Reopening Endoscopy in Post-Peak New York City: A Revised Road to Recovery from COVID-19

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New Yorkers emerging from the COVID-19 pandemic which peaked in New York City on April 6, 2020, now face the prospect of how to reopen society and forge a new post-virus "normal." Although there is sustained evidence that the curve has been flattened, the area under the curve remains unfathomably morbid, reflecting the unique circumstances faced in the greater New York metropolitan area. There were 68,776 confirmed cases of COVID-19 on the peak date in New York City, comprising 53% of the state's infection total and almost 20% of the national incidence. As of the first week in May, New York State's confirmed incidence still accounts for nearly 30% of the national burden and continues to characterize New York as a high prevalence, still burning "hot zone."

This insight is important as the GI community considers strategies to reopen and resume endoscopy services throughout the region, where many practices have suffered significant financial losses and may be at high risk for collapse. Both financial recovery and a commitment to addressing the deferred needs of patients is driving efforts to reopen. However, determining when and how this can be done both safely and efficiently and within the constraints imposed by the pandemic on the greater New York area, remains an overwhelming professional challenge.

All three national gastroenterology societies have now posted comprehensive guidelines that address reopening and ramping up of GI practices.[1,2,3,] Common principles that shape these recommendations are 1) defining priority categories of procedures in order to address deferred needs, 2) helping patients reprioritize their own GI heath care, 3) maintaining safety of patients, and 4) maintaining safety of physicians and staff.

The New York Society for Gastrointestinal Endoscopy (NYSGE) highly recommends referencing the national guidelines when assessments on readiness to resume endoscopy are being made. As a supplement to these resources, assistance in navigating New York-specific variations and suggested best practices for topics not fully covered elsewhere are presented here.

NYSGE recognizes that there is great diversity in practice types and that each practice will need to customize its reopening strategies to accommodate the immediate environment, local regulations, available resources, and other situation-specific limitations. NYSGE acknowledges the fluidity of these times and aims to update this resource regularly with input from members, through surveys and other outreach.

REQUIREMENTS FOR REOPENING AND STAFFING CONSIDERATIONS

1. Academic medical center or hospital-based endoscopy units and practices:
   Ramping up of procedures is highly dependent on whether units remained open as functional endoscopy units during the COVID-19 restrictions or whether they were repurposed as ICUs or medicine units. In general, the following resources need to be in place:

   A. Institutional infectious disease policies regarding reopening.
   B. Available staff (nurses and technicians).

C. Available space and resources (endoscopy rooms and recovery).
D. Availability of inpatient or ICU or other specialty services (e.g., hospitalist, interventional radiology, surgery) in case of need for admission or management of adverse events requiring monitoring or intervention.
E. Availability of personal protective equipment (PPE).

2. Ambulatory Surgical Center or Free-Standing Endoscopy Units:
   In addition to item 1. considerations:
   A. Adherence to state mandates for re-opening (currently May 16-18, 2020).
   B. Develop a strategic plan; begin with low transmission-risk procedures only, such as colonoscopy, until testing or PPE requirements are fully available or defined (Table 2).
   C. Consider simultaneous resumption of upper endoscopy if additional protective measures such as use of a procedure oxygen mask (POM) can be secured. Availability of universal pre-procedure molecular testing may abrogate the need for a POM.
   D. Further ramp-up will also depend on other mandates by state or local government as well as the unit's management organization.

3. Provider Teams:
   A. Providers at increased risk for COVID-19 infection (Table 1) should partner with low-risk or previously infected providers [Note: there is no evidence yet that convalescent antibodies protect against re-infection]. Consider fast-tracking privileges, temporary contracts, fee/expense sharing and appropriate delegation of procedures to low-risk providers. As above, availability of universal pre-procedure molecular testing may abrogate the need for risk-based provider classes.
   B. Restrict weekly volume with alternating providers in order to reduce exposure and manage PPE-induced fatigue.
   C. Pair endoscopist and nursing or tech staff when feasible with minimal cross-over during cases
   D. Pair provider team with a patient throughout the care cycle in the endoscopy unit (admission, procedure, recovery, discharge).

4. Consider restricting staff or providers from working in multiple facilities during the initial phase of restarting.

5. Consider regular molecular testing of individuals who work in multiple facilities.

DEFINITION OF EMERGENT, URGENT, AND ELECTIVE PROCEDURES AND RELATIVE RE-INTRODUCTION INTO ENDOSCOPY ROSTER:

See American College of Gastroenterology (ACG), American Society for Gastrointestinal Endoscopy (ASGE), American Gastroenterology Association (AGA), European Society for Gastrointestinal Endoscopy (ESGE) guidelines and prior NYSGE guidelines [1,2,3,4,5,6]

COVID POSITIVE PATIENTS, PATIENTS UNDER INVESTIGATION, OR THOSE THAT FAIL QUESTIONNAIRE-BASED SCREENING (QBS)[3]
(Table 3) SHOULD NOT UNDERGO PROCEDURES AT ASC OR FREE-STANDING ENDOSCOPY UNITS

1. If elective or semi-urgent, defer until cleared by Department of Health-determined standards regardless of intended facility.

2. If urgent or emergent, refer to hospital-based endoscopy unit for procedure in order to maximize procedural measures such as use of negative pressure room, intubation for upper GI endoscopic procedures, and use of full PPE (Table 2)

PRE-PROCEDURE SCREENING OF PATIENTS

A wide range of options is suggested when consulting national guidelines focusing on "high prevalence" areas such as New York, and consider strategies that follow a "risk-category" pathway which may include the following options:

1. Testing with oropharyngeal swab PCR for all patients within 48-72 hours of the procedure and a QBS using CDC-Guidelines (Table 3) on arrival plus a temperature check (100.4F threshold) or

2. QBS using CDC-guidelines (Table 3) for all patients 3-5 days prior, 1 day prior, and upon arrival plus a temperature check (100.4 F threshold). If routine molecular testing is not available, strongly consider full PPE with N95 (or equivalent) for all high-risk procedure cases.

PRE-PROCEDURE SCREENING OF STAFF

There is no consensus on the routine testing of staff with either PCR testing or serum antibody testing, nor with use of QBS; however, consider:

1. Daily temperature checks of all staff upon arrival.

2. Testing staff involved in care of patients who have tested positive within 14 days of having had procedure at a facility (see "follow up" below).

3. Testing of staff who have had contact with other staff members who test positive (if N95 is not default PPE for facility).

4. Routine interval testing of staff who work at more than one facility, one of which treats known COVID-19 positive patients or high-risk patients or that does not enforce similar infection control standards (i.e., COVID-19 positive medical unit or nursing home).

ENDOSCOPY UNIT PROTOCOLS AND WORKFLOW

1. All patients and escorts should be notified of the facility's workflow policies at the time of scheduling and upon administration of pre-procedure QBS.

2. No escorts or family members are permitted in the facility (unless pre-arranged for the purpose of necessary assistance; such individuals will go through a similar screening process to that of patients); with patient pick-up at facility entry or curbside.

3. Functional waiting rooms should be closed. If needed for overlapping patients (should be avoided) or essential escorts, then social distancing should be employed.

4. Patients are required to wear masks throughout their visit to the facility from entrance to discharge. Individual facilities will need to determine whether masks will be made available upon entry.

5. Entry into patient care space is permitted only for patients who pass the temperature check and on-site QBS.

6. Separate entry and exit paths should be utilized where feasible. Uni-directional workflow should be encouraged.

7. Patient flow through the unit should minimize points of contact (e.g., nursing admission and IV placement); obtaining consent should be performed in one dedicated patient bay with subsequent entry into procedure room.

8. Consider dedicated patient bays or spaces to minimize points of contact and to ensure appropriate patient occupancy of facility rooms (i.e., patient admitted and recovered in same space).

9. In units performing procedures on COVID-19 positive patients, patients under investigation (PUI), failed QBS screening, consider employing a dedicated team of endoscopist, staff, procedure room and recovery space.

10. Currently, recommendations for endoscopy procedures should also apply to motility studies. As the COVID-19 situation progresses, more specific guidance on motility studies may be needed from official bodies such as the American Neurogastroenterology and Motility Society (ANMS) https://motilitysociety.org.

11. Endoscope and Room Cleaning
    A. For positive pressure rooms with standard air exchange rates (i.e., 15/hour), there is a paucity of evidence regarding endoscopy and CDC-based changes to standard room empty times (to allow settling of potential aerosol to the floor). Consider a 30-minute to 60-minute inter-procedure period, depending on room air flow, and consult engineering to confirm flow rates.

    B. Room cleaning: all surfaces including endoscopy towers, desks, workstations, anesthesia equipment, etc. should be wiped down with appropriate disinfectant.

    C. Take care with initial endoscope cleaning in the procedure room which may generate splashes.

    D. No additional disinfection steps beyond manufacturer recommendations for endoscopes need be taken.

E. While procedural volume will likely be sharply reduced for the foreseeable future, consider staggered cases based on number of rooms (minimizing patients waiting for procedures or for recovery space and discharge).

F. Consider:
   a. Additional time required for full room cleaning after settling of aerosol (provide environmental services staff with N95s or equivalent).
   b. Additional time required for appropriate PPE donning and doffing.
   c. Accounting for potential physician or staff fatigue due to use of PPE.
   d. Routine molecular testing may obviate need for extended room turnover times.

PERSONAL PROTECTIVE EQUIPMENT

According to national guidelines, recommendations for provider PPE use during endoscopy are dependent on the community prevalence of infection, results of pre-procedure testing or QBS-determined risk-assessment. Given the high prevalence of COVID-19 in the New York region, there is likely a significant false negative rate associated with PCR testing. Accordingly, during procedures with high risk of aerosolization (i.e., upper endoscopy) use of full PPE including N95 is recommended. These parameters are subject to change, particularly as the incidence of COVID-19 drops in New York. At a minimum, universal precautions[8] should be maintained for any procedure in which full PPE is not warranted.

If an adequate supply of N95 masks or equivalent is not available, consider the following:

1. Limiting procedures to lower GI procedures until adequate N95 masks can be obtained or prevalence-category is downgraded.

2. Reusing the mask after employing suggested methods of cleaning (as per CDC/NIOSH guidelines on extending the life of a respirator mask).[7]

PATIENT CONSENT

Informing patients of the risk of infection is encouraged since transparency may help to gain the trust of patients re-entering the medical environment. However, adopting COVID-19 specific consent language attempting to release the unit from claims of transmission is controversial. Some legal opinions advise against this unless there is a state-specific mandate. No accrediting bodies including CMS have mandated such amendments and this, as with any informed consent, can be fraught with potential problems. If this is something your unit wishes to pursue, consult your legal counsel for guidance.

PROCEDURE FOLLOW-UP FOR COVID-19

There are no universal guidelines regarding post-procedure follow-up of patients or healthcare workers. However, given the ongoing need to assess whether further ramping up versus scaling back of endoscopy services should be considered, as well as the overarching need to mitigate patient concern about re-entering the medical environment, NYSGE highly recommends adopting a consistent protocol:

1. Standard facility-based follow-up protocols should continue to be enforced.

2. Patients should be contacted 14 days after their procedure specifically to determine whether they have tested positive for COVID-19 or if they have developed symptoms concerning for interval infection. Again, routine pre-procedure PCR testing may obviate the need for additional follow-up protocols in the future.

3. COVID-19 transmission outcomes should be maintained in a database format to provide periodic facility-based metrics or included in a larger NYSGE-based database (see below)

4. Interval assessment of healthcare workers involved in endoscopic procedures regarding COVID-19 status or concerning symptoms should similarly be performed. As above, these should be analyzed for facility-based metrics as well or included in a larger NYSGE-based database (see below)

FUTURE TOPICS FOR NYSGE

1. Monitoring of national guidelines and appropriate revision of suggested best practices accordingly.
2. Monitoring for changes in prevalence designation and subsequent changes in recommendations.
3. Needs assessment survey of NYSGE members regarding best practices and monitoring for experience.
4. Identification of PPE supply chain, quality assurance, and fit testing.
5. Resources for questions about quarantine management and contact tracing.
6. Identification of testing options, resources such as locations or services for testing, and recommendations.
7. Outcomes for studies regarding endoscopy-related risk of infection for patients and healthcare workers.

TABLE 1: Risk Factors for Severe Illness from COVID-19*

Asthma
Chronic lung disease
Diabetes
Serious heart conditions
Chronic kidney disease on hemodialysis
Severe obesity
Age >65 years old
Residents of nursing homes or long-term care facilities
Immunocompromised
Liver disease

*From CDC: https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/groups-at-higher-risk.html

TABLE 2: Full Personal Protective Equipment (PPE)

N95/PAPR/Elasoteric mask
Gowns- impervious where available
Face Shield/goggles
Hair net
Gloves

TABLE 3: Questions to Assess for Risk of Infection with COVID-19

Fever > 100.4F (38°C)
Cough
Shortness of breath, chest tightness
Chills
Muscle pain
New loss of taste or smell
Nausea with or without Vomiting
Diarrhea
Sore throat

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