



## CASE STUDY: BARNES JEWISH WEST COUNTY HOSPITAL

Seth A. Gross, MD<sup>1</sup>, Connie Hall, BSN, RN, CGRN<sup>2</sup>, Blair Eason, RN<sup>2</sup>, Jean Wang, MD, PhD<sup>3</sup>

<sup>1</sup>NYU Langone Medical Center, <sup>2</sup>Barnes Jewish West County Hospital, <sup>3</sup>Washington University in St. Louis

### Background

Barnes Jewish West County Hospital is a 108-bed facility based in St. Louis, MO and is affiliated with Washington University in St. Louis. The hospital's outpatient endoscopy unit performs approximately 6,500 colonoscopy per year and is a referral center for high BMI patients. **Three staff members had undergone surgery due to work-related MSDs. Additionally, 60% of staff reported pain or injury attributed to manual pressure and repositioning.**

### Results

ColoWraps were used for 271 patients. 252 (92.3%) patients were indicated for ColoWrap use by meeting BMI criteria (> 35); 19 (6.7%) patients were indicated due to prior difficult colonoscopy, abdominal hernia, or multiple prior surgeries. Colonoscopy was completed in 266 (98.2%) patients. Overall, ColoWrap use resulted in a **73.6% reduction in the use of manual abdominal pressure (50% vs 13.3% of procedures) and a 59.5% reduction (20% vs 8.0% of procedures) in the use of patient repositioning. 100% of endoscopy staff reported significant to very significant reductions in musculoskeletal pain, general fatigue, cecal intubation time, and frequency of prolonged procedures.** All staff also reported a significant to very significant improvement in their ability to focus on other procedural duties during colonoscopy.



**Minimize Manual  
Abdominal Pressure**

**73.6%**

Patient manual pressure  
reduced by 73.6%

**Minimize Patient  
Repositioning**

**59.5%**

Patient repositioning  
reduced by 59.5%

**Mitigate Strain  
and Pain**

**100%**

100% of staff-reported a  
reduction in MSK pain

## Staff Satisfaction Survey Results

To what extent has the use of ColoWrap:

	0 - Not at All	1	2	3	4	5 - Very Significantly
Shortened time to cecum	0%	0%	0%	14.3%	42.9%	42.9%
Prevented delays	0%	0%	0%	28.6%	42.9%	28.6%
Improved patient comfort	0%	0%	0%	42.9%	42.9%	14.3%
Allowed you to focus on other tasks	0%	0%	0%	0%	71.4%	28.6%
Reduced your MSK pain	0%	0%	0%	0%	57.1%	42.9%
Reduced your general fatigue level	0%	0%	0%	0%	57.1%	42.9%

## Methods

This was a single center observational study. In September 2020, a baseline assessment found that manual pressure and patient repositioning were being used in 50% and 20% of colonoscopies, respectively. Three staff members had undergone surgery due to work-related MSDs and 60% of endoscopy staff reported pain or injury that they attributed to manual pressure and repositioning. BJC West County adopted the following patient criteria for ColoWrap use: BMI > 35; prior difficult/incomplete colonoscopy; abdominal hernia; or multiple prior abdominal surgeries. Procedure data, including colonoscopy completion, procedure time, and frequency of manual pressure and repositioning were tracked for each case in which a ColoWrap was used through 05/2021. Staff completed a satisfaction survey in 06/2021. We aimed to determine if use of the ColoWraps would reduce the need for manual pressure and repositioning and positively impact staff safety and satisfaction.

## Conclusion

In this observational study, use of the ColoWrap Colonoscopy Compression Device in patients with BMI > 35 history of difficult colonoscopy, abdominal hernia, and/or multiple prior abdominal surgeries **reduced the need for manual abdominal pressure and patient repositioning** as compared to a baseline assessment. **Endoscopy staff reported reductions in musculoskeletal pain, fatigue, and frequency of prolonged procedures with ColoWrap use.**

## References

1. Biggers L. Endoscopy Staff Injury: A Serious Problem Hidden in Plain Sight. *International Journal of Safe Patient Handling & Mobility*. 2018;8(4)
2. Crockett S, Dellon ES, Biggers L, Ernst DA. Use of Patient Abdominal Compression Device Reduces Staff Musculoskeletal Pain Associated With Supporting Colonoscopy: Results From a Randomized Controlled Trial. *Gastroenterol Nurs*. 2021 Mar-Apr 01 2021;44(2):136-145. doi:10.1097/SGA.0000000000000550