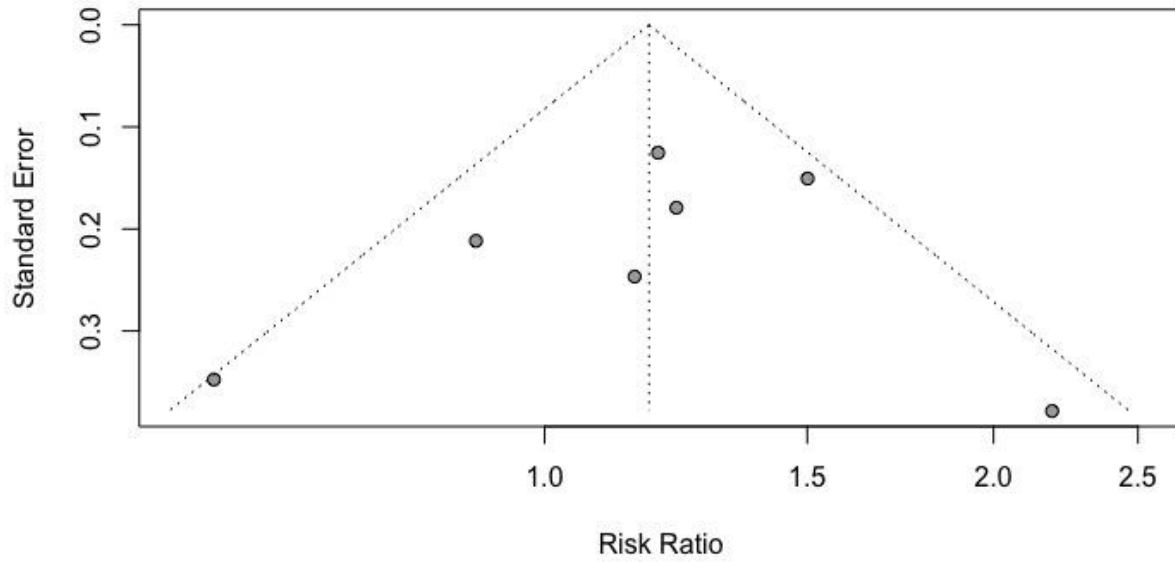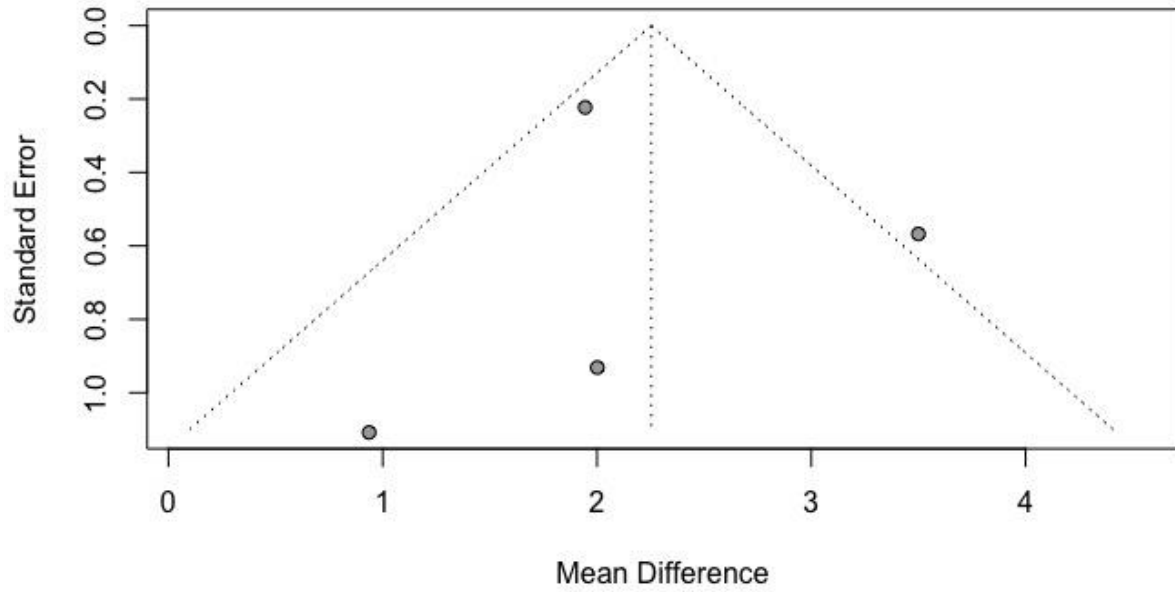Supplemental Figures 1: Funnel Plots

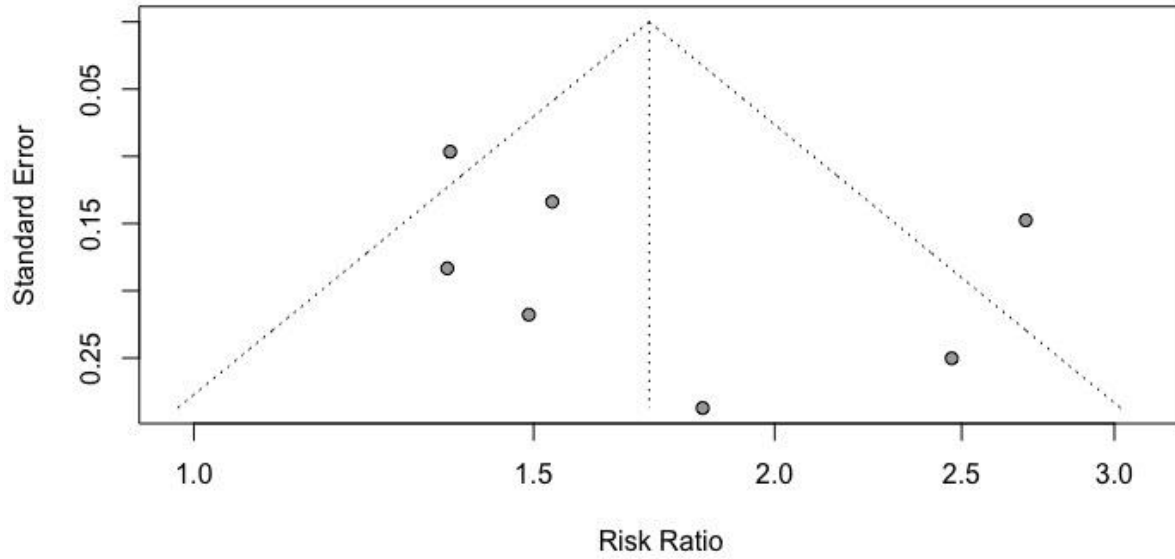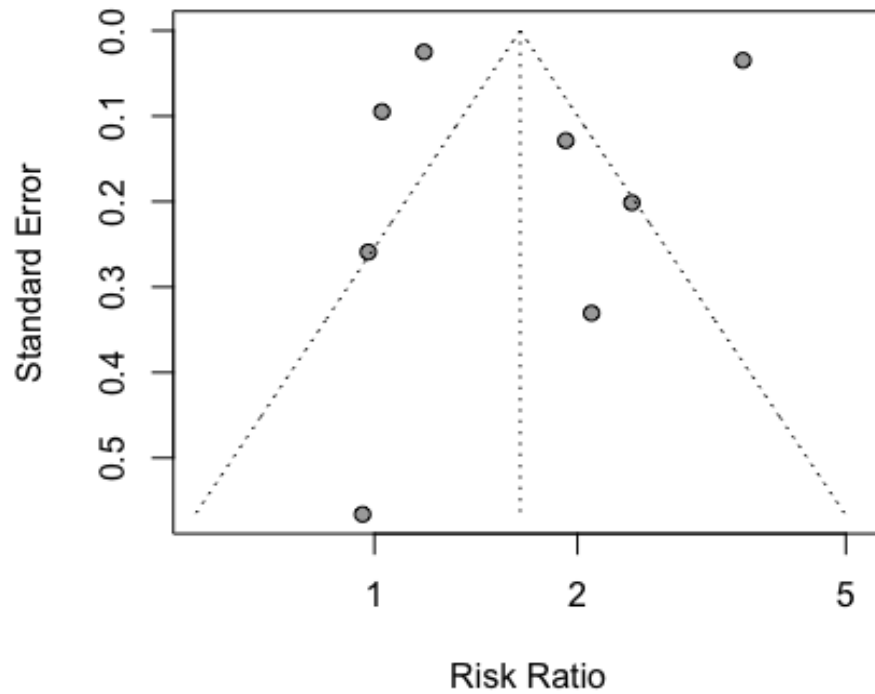**Supplemental Figure 1a.** 30-day readmissions funnel plot

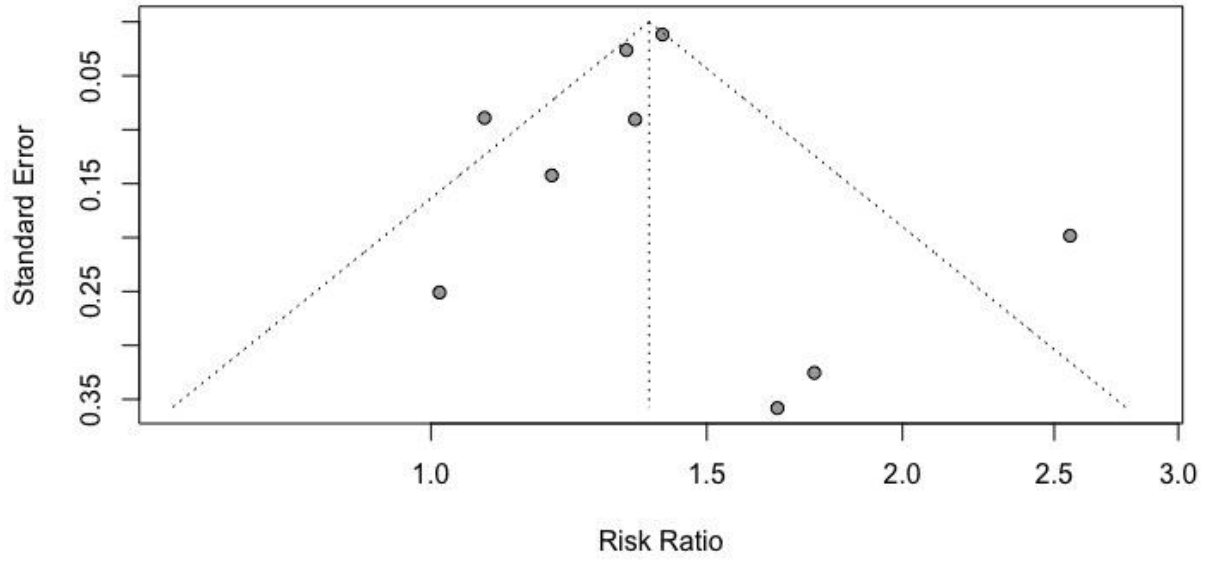**Supplemental Figure 1b.** Length of stay funnel plot

Supplemental Figure 1c. Prior IBD-related surgery funnel plot
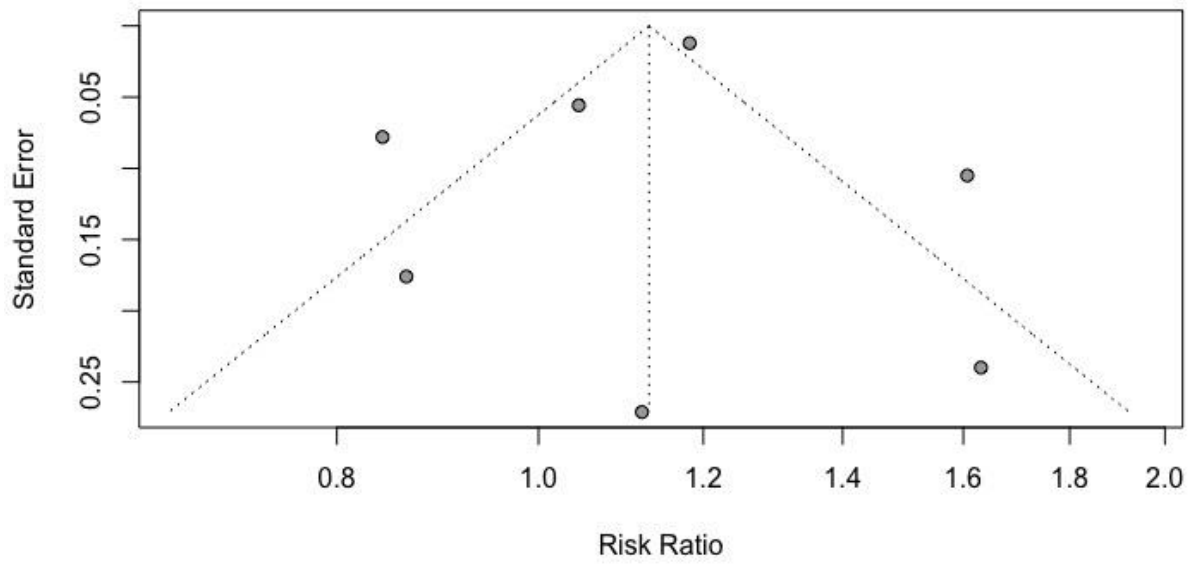

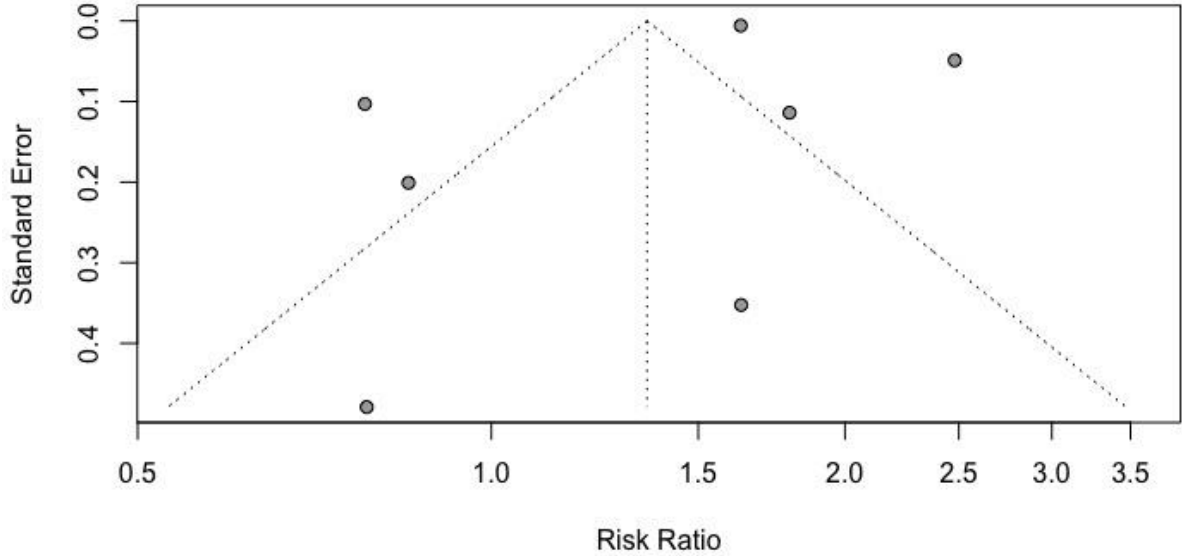**Supplemental Figure 1d.** Current IBD-related surgery funnel plot

Supplemental Figure 1e. Biologics funnel plot

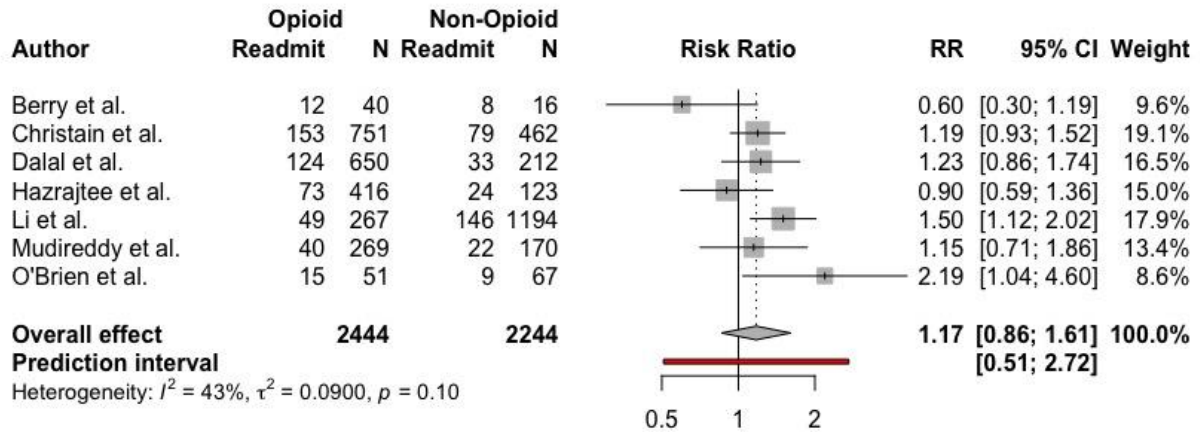**Supplemental Figure 1f.** Immunomodulators funnel plot

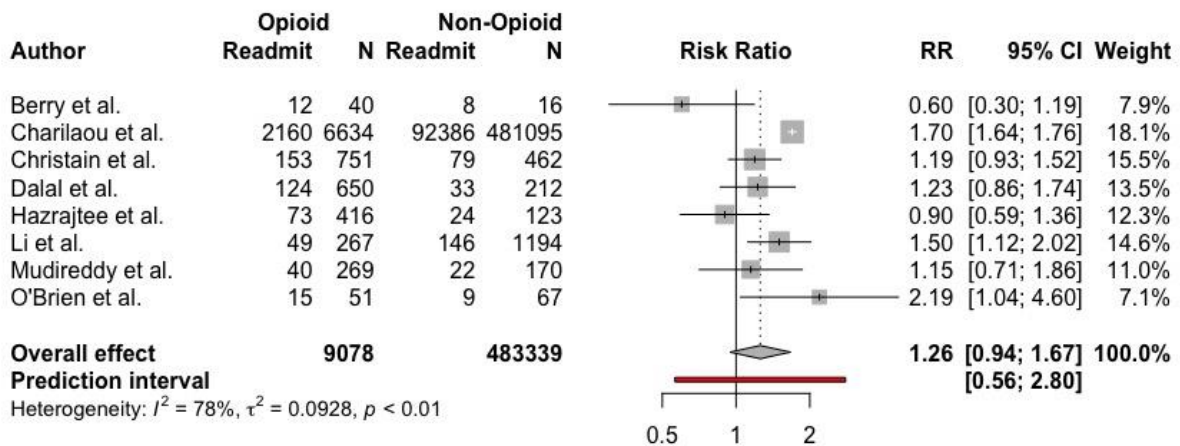**Supplemental Figure 1g.** Steroids funnel plot

Supplemental Figures 2: Forest Plots for 30-Day Readmissions and Sensitivity Analysis

Supplemental Figure 2a: Association between 30-day readmissions and opioid use

Author	Opioid Readmit	N	Non-Opioid Readmit	N	Risk Ratio	RR	95% CI	Weight
Berry et al.	12	40	8	16		0.60	[0.30; 1.19]	9.6%
Christain et al.	153	751	79	462		1.19	[0.93; 1.52]	19.1%
Dalal et al.	124	650	33	212		1.23	[0.86; 1.74]	16.5%
Hazrajtee et al.	73	416	24	123		0.90	[0.59; 1.36]	15.0%
Li et al.	49	267	146	1194		1.50	[1.12; 2.02]	17.9%
Mudireddy et al.	40	269	22	170		1.15	[0.71; 1.86]	13.4%
O'Brien et al.	15	51	9	67		2.19	[1.04; 4.60]	8.6%
Overall effect		2444		2244		1.17	[0.86; 1.61]	100.0%
Prediction interval							[0.51; 2.72]	

Heterogeneity: $I^2 = 43\%$, $\tau^2 = 0.0900$, $p = 0.10$

0.5   1   2

Supplemental Figure 2b: Sensitivity analysis including opioid use disorder in the exposure of interest

Author	Opioid Readmit	N	Non-Opioid Readmit	N	Risk Ratio	RR	95% CI	Weight
Berry et al.	12	40	8	16		0.60	[0.30; 1.19]	7.9%
Charilaou et al.	2160	6634	92386	481095		1.70	[1.64; 1.76]	18.1%
Christain et al.	153	751	79	462		1.19	[0.93; 1.52]	15.5%
Dalal et al.	124	650	33	212		1.23	[0.86; 1.74]	13.5%
Hazrajtee et al.	73	416	24	123		0.90	[0.59; 1.36]	12.3%
Li et al.	49	267	146	1194		1.50	[1.12; 2.02]	14.6%
Mudireddy et al.	40	269	22	170		1.15	[0.71; 1.86]	11.0%
O'Brien et al.	15	51	9	67		2.19	[1.04; 4.60]	7.1%
Overall effect		9078		483339		1.26	[0.94; 1.67]	100.0%
Prediction interval							[0.56; 2.80]	

Heterogeneity: $I^2 = 78\%$, $\tau^2 = 0.0928$, $p < 0.01$

0.5   1   2

Supplemental Figures 3: Forest Plots of Subgroup Analysis

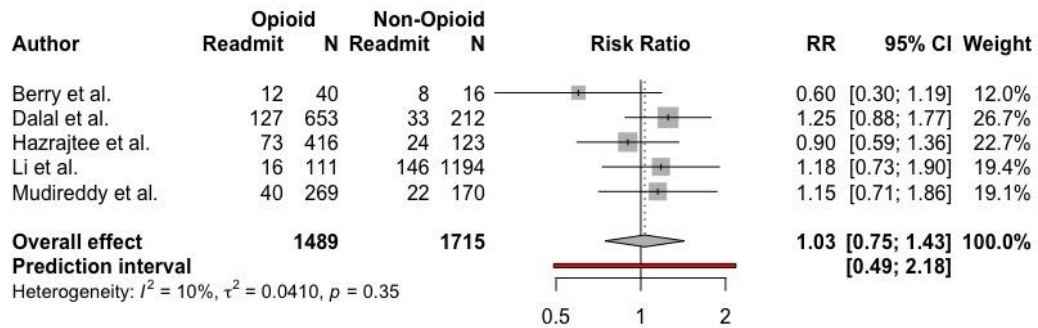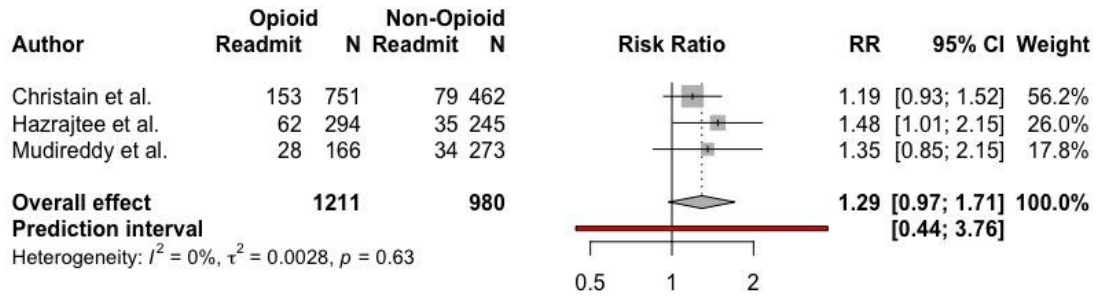**Supplemental Figure 3ai.** Association between 30-day readmissions and opioid use prior to admission
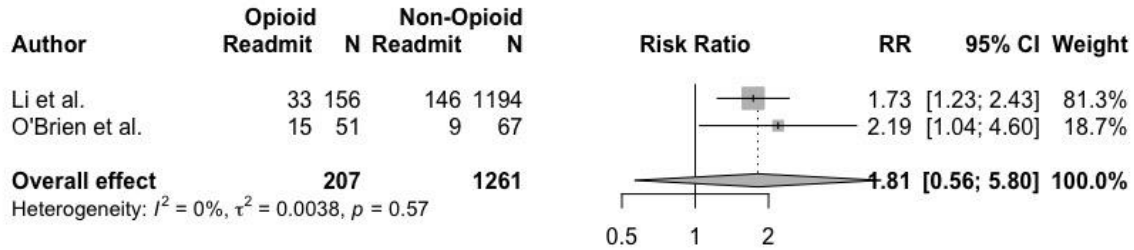
Supplemental Figure 3aii. Association between 30-day readmissions and opioid use during admission

Supplemental Figure 3aiii. Association between 30-day readmissions and opioid use at discharge

Author	Opioid Readmit	N	Non-Opioid Readmit	N	Risk Ratio	RR	95% CI	Weight
Christain et al.	153	751	79	462		1.19	[0.93; 1.52]	56.2%
Hazrajtee et al.	62	294	35	245		1.48	[1.01; 2.15]	26.0%
Mudireddy et al.	28	166	34	273		1.35	[0.85; 2.15]	17.8%
Overall effect		1211		980		1.29	[0.97; 1.71]	100.0%
Prediction interval							[0.44; 3.76]	

Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0.0028$, $p = 0.63$

0.5   1   2

Supplemental Figure 3bi. Association between prior IBD-related surgery and outpatient opioid use

Author	Opioid Surg	N	Non-Opioid Surg	N	Risk Ratio	RR	95% CI	Weight
Anderson et al.	56	128	91	319		1.53	[1.18; 1.99]	24.3%
Cheung et al.	27	50	21	58		1.49	[0.97; 2.29]	15.1%
Coates et al.	25	31	256	431		1.36	[1.12; 1.64]	29.5%
Hanson et al.	42	100	17	100		2.47	[1.51; 4.03]	12.7%
O'Brien et al.	27	39	22	43		1.35	[0.94; 1.94]	18.4%
Overall effect		348		951		**1.53**	**[1.17; 1.99]**	**100.0%**
Prediction interval							[0.81; 2.89]	

Heterogeneity: $I^2 = 24\%$, $\tau^2 = 0.0308$, $p = 0.26$
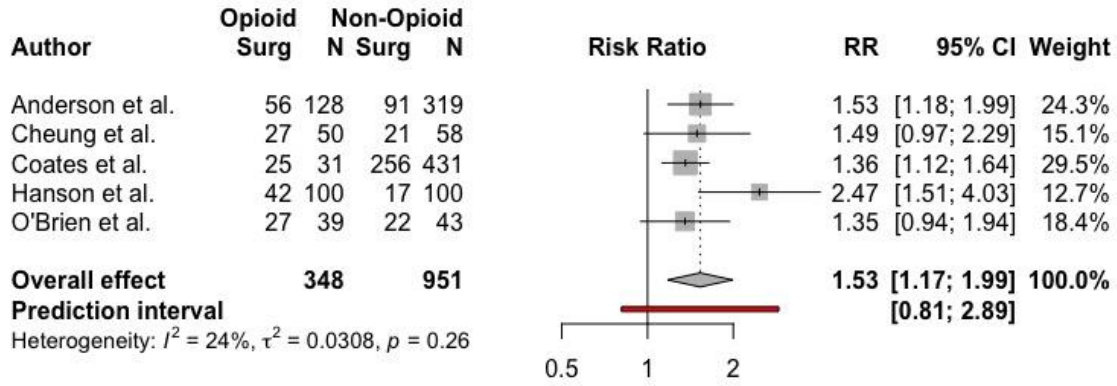
Supplemental Figure 3bii. Association between prior IBD-related surgery and inpatient opioid use

Author	Opioid Surg	N	Non-Opioid Surg	N	Risk Ratio	RR	95% CI	Weight
Dalal et al.	331	650	40	212		2.70	[2.02; 3.60]	68.3%
Long et al.	43	82	10	35		1.84	[1.05; 3.22]	31.7%
Overall effect		732		247		**2.39**	**[0.24; 23.36]**	**100.0%**

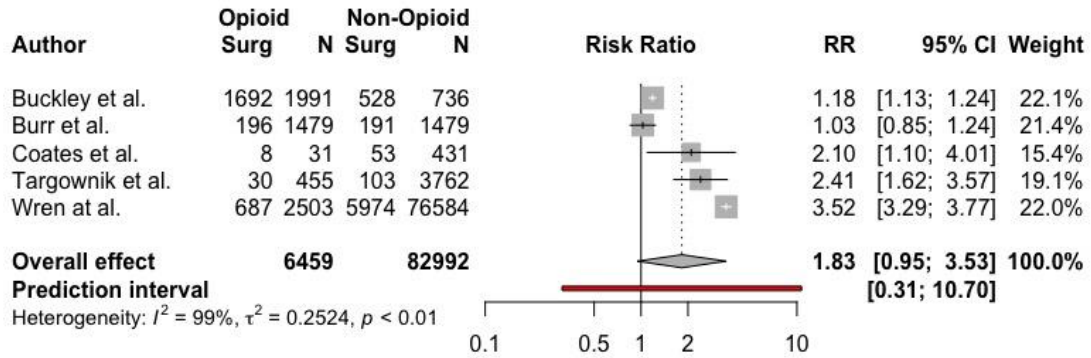Heterogeneity: $I^2 = 30\%$, $\tau^2 = 0.0309$, $p = 0.23$
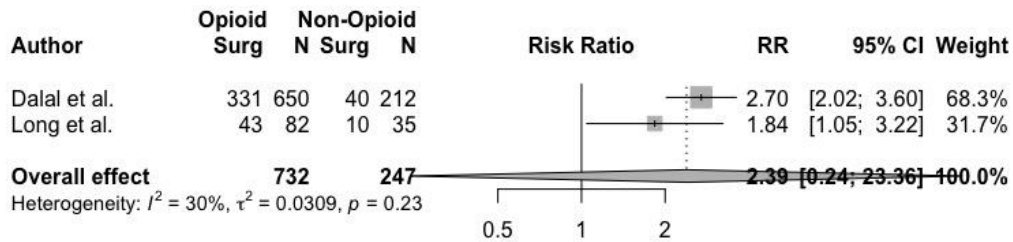
Supplemental Figure 3ci. Association between current IBD-related surgery and outpatient opioid use

Supplemental Figure 3cii. Association between current IBD-related surgery and inpatient opioid use