

# 67128-Supplementary Material

## Supplementary Material 1- Survey Instrument (11-point questionnaire)

### DEMOGRAPHIC DATA:

1. Sex: Male  Female
2. Age: \_\_\_\_\_ years
3. Height \_\_\_\_\_ m
4. Weight \_\_\_\_\_ kg
5. Hand dominance      Left       Right
6. Are you a/an
  - a. Endoscopist
  - b. GI Resident
  - c. Endoscopy Nurse
  - d. Endoscopy Technician

### PRACTICE RELATED DATA:

1. How much of your time do you spend performing muscle strengthening exercises, biking, jogging/running per week?
  - a. <150 minutes of physical exercise every week
  - b. 150 minutes of physical exercise every week
  - c. >150 minutes of physical exercise every week
  - d. None
2. Do you currently perform endoscopy (please make a circle around the answer)
  - a. Yes
  - b. No
3. Number of years performing endoscopic procedures \_\_\_\_\_

4. Approximate no. of endoscopies performed per week \_\_\_\_\_
5. What percentage of work do you spend performing endoscopies?  
\_\_\_\_\_
6. Of the time you spend doing endoscopy, what percentage do you spend doing the following: (please circle)

Procedure	Percentage Time											
	0	10	20	30	40	50	60	70	80	90	100	
EGD												
Colonoscopy												
ERCP												
EUS												
Enteroscopy												
Therapeutic endoscopies												
Bleeders												
PEG insertion												

7. Have you experienced injury (pain or numbness) in your neck, back, or upper or lower limbs, following endoscopy list or as a constant feature?
- a. Yes
- b. No

**Facts about injury**

1. Type of injury (circle multiple if needed):
- a. Thumb pain    i. Left    ii. Right    iii. Both
- b. Shoulder pain    i. Left    ii. Right    iii. Both
- c. Hand pain    i. Left    ii. Right    iii. Both
- d. Neck/upper back pain
- e. Lower back pain

- f. Elbow pain      i. Left   ii. Right   iii. Both
- g. Hand numbness   i. Left   ii. Right   iii. Both
- h. Carpal tunnel syndrome
- i. Other \_\_\_\_\_

2. Is/was pain caused by endoscopy?

- a. Yes
- b. No
- c. Maybe

3. When is/was pain evident?

- a. At work performing endoscopy
- b. At work performing endoscopy/clinic
- c. At work/outside work
- d. Outside work only

4. How much does/did this bother you?

- a. 1 (least)
- b. 2
- c. 3
- d. 4
- e. 5 (most)

5. How long have you had these symptoms (circle unit after writing answer)?  
\_\_\_\_\_ months/years

6. Is it static or increasing? \_\_\_\_\_

7. Have you ever had to take time off from performing endoscopy because of musculoskeletal injury perceived related to endoscopy?

- a. Yes
- b. No

8. If yes to above, what is the longest consecutive amount of time you have taken off work because of a musculoskeletal injury perceived to be related to endoscopy (circle unit with answer)?

\_\_\_\_\_ days/months/years

9. Do/did you take any medicine for your symptoms? \_\_\_\_\_  
a. Local or oral or injectable? \_\_\_\_\_  
b. How frequently? \_\_\_\_\_
10. Do you perform any environmental modifications during endoscopy?  
a. None  
b. Height-adjustable examination table  
c. Position of endoscopic monitor in front at eye level  
d. Position of the cardiac monitor in front  
e. Stopped helping to move patients after procedures  
f. Sit while you perform colonoscopy  
g. Any other? \_\_\_\_\_
11. Where is the cardiac monitor placed during endoscopies?  
a. At the headside of the patient  
b. Behind the patient  
c. At the foot end of the patient  
d. Other: \_\_\_\_\_
12. Where is the endoscopic monitor placed during endoscopies?  
a. At the headside of the patient  
b. Behind the patient  
c. At the foot end of the patient  
d. Other: \_\_\_\_\_
13. Do you suggest any of the following changes should be made to improve ergonomics?  
(circle multiple if needed)  
a. Change in position of the cardiac monitor; where: \_\_\_\_\_  
b. Change in position of the endoscopic monitor; where: \_\_\_\_\_  
c. Monitors adjusted at eye level  
d. A chair to sit on while performing your role for the duration of procedure  
e. Break between consecutive procedures  
f. Stopping to help move patients after procedures  
g. Other : \_\_\_\_\_  
h. None

## Supplementary Material 2

### Survey Instrument (13-point questionnaire)

Hospital Name: \_\_\_\_\_

Is the endoscopist monitor located directly in front of endoscopist?	Yes	No
Is the endoscopist monitor height adjustable to accommodate the height of endoscopist and his or her preferred viewing distance/ angle?	Yes	No
Monitor booms and mobile stands available	Yes	No
Time in-between patients less than 10 min	Yes	No
Endoscope support stand available	Yes	No
Anti-fatigue mats/gel floor pads available	Yes	No
2-piece lead apron	Yes	No
Height adjustable examination table	Yes	No
Tiltable examination table	Yes	No
Computer stations should be adjustable	Yes	No
Nonslip flooring and covering bundled wires	Yes	No
Is the cardiac monitor adjustable	Yes	No
Is ERCP room in the suite	Yes	No