Optimizing Endoscopy Efficiency and flow during and after COVID-19

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Worldwide Decline in Endoscopic procedures

- In UK endoscopic activity reduced by 95% from 35,000 to 1700 per week in April 2020
- Survey of North American Alliance reported 67% practices operating at<10% capacity
- Report from 190 hospitals, 39 healthcare systems in the US across 23 states, CRC screening declined by 86% in March 2020

Forbes N et al. Gastroenterology 2020;159: 772-774
Principles applied to Resumption of Endoscopy

- Protecting patients
- Protecting Staff
- Prioritizing procedures
- Pre-procedure triage and testing
- Endoscopy flow
- Follow up after Endoscopy
Protecting Patients and Staff

Protecting patients
• Limited appointments
• Limit waiting room time
• Limit entry into medical center for patient only
• Universal masking
• Symptom check +/- temperature check at entry
• Hot and cold zones in the medical facility
• Pre procedure testing for AGP

Protecting staff
• Face shields and masks universal
• N95s and enhanced PPE in Endoscopy areas
• Education, new protocols
• Thorough cleaning of room b/w procedures
• Enhanced air exchange in endoscopy rooms

### The number of air changes per hour and time and efficiency.

<table>
<thead>
<tr>
<th>ACH</th>
<th>Time (mins.) required for removal 99% efficiency</th>
<th>Time (mins.) required for removal 99.9% efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>138</td>
<td>207</td>
</tr>
<tr>
<td>4</td>
<td>69</td>
<td>104</td>
</tr>
<tr>
<td>6+</td>
<td>46</td>
<td>69</td>
</tr>
<tr>
<td>8</td>
<td>35</td>
<td>52</td>
</tr>
</tbody>
</table>
## Prioritizing Endoscopic Procedures

<table>
<thead>
<tr>
<th>Priority 1</th>
<th>Priority 2</th>
<th>Priority 3</th>
<th>Priority 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Overt Gi hemorrhage</td>
<td>• FIT +</td>
<td>• Overdue surveillance</td>
<td>• Surveillance due this year</td>
</tr>
<tr>
<td>• Cholangitis</td>
<td>• Stable Anemia</td>
<td>• High risk screening (e.g. FAP, HNPCC)</td>
<td>• Screening for Barrett’s</td>
</tr>
<tr>
<td>• Suspected malignancy</td>
<td>• IBD</td>
<td>• Chronic diarrhea</td>
<td>• GERD</td>
</tr>
<tr>
<td>• Iron deficiency anemia</td>
<td>• Variceal banding</td>
<td>• Follow up of ulcer</td>
<td>• Screening for varices</td>
</tr>
<tr>
<td>• Dysphagia</td>
<td>• Follow-up for ulcer</td>
<td>• Stent exchange</td>
<td>• Average risk CRC screening</td>
</tr>
<tr>
<td>• Palliation of GI obstruction</td>
<td>• RFA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• PEG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• EMR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Overdue FIT+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Priority 1**
- **Priority 2**
- **Priority 3**
- **Priority 4**
Pre-procedure testing for AGP

- Pre-procedure screen: 7, 3, 1 day prior
- COVID RT-PCR test 1-3 days prior
- Rapid COVID test the day of
- Symptom screen day of

Community prevalence of disease (low vs. high)

Symptom screen
Enhanced PPE and cleaning/room turnover

IT solution such as automated texts/secure mssg
Extra staff

RT-PCR testing + symptom screen
Regular PPE
Endoscopy Flow Map

- Waiting room/lobby
- Pre-Procedure area
- Procedure
- Recovery area
- Lobby*

* Ideally through a different door. Goal is linear flow
Lobby Flow Map

Arrival

Symptom screen

Check In

Symptom screen

Patient’s waiting?

Y

Go to Pre-Procedure

N

Room available?

Chart(s) Brought to Pre-Proc

N

Wait in car or overflow area

Y

Add’l Patients Check In

More Patient’s waiting?

Y

Add’l Patients Check In

N

Wait in car or overflow area
## Considerations for Endoscopy Efficiency

### Extra Staff
- Nursing staff for pre procedure phone calls
- Patient education
- Arranging testing
- Tech for room cleaning
- Follow up phone call in 7-14 days

### Extra Space
- Waiting areas
- Rapid testing area
- Storage for PPE
- Extra bathrooms

### Extra Time
- Symptom screen
- Added consent
- Room turnover
- Terminal cleaning
- Instructions in recovery
- Follow up in 7-14 days
Resumption of Endoscopy worldwide

- **North America:**
- Survey of 123 GI practices (55% ASC; 45% hospital based)
- 90% decrease in endoscopy volume
- Resumption in median of 55 days
- 3% centers at 100% capacity
- 78% at 25-49%
- Preprocedural testing planned by 49.2%
- 52.9% will use N95s even if test negative

### Barriers to increasing volume

<table>
<thead>
<tr>
<th>Barriers to increasing volume</th>
<th>N=123</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited COVID testing capacity</td>
<td>69%</td>
</tr>
<tr>
<td>Reluctant patients</td>
<td>65%</td>
</tr>
<tr>
<td>Limited PPE</td>
<td>54%</td>
</tr>
</tbody>
</table>

Kushnir VM et al. CGH 2020;18:2287-2294
Resumption of Endoscopy worldwide

- **Germany:**
  - Survey of 676 endoscopy units, April 1-7
    
    | Current volume | N=123 |
    |----------------|-------|
    | >60%           | 39%   |
    | 40-60%         | 16%   |
    | <40%           | 45%   |

- 91% identified patients at risk in a structured manner
- **Separation of patients at risk:** 20% complete, 47% partial, 33% none
- **Routine swabs:** testing rate 5.5% personnel, 15% patients

**Summary**

Post Pandemic Work Flow

Gut 05 June 2020. doi: 10.1136/gutjnl-2020-321688
Keep Calm, Keep Safe and Scope on

Recommended PPE for suspected / confirmed novel coronavirus cases

- Face shield / Goggles / Cap
- N95 respirator
- Isolation gown (AAMI level 3)
- Disposable gloves