

Analysis Report

```
library(ggplot2)
# Read discharged_patients.txt into a dataframe

df <- read.table("discharged_patients.txt", header = TRUE, sep = ",", stringsAsFactors = FALSE)

total_rows <- nrow(df)
total_icu_admit <- sum(tolower(df$icuAdmit) == 'true')
total_ward_admit <- total_rows - total_icu_admit
df$los <- df$dischargeTime - df$admitTime
```

Total Patients: 1762

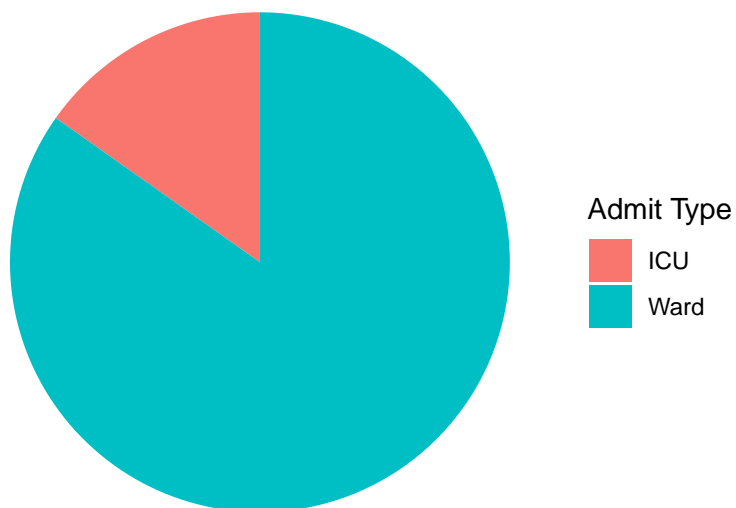
ICU admit %: 0.1520999

Icu-vs-Ward-Admits

```
# Pie chart of ICU vs Ward admits

admit_counts <- data.frame(
  type = c("ICU", "Ward"),
  count = c(total_icu_admit, total_ward_admit)
)
ggplot(admit_counts, aes(x = "", y = count, fill = type)) +
  geom_bar(stat = "identity", width = 1) +
  coord_polar(theta = "y") +
  labs(title = "ICU vs Ward Admits", x = NULL, y = NULL, fill = "Admit Type") +
  theme_void()
```

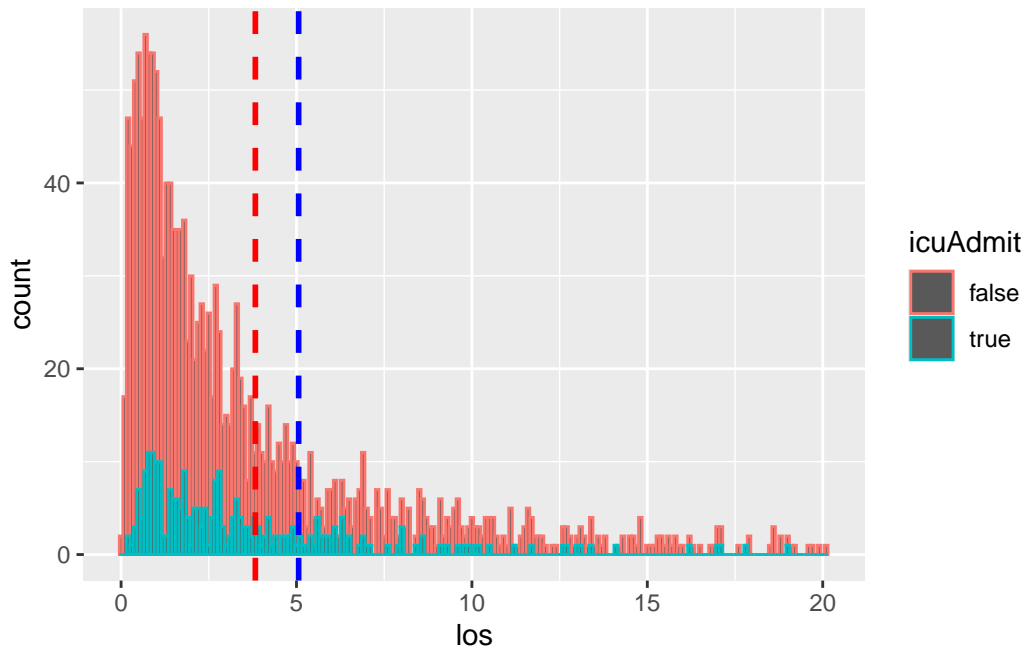
ICU vs Ward Admits



LOS

```
icu_patients <- df[tolower(df$icuAdmit) == "true", ]
ward_patients <- df[tolower(df$icuAdmit) == "false", ]
q3 <- quantile(df$los, 0.75, na.rm = TRUE)

ggplot(df, aes(x = los, color = icuAdmit)) +
  geom_histogram(binwidth = 0.1) +
  geom_vline(aes(xintercept=mean(ward_patients$los)),
    color="blue", linetype="dashed", size=1) +
  geom_vline(aes(xintercept=mean(icu_patients$los)),
    color="red", linetype="dashed", size=1) +
  xlim(NA, q3*4)
```



```
summary(icu_patients$los)
```

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
0.1927	1.1361	2.6534	3.8273	4.8511	47.2397

```
summary(ward_patients$los)
```

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
0.02887	0.93548	2.21200	5.06080	5.08833	132.13720

```
total_ward_discharge <- sum(tolower(df$dischargeLocation) == 'ward')
total_icu_discharge <- sum(tolower(df$dischargeLocation) == 'icu')
total_transfers_ward <- sum(df$transferTime != -1 & tolower(df$admitLocation) == 'icu')
total_transfers_icu <- sum(df$transferTime != -1 & tolower(df$admitLocation) == 'ward')
```

ADT Summary Stats

key	value
Total Admissions	1762
Total to Ward	1494
Total to ICU	268
% icu/total	0.1520999
total discharges from ward	1618
total discharges from icu	144
total transfers to ward	124
total transfers to icu	0
fraction of admissions with transfer to WARD	0.0703746
fraction of admissions with transfer to ICU	0
Average LOS	4.8731795
average LOS for ICU-admits	3.827291
average length of stay on ICU (transfer or otherwise)	tbd

! Important

Future Analysis to be completed:

HCW Visits

- Average total visits per hcw/shift
 - doctor
 - nurse
 - rt
 - pt
 - ot
- average daily visits per patient per hcw per shift
 - total and broken out by hcw type
- average distinct patients visited per shift
 - broken out by hcw type
- average time between visits per HCW by type
 - verify (intravisit time + duration of visit from Granular Model)
 - * doctors mean = $\text{gamma}(0.52, 90.7) + \text{gamma}(5.5, 1.2)$
 - * nurses mean = $\text{gamma}(0.54, 55.7) + \text{gamma}(5.5, 1.2)$
 - * therapists mean = $\text{gamma}(0.52, 61.7) + \text{gamma}(3.0, 1.8)$
- average number of HCW visits per day/patient (total/{type}) val
- average time between visit by HCW per patient
- average distinct hcw visits per day by patient

Disease

- TBD