

# Emergent colon surgery at a Disproportionate Share Hospital: An underappreciated vulnerable population

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## Introduction

Emergency colon surgery is associated with a higher mortality and morbidity than when these cases are performed electively. Disproportionate share hospitals (DSH), treat a higher proportion of uninsured and lower income patients. Prior studies have demonstrated that patients at DSH have more comorbidities, which are often poorly controlled. Despite this, reported outcomes are varied, with some studies reporting outcomes similar to non-DSH for elective procedures. Limited data exist regarding emergency colon surgery at DSH. The aim of this study is to examine the indications, comorbidities, and outcomes after emergency colorectal surgery at a DSH in southern Louisiana.

## Methods

This was a retrospective review of a prospectively maintained dataset from 2015-2019 of patients who underwent emergent colorectal procedures at a single DSH. The surgical indications, procedures performed, patient comorbidities, and outcomes were analyzed. Complications were assessed by Clavien-Dindo classification, with grade III or greater considered a serious complication.

## Results

187 emergent colorectal cases were identified. 67.4% of patients were men. Mean age was 50.6 years. 54.0% of patients were African American and 28.3% white. 47.1% of patients were on Medicaid and 10.2% of patients were self-pay. The most common indications for emergency colorectal surgery were colorectal cancer (29.9%), diverticulitis (12.8%), and Crohn's disease (10.7%). 73.2% of cases were open and 19.8% laparoscopic. 13.4% patients were diabetics, 39.6% were hypertensive requiring medications, and 2.1% had HIV. 47.6% were current smokers and 17.1% used illicit drugs. 13.4% used steroids in the month prior to their operation. Mortality rate within 90 days was 13.4%. Overall serious complication rate was 30.5%.

## Patient Comorbidities

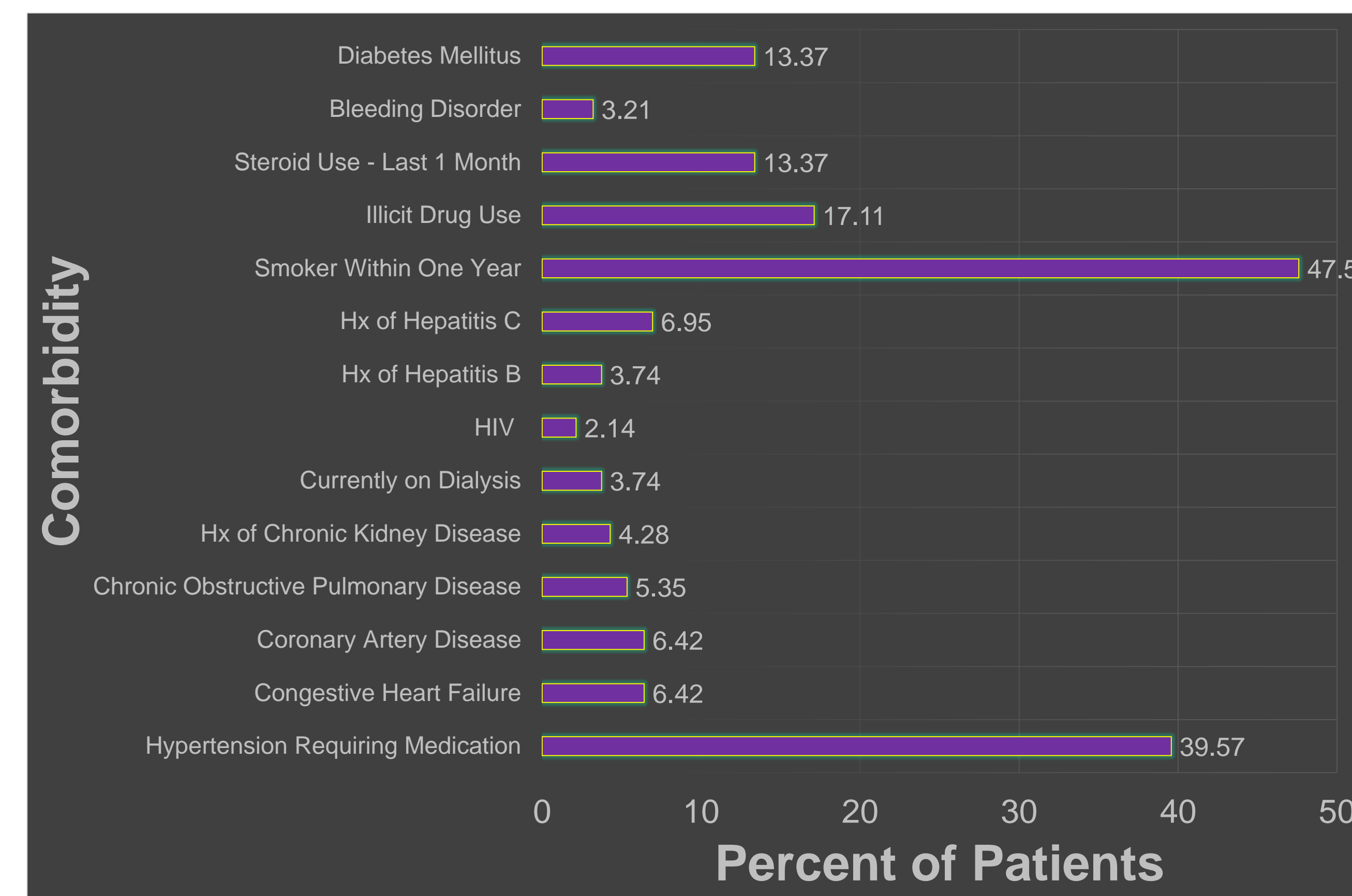


Figure 1: Comorbidities of patients receiving colorectal surgery. This information was collected from patient charts. Of note, 39.6% of patients had hypertension requiring medication, 47.6% were every day smokers within one year of surgery, and 2.1% were HIV positive.

## Indications for Surgery

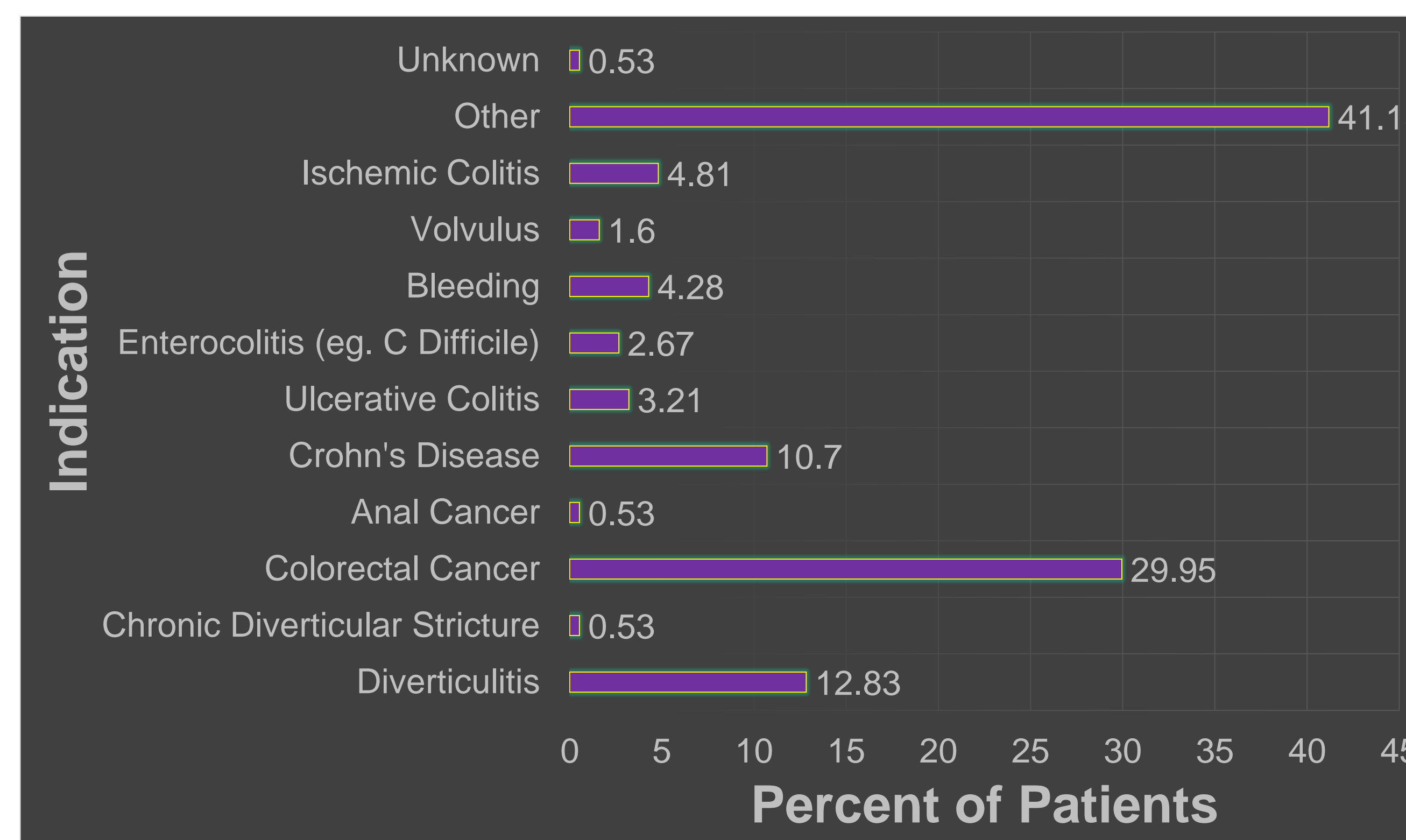


Figure 2: Indications for colorectal surgery. The most common indications were colorectal cancer (29.9%), diverticulitis (12.8%), and Crohn's disease (10.7%).

## Clavien-Dindo for Complications

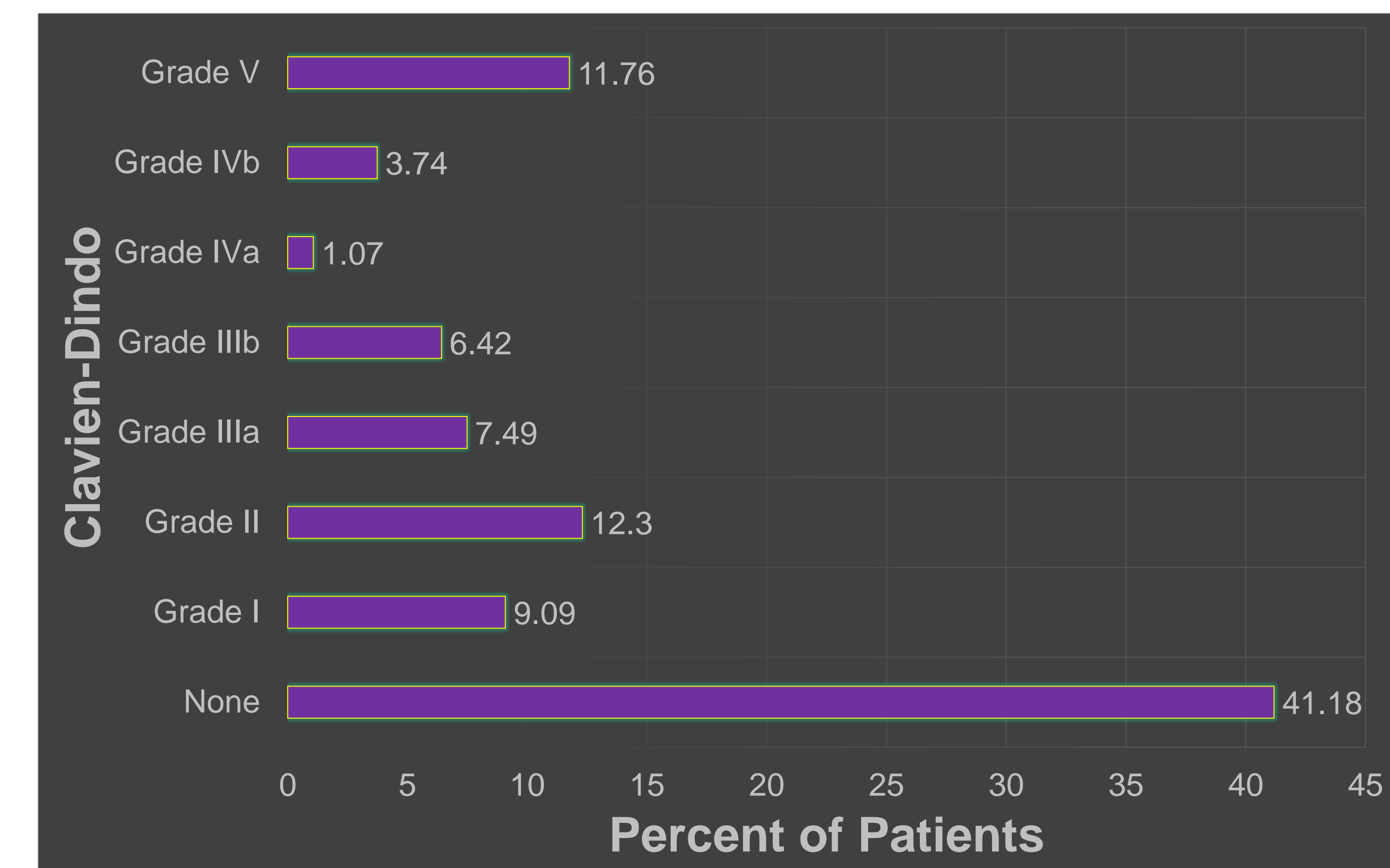


Figure 3: Complications were assessed by Clavien-Dindo classification, with grade III or greater considered a serious complication. The overall serious complication rate was 30.5%.

## Discussion

Patients undergoing emergent colon surgery at a DSH suffer high mortality and complication rates. The most common indications for surgery, including colorectal cancer and Crohn's disease, emphasize the need for better preventative and baseline medical care in this vulnerable population. The only prior study evaluating emergency colorectal procedures at a DSH reported zero cases for malignancy or Crohn's, suggesting heterogeneity and regional variation in vulnerable populations. This limits generalizability of the already scant data on DSH. In addition to other commonly reported comorbid conditions, this study highlights the high rate of HIV: 2.1% compared to a national prevalence of 0.5%. The high rate of HIV may be an underreported and understudied contributor to complications after emergency colorectal surgery. Our data suggests that for emergent colorectal operations, DSH populations differ across the country. As such, a uniform approach can not be used for evaluating and treating these populations.