

## Use of a simulation-based training program at NF/SG VA Health System to train residents and nurse practitioners in Lower Gastrointestinal Tract Endoscopy

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**Background:** Colorectal cancer is the 4<sup>th</sup> most common cancer and the second cause of cancer deaths in the United States. The demand for colon cancer screenings and limited availability of providers has created a backlog of patients waiting for this procedure. Commercial VR simulators are currently available to teach a variety of procedural tasks including endoscopy. Traditional medical procedure training comprises the “see one, do one” method of teaching. Several recent studies validate the ability of simulators to accelerate the learning curve for novice endoscopists. Nurses in the UK have been performing endoscopic procedures in the since the 1970s<sup>1</sup>. A recent study out of the UK reports success in the training of nurses in endoscopic procedures using a simulator<sup>2</sup>, however there is little research data available on the translation of performance on the simulator to actual patient encounter.

**Hypothesis:** Nurse practitioners performance can be equivalent to surgical residents using comparison of data collected on Immersion lower endoscopy simulator looking at percent of mucosa visualized, patient discomfort and visualization of abnormal anatomy.

**Methods:** This paper discusses the simulator data on the random first participants introduced to the Immersion lower GI simulator curriculum. This is part of a larger study that will track learner’s performance when they perform procedure on actual patients. Initial study participants comprised three types of learners: a senior resident trained in traditional see one do one mode, a third year surgical resident with limited endoscopy training and a nurse practitioner beginning endoscopic training using a simulator. After informed consent and completing a survey on baseline experience participants had the opportunity to complete the pre set modules on the simulator which included flexible sigmoidoscopy and colonoscopy.

### Results:

	initial lower GI case			last lower GI case		
	%Mucosa visualized	Discomfort %/time	Abnormality visualized Y/N	%Mucosa visualized	Discomfort %/time	Abnormality visualized Y/N
Senior Surgical Resident	95.35	.9/9secs	Y	99.79	2.14/15secs	Y
3 <sup>rd</sup> year resident	96.56	5.36/57secs	Y	99.62	2.35/15secs	Y
Nurse Practitioner	15.15	0/0secs	Y	62.75	3.06/73secs	Y

**Conclusions:** Though limited conclusions can be gathered from this limited initial sample, trend show that both groups improved over time. The senior resident’s level of expertise was demonstrated. Nurse practitioner started out with no prior experience and focused on performing mostly flexible sigmoidoscopies. Further study needed to answer if residents’ and Nurse practitioners’ performance on the simulator will reflect performance on real patient encounters.

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<sup>1</sup> Spencer, R.J., Utilisation of nurse endoscopists for sigmoidoscopic examinations. *Dis. Colon Rectum* 1977;20:94-96

<sup>2</sup> Kneebone, R.L., Nestel, D., Moorthy, K., Taylor, P., Bann, S., Munz, Y., & Darzi, A. *Learning the skills of flexible sigmoidoscopy – the wider perspective* *Med Educ* 2003;37:50-58