ACL/Analegsia: New Practice Cases

3/03/2018

Overview

This report covers new practice observations in the ACL/Multi-modal Analgesia data, comparing two groups based on which pre-operative medications they received.

To identify the observations for Group 1 and Group 2, all new practice observations were tabulated on whether they received the following drugs:
- 22 cases received all 3 pre-op drugs + Ketamine intra-operatively *(Group 1)*
- 08 cases received all 3 pre-op drugs but did NOT receive Ketamine
- 08 cases received 1 or 2 of the pre-op drugs and did/did not receive Ketamine *(Group 2)*
- 09 cases did not receive any of the 3 pre-op drugs

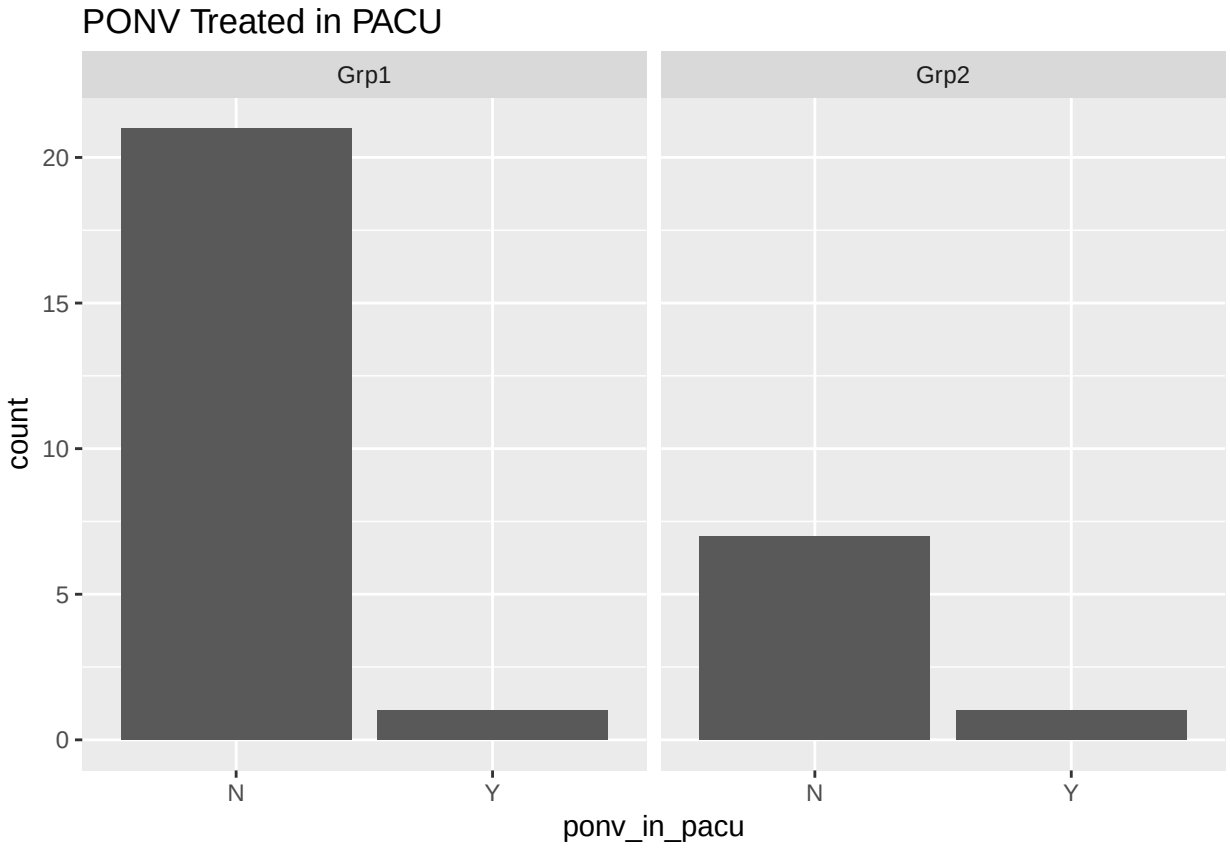
Celebrix	Aceta	Lyrica	Ketamine	Total Cases
Yes	Yes	Yes	Yes	22
Yes	Yes	Yes	No	8
Yes	Yes	No	Yes	1
Yes	Yes	No	No	1
Yes	No	Yes	No	1
Yes	No	No	No	3
No	Yes	No	Yes	2
No	No	No	Yes	7
No	No	No	No	2

Post-Op Outcomes: PONV, Pain Scores, PACU time

Here are the resulting PONV, Pain Scores, and PACU time, comparing results for Group 1 to Group 2.

PONV

'PONV treated in PACU' data is a Y/N value.



PONV - details for Group 1

Coding for the surgery types: 1=recon w/ allograft, 2=recon w/ hamstring, 3=recon w/ patellar bone

surg_type	age	preop_cele	preop_aceta	preop_pregab	intraop_keta	ponv_in_pacu
3	18-30	400	1000	75	30	N
1	18-30	400	1000	75	70	N
2	18-30	400	1000	75	25	N
3	18-30	400	1000	75	70	N
3	18-30	400	1000	75	75	N
2	18-30	400	1000	75	80	N
3	18-30	400	1000	75	90	N
3	18-30	400	1000	75	40	N
2	18-30	400	1000	75	70	N
3	18-30	400	1000	75	70	Y
3	18-30	400	1000	75	60	N
3	18-30	400	1000	75	70	N
3	18-30	400	1000	75	60	N
2	18-30	400	1000	75	50	N
2	31-40	400	1000	75	75	N
2	31-40	400	1000	75	60	N
1	41-50	400	1000	75	150	N
1	41-50	400	1000	75	70	N
2	41-50	400	1000	75	50	N
2	51-60	400	1000	75	70	N

surg_type	age	preop_cele	preop_aceta	preop_pregab	intraop_keta	ponv_in_pacu
1	51-60	200	1000	75	50	N
1	61-70	200	1000	75	20	N

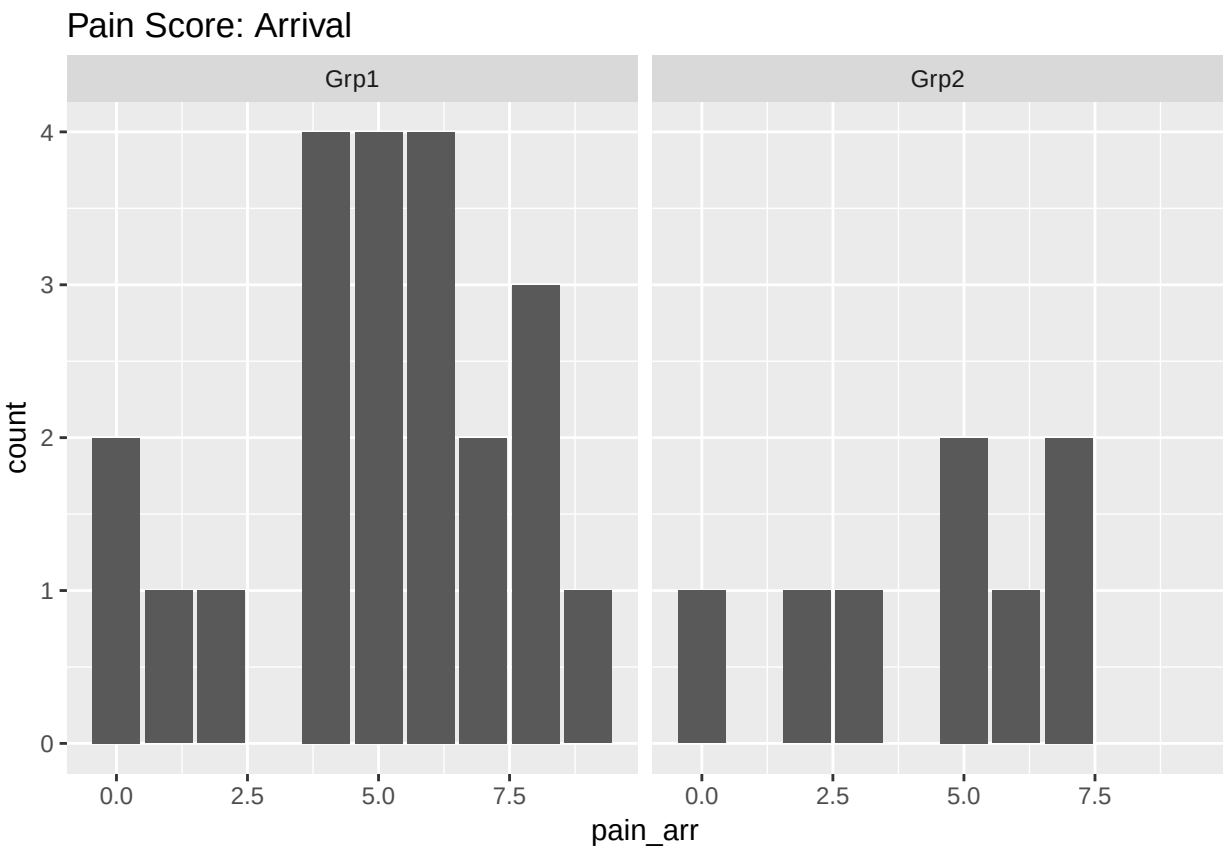
PONV - details for Group 2

Coding for the surgery types: 1=recon w/ allograft, 2=recon w/ hamstring, 3=recon w/ patellar bone

surg_type	age	preop_cele	preop_aceta	preop_pregab	intraop_keta	ponv_in_pacu
2	18-30	400	0	0	0	N
3	18-30	0	1000	0	30	N
3	18-30	0	1000	0	60	N
3	18-30	400	1000	0	50	N
2	18-30	200	500	0	0	N
3	18-30	200	0	0	0	N
3	31-40	400	0	0	0	N
2	51-60	400	0	75	0	Y

Pain Scores

Pain Score: Arrival



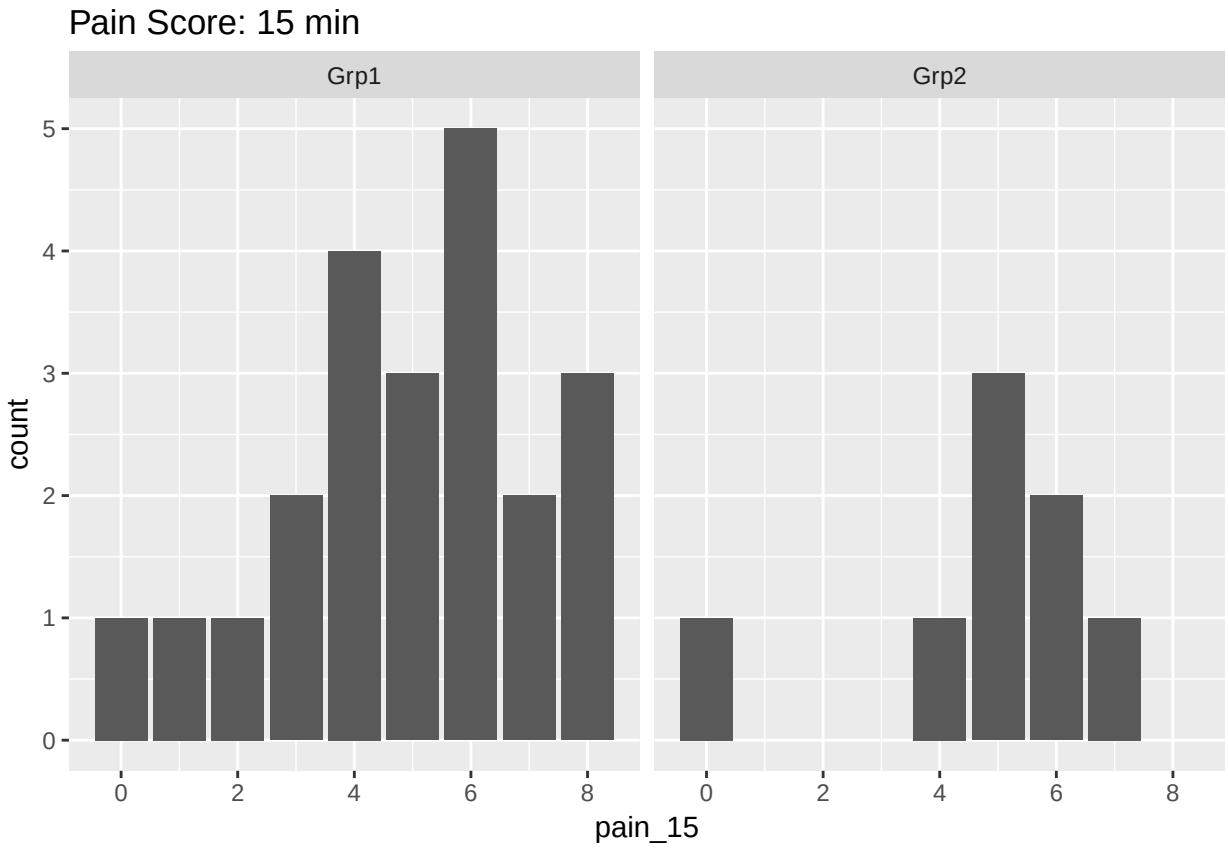
Pain Score: Arrival (Group 1)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.00    4.00    5.00    5.00    6.75    9.00
```

Pain Score: Arrival (Group 2)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   2.750   5.000   4.375   6.250   7.000
```

Pain Score: 15 min



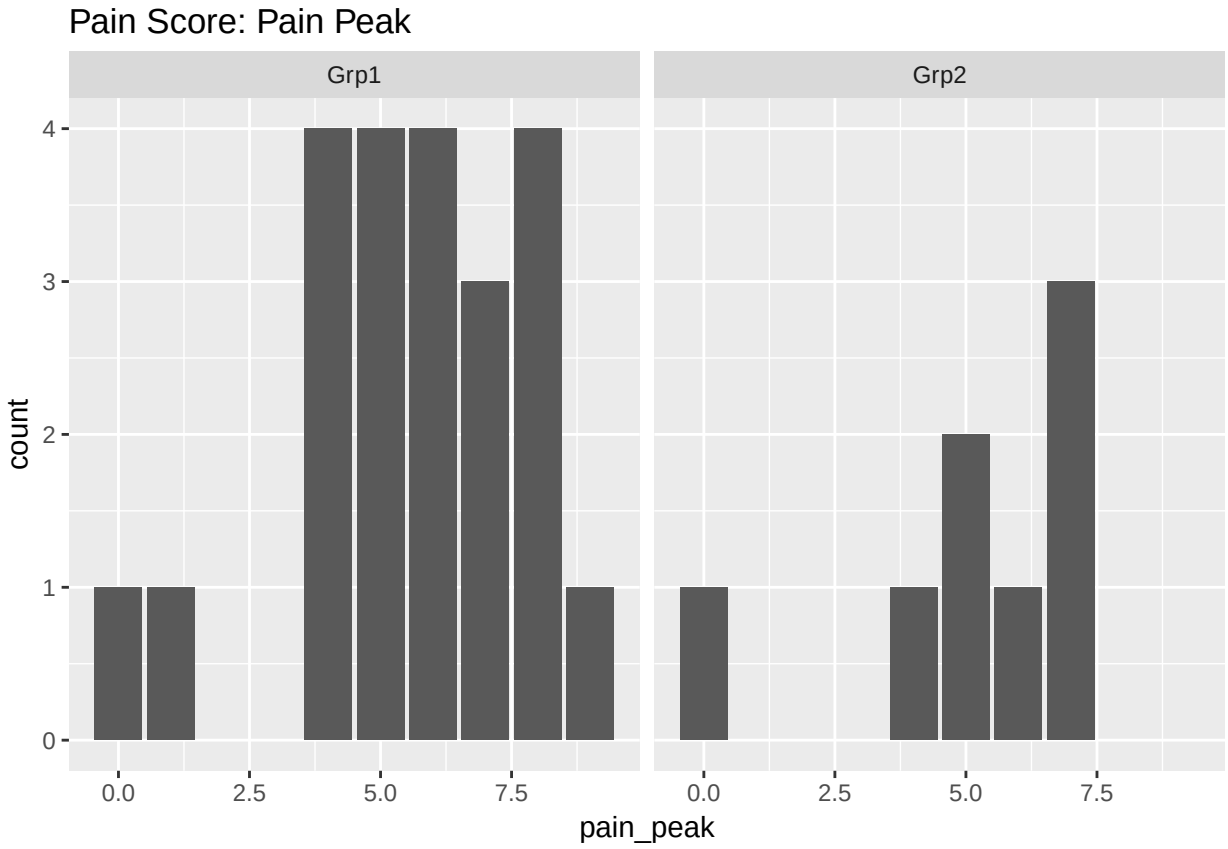
Pain Score: 15 min (Group 1)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   4.000   5.000   4.909   6.000   8.000
```

Pain Score: 15 min (Group 2)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.00    4.75    5.00    4.75    6.00    7.00
```

Pain Score: Peak



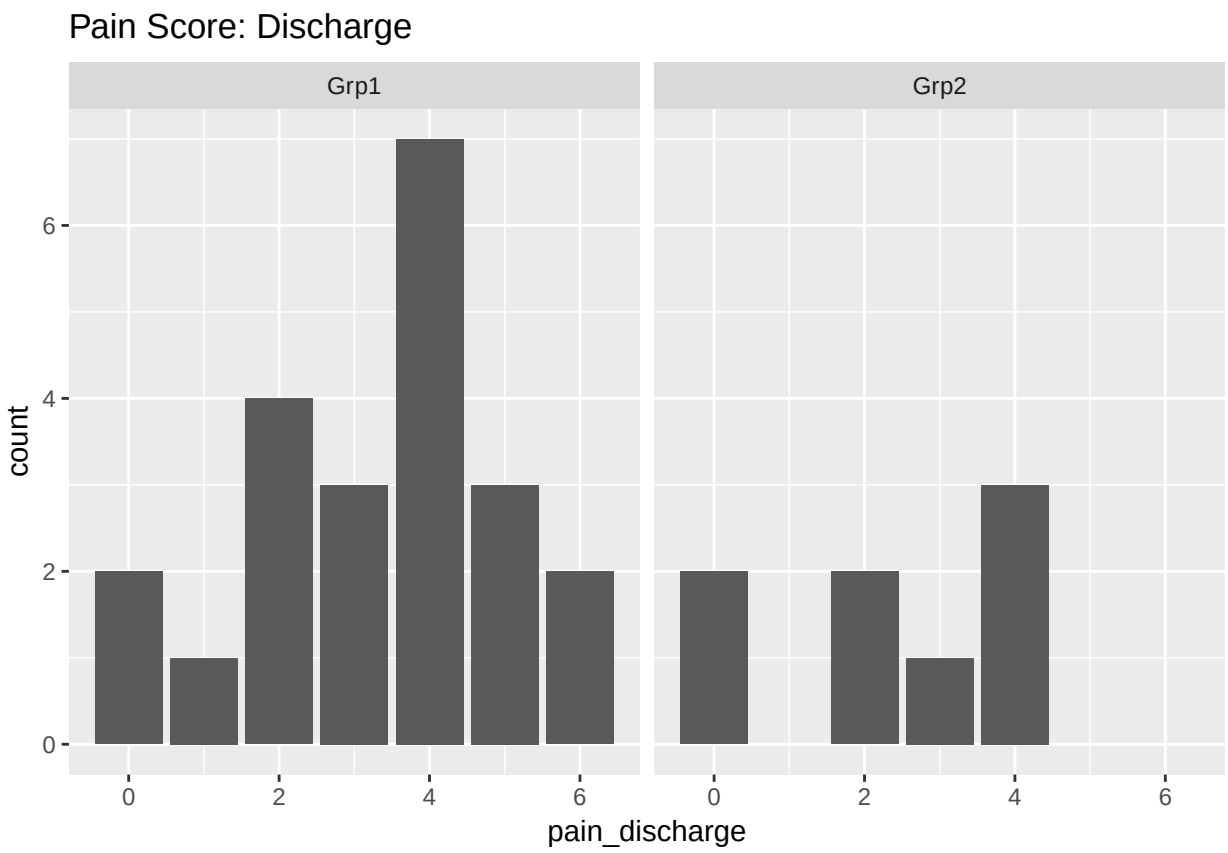
Pain Score: Peak (Group 1)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   4.250   6.000   5.591   7.000   9.000
```

Pain Score: Peak (Group 2)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   4.750   5.500   5.125   7.000   7.000
```

Pain Score: Discharge



Pain Score: Discharge (Group 1)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   2.000   4.000   3.318   4.000   6.000
```

Pain Score: Discharge (Group 2)

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.500   2.500   2.375   4.000   4.000
```

Pain Scores - details for Group 1

surg_type	age	pain_arr	pain_15	pain_peak	pain_discharge
3	18-30	1	1	1	1
1	18-30	8	6	8	3
2	18-30	5	5	5	4
3	18-30	6	5	6	0
3	18-30	7	6	7	6
2	18-30	8	8	8	2
3	18-30	9	7	9	4
3	18-30	0	4	5	5

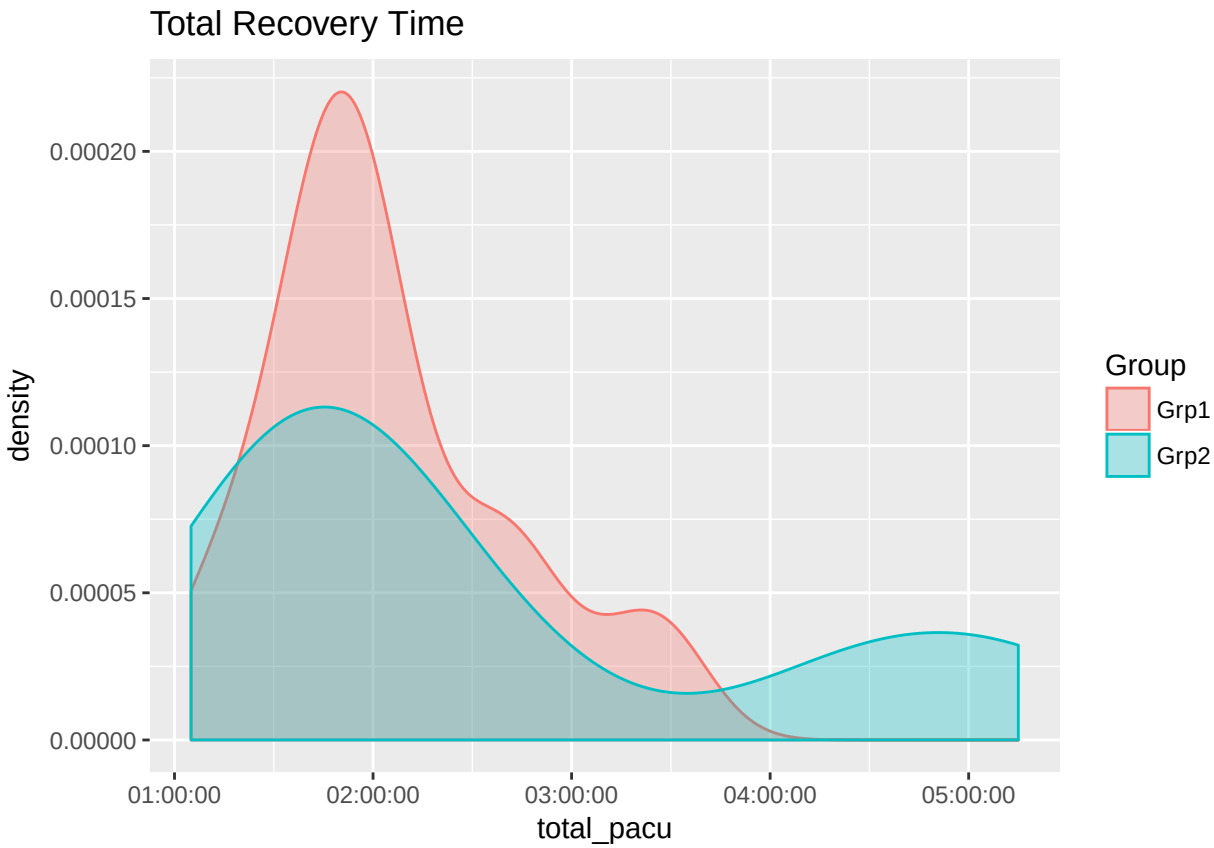
surg_type	age	pain_arr	pain_15	pain_peak	pain_discharge
2	18-30	5	6	6	4
3	18-30	4	4	4	4
3	18-30	5	5	5	5
3	18-30	4	6	7	4
3	18-30	0	0	0	0
2	18-30	2	2	4	2
2	31-40	6	7	7	5
2	31-40	6	6	6	4
1	41-50	6	4	6	3
1	41-50	7	8	8	3
2	41-50	5	4	5	4
2	51-60	4	3	4	2
1	51-60	8	8	8	6
1	61-70	4	3	4	2

Pain Scores - details for Group 2

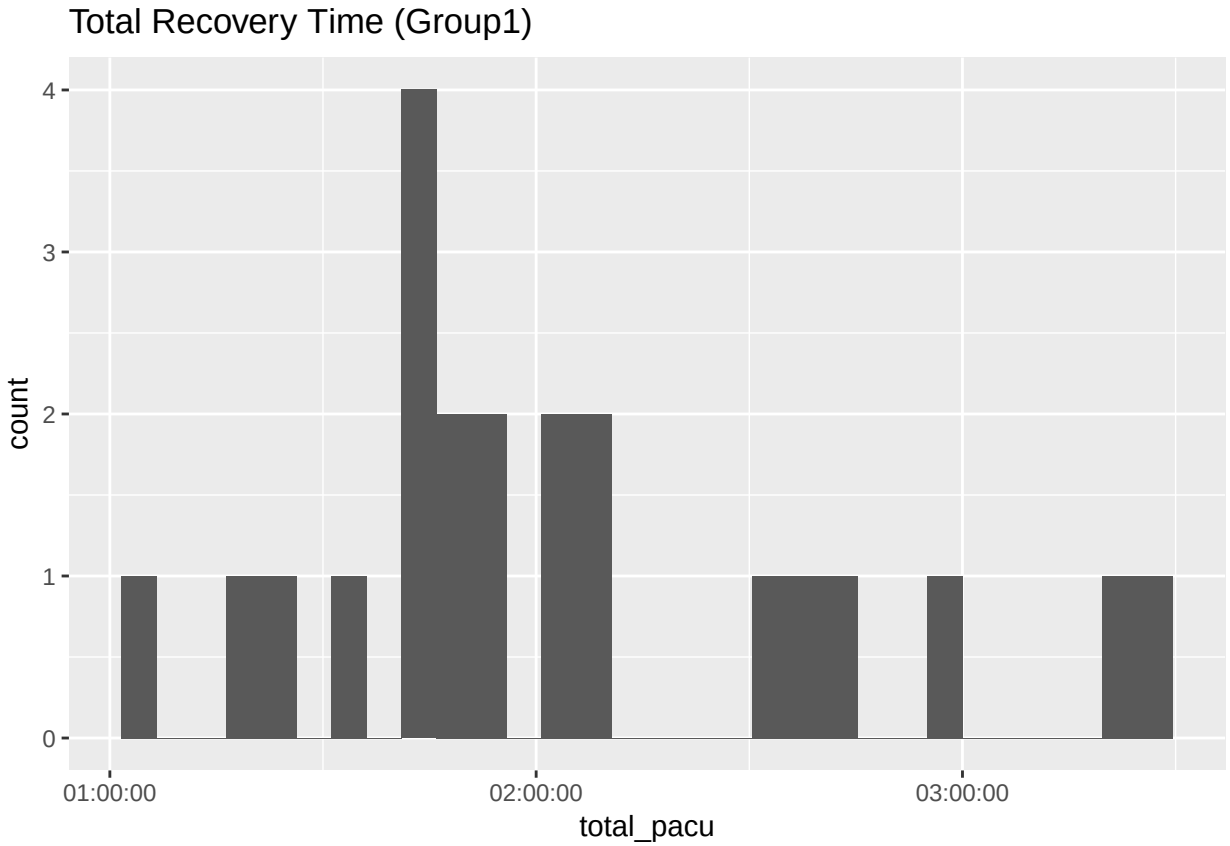
surg_type	age	pain_arr	pain_15	pain_peak	pain_discharge
2	18-30	3	7	7	3
3	18-30	5	5	5	4
3	18-30	5	5	5	4
3	18-30	0	0	0	0
2	18-30	6	6	6	4
3	18-30	2	4	4	0
3	31-40	7	6	7	2
2	51-60	7	5	7	2

Recovery Time (PACU)

Values in the graph are shown in hours, while values in the summary table are shown in seconds.




```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



PACU times (in seconds) - Group 1

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    3900    6270    6780    7475    8745   12480
```

PACU times (in seconds) - Group 2

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    4500    5895    6870    9240   10890   18900
```

PACU detailed data (Group 1)

surg_type	age	total_pacu
3	18-30	02:56:00
1	18-30	01:44:00
2	18-30	02:41:00
3	18-30	02:05:00
3	18-30	02:04:00
2	18-30	01:43:00
3	18-30	01:51:00
3	18-30	01:50:00
2	18-30	01:05:00
3	18-30	02:38:00

surg_type	age	total_pacu
3	18-30	02:06:00
3	18-30	03:23:00
3	18-30	01:47:00
2	18-30	01:55:00
2	31-40	01:24:00
2	31-40	01:46:00
1	41-50	01:33:00
1	41-50	03:28:00
2	41-50	01:17:00
2	51-60	02:07:00
1	51-60	02:32:00
1	61-70	01:46:00

PACU detailed data (Group 2)

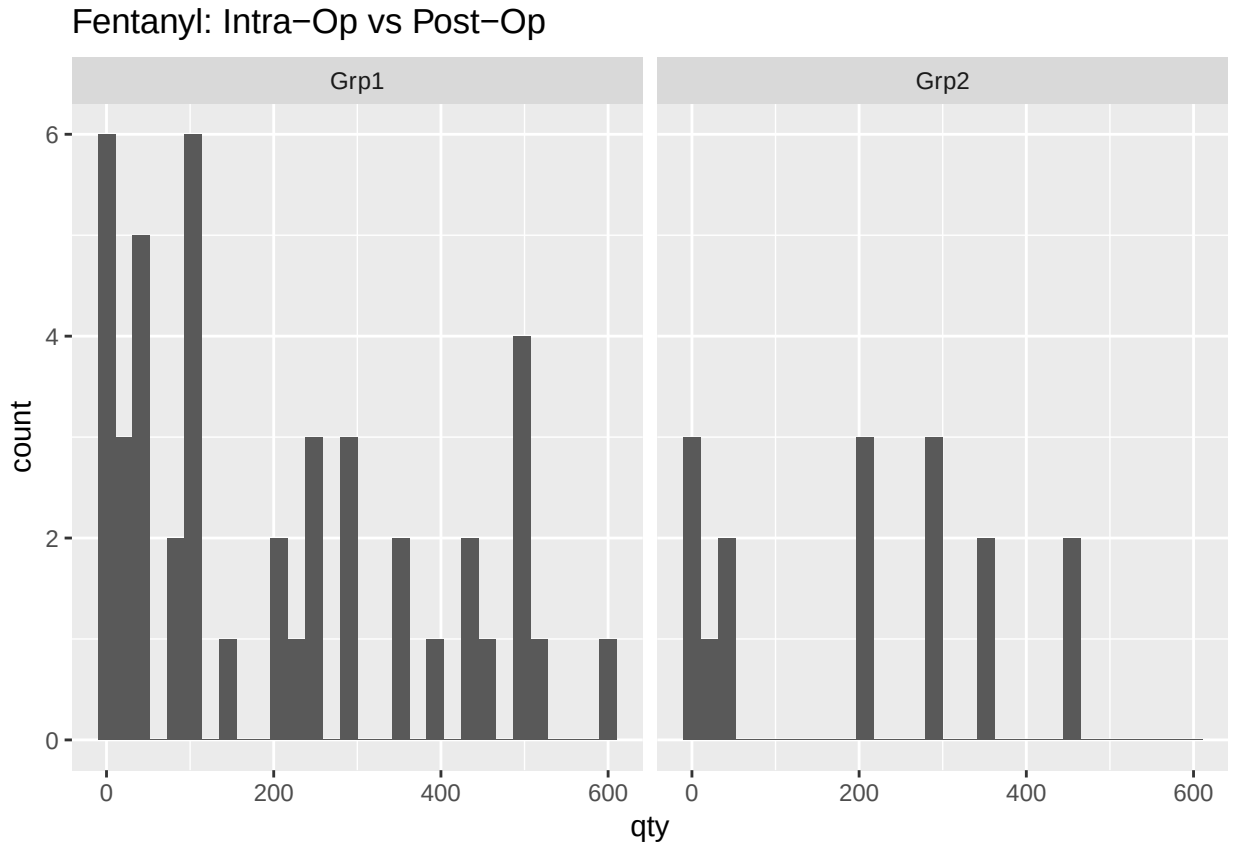
surg_type	age	total_pacu
2	18-30	02:33:00
3	18-30	01:40:00
3	18-30	01:56:00
3	18-30	01:15:00
2	18-30	04:27:00
3	18-30	01:53:00
3	31-40	01:33:00
2	51-60	05:15:00

Pre-Op, Intra-Op, and Post-Op Comparisons of Select Meds

Further analysis to compare pre-operative, intra-operative, and post-operative values for select variables:
-Fentanyl (intra-op to post-op)
-Hydromorphone (pre-op to post-op)
-Oxycodone (pre-op to post-op)

Fentanyl: Intra-Op vs Post-Op

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



Intra-Op to Post-Op Fentanyl (Group 1)

surg_type	age	intraop_fent	postop_fent
3	18-30	600	12.5
1	18-30	400	100.0
2	18-30	450	100.0
3	18-30	300	50.0
3	18-30	350	50.0
2	18-30	525	0.0
3	18-30	425	100.0
3	18-30	225	0.0
2	18-30	350	0.0
3	18-30	300	50.0
3	18-30	300	0.0
3	18-30	500	0.0
3	18-30	250	0.0
2	18-30	200	50.0
2	31-40	500	100.0
2	31-40	200	25.0
1	41-50	500	25.0
1	41-50	425	150.0
2	41-50	250	75.0
2	51-60	500	75.0
1	51-60	250	100.0
1	61-70	100	50.0

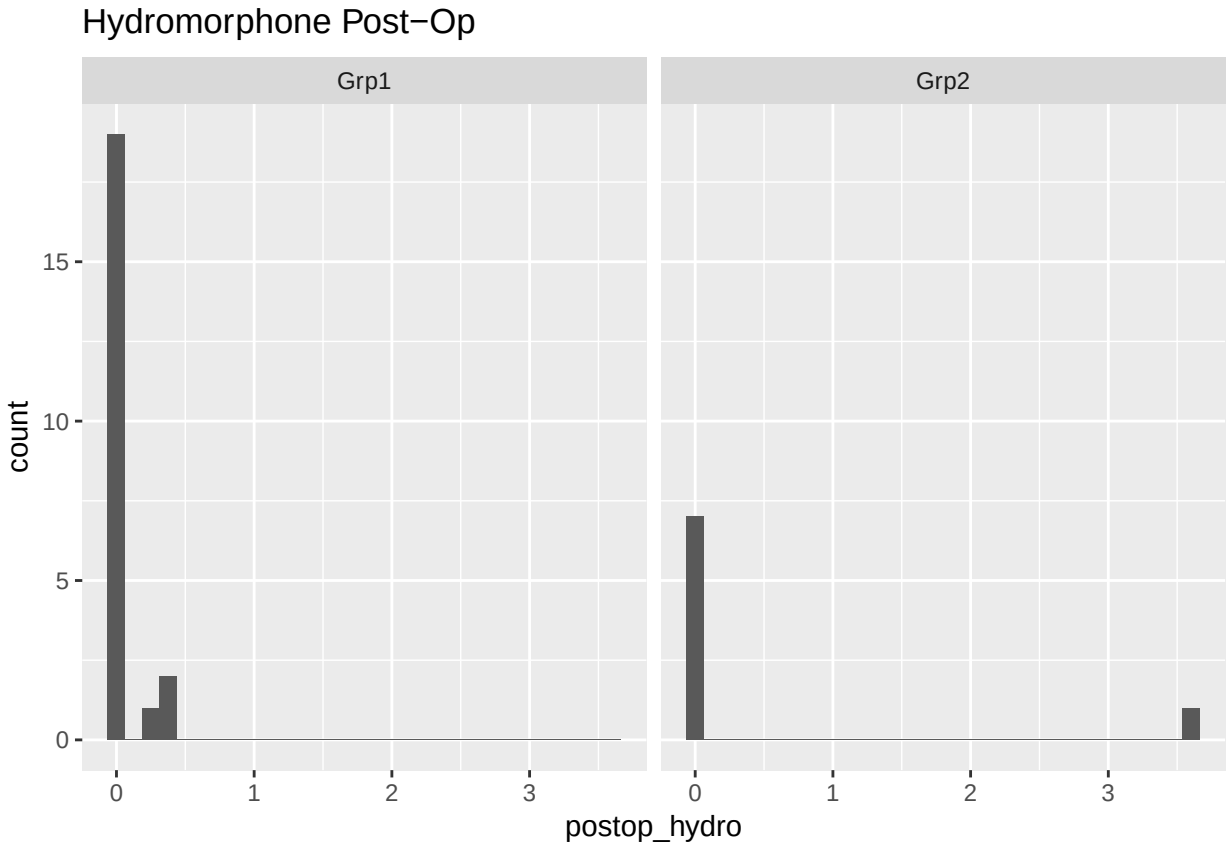
Intra-Op to Post-Op Fentanyl (Group 2)

surg_type	age	intraop_fent	postop_fent
2	18-30	450	25
3	18-30	450	0
3	18-30	200	50
3	18-30	300	0
2	18-30	350	0
3	18-30	300	50
3	31-40	300	200
2	51-60	200	350

Hydromorphone: Pre-Op vs Post-Op

Pre-op hydromorphone amounts were not included in the dataset, so analysis was limited to comparing post-op hydromorphone values for Group 1 to Group 2:

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



Pre-Op to Post-Op Hydromorphone (Group 1)

surg_type	age	postop_hydro
3	18-30	0.0

surg_type	age	postop_hydro
1	18-30	0.2
2	18-30	0.0
3	18-30	0.0
3	18-30	0.0
2	18-30	0.0
3	18-30	0.0
3	18-30	0.0
2	18-30	0.0
3	18-30	0.0
3	18-30	0.0
3	18-30	0.4
3	18-30	0.0
2	18-30	0.0
2	31-40	0.0
2	31-40	0.0
1	41-50	0.0
1	41-50	0.4
2	41-50	0.0
2	51-60	0.0
1	51-60	0.0
1	61-70	0.0

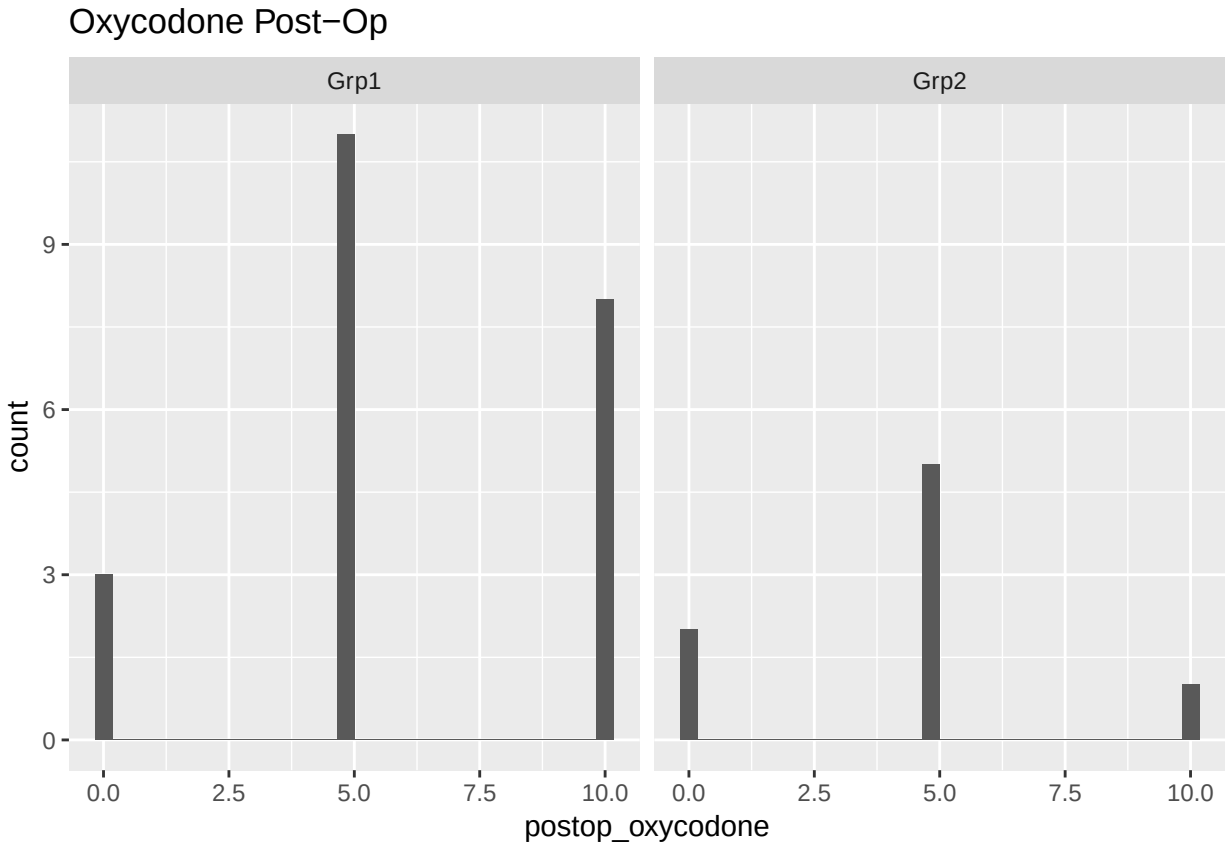
Pre-Op to Post-Op Hydromorphone (Group 2)

surg_type	age	postop_hydro
2	18-30	0.0
3	18-30	0.0
3	18-30	0.0
3	18-30	0.0
2	18-30	0.0
3	18-30	0.0
3	31-40	0.0
2	51-60	3.6

Oxycodone: Pre-Op vs Post-Op

Pre-op oxycodone amounts were not included in the dataset, so analysis was limited to comparing post-op hydromorphone values for Group 1 to Group 2:

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



Pre-Op to Post-Op Oxycodone (Group 1)

surg_type	age	postop_oxycodone
3	18-30	5
1	18-30	10
2	18-30	5
3	18-30	5
3	18-30	5
2	18-30	0
3	18-30	5
3	18-30	10
2	18-30	10
3	18-30	0
3	18-30	0
3	18-30	10
3	18-30	5
2	18-30	10
2	31-40	10
2	31-40	5
1	41-50	5
1	41-50	10
2	41-50	5
2	51-60	10
1	51-60	5
1	61-70	5

Pre-Op to Post-Op Oxycodone (Group 2)

surg_type	age	postop_oxycodone
2	18-30	5
3	18-30	10
3	18-30	5
3	18-30	5
2	18-30	5
3	18-30	5
3	31-40	0
2	51-60	0