musculoskeletal emergencies.
5. Retooling of faculty and residents: At the VA our faculty and residents are currently engaged in modules to teach them how to conduct themselves in ICUs. The health system has an ACGME plan for Resident Fellow and faculty redeployment if the surge escalates to the level that will require our orthopedic learners to be deployed in intensive care units, screening tents or in the emergency room for care of COVID patients.
6. Restructuring education: At the same time our elective surgery declined our residency program director division chiefs and fellowship directors established a “bluejeans” online curriculum of case presentations didactic lectures and conferences that so far have worked well and continue to improve in terms of the facility of the faculty and residents to exchange dialogue around musculoskeletal subjects online.

Carlos A. Pellegrini, MD
University of Washington

This a summary of the account Dr. Pellegrini provided verbally on what the residency at UW is doing in terms of deploying the residents.

The surgical residents at UW were divided into three groups:

1. Inpatient group: This group rounds on all patients admitted to the hospital
2. Outpatient group: Using Telemedicine, this group is at home protected from exposure to COVID-19; however, it supports the inpatient group with any online resources.
3. Operative group: Dedicated exclusively to the Operating Room

In the extreme circumstances, a large group of residents formed of an amalgamation of all surgery residents and anesthesia the members of which can be deployed by a “Czar” of all surgical workforce who responds to the need of the Incident Command Center and rapidly deploy residents.

Sir Murray Brennan, GNZM
Memorial Sloan Kettering Cancer Center

Sir Murray emphasized the role of research residents and fellows to be redeployed in the clinical arena at their home institution if they are engaged in research in an away institution.