

Hospital Length of Stays

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```
library(tidyverse)
library(NHSRdatasets)
library(knitr)
library(kableExtra)
```

Load the data from the package

```
data("LOS_model")
?LOS_model
```

Inspect

```
str(LOS_model)

## tibble [300 x 5] (S3: tbl_df/tbl/data.frame)
##  $ ID          : int [1:300] 1 2 3 4 5 6 7 8 9 10 ...
##  $ Organisation: Ord.factor w/ 10 levels "Trust1"<"Trust2"<...: 1 2 3 4 5 6 7 8 9 10 ...
##  $ Age         : int [1:300] 55 27 93 45 70 60 25 48 51 81 ...
##  $ LOS         : int [1:300] 2 1 12 3 11 7 4 4 7 1 ...
##  $ Death       : int [1:300] 0 0 0 1 0 0 0 0 1 0 ...
```

Make Death a factor

```
hospital_data <- LOS_model%>%
  mutate(Death = factor(Death))
```

Recode Death levels

```
hospital_data <- hospital_data %>%
  mutate(
    Death = Death %>%
      fct_recode("Survived" = "0",
                 "Died" = "1")
  )
head(hospital_data)
```

```
## # A tibble: 6 x 5
##   ID Organisation Age  LOS Death
##   <int> <ord>      <int> <int> <fct>
## 1     1 Trust1      55     2 Survived
## 2     2 Trust2      27     1 Survived
## 3     3 Trust3      93    12 Survived
## 4     4 Trust4      45     3 Died
## 5     5 Trust5      70    11 Survived
## 6     6 Trust6      60     7 Survived
```

Create a summary table where each combination of Organisation and Death gets a count (n).

```
hospital_data_summary <- hospital_data %>%
  group_by(Organisation, Death) %>%
  tally()
```

Make a wide table with Dead and Survived as rows with a column for each Trust

```
#wide "from" long "to"
hospital_data_wide <- hospital_data_summary %>%
  pivot_wider(
    names_from = Organisation,
    values_from = n
  )
```

Another pivot with Survived and Died as columns, Trusts as rows.

Also calculate the % survived for each Trust

```
hospital_data_wide_pretty <- hospital_data_summary %>%
  pivot_wider(
    names_from = Death,
    values_from = n
```

```
) %>%
mutate(Total = Survived + Died,
       Percent_Survived = (Survived/Total)*100)
```

Make the wide table pretty with kable()

```
hospital_data_wide_pretty %>%
kable(
  col.mnames = c("Trust", "Survived", "Died", "Total", "Percent Survived"),
  digits = 0,
  caption = "Hospital Length of Stays data : Percent Survived by Trust",
  align = "lcccc")
```

Table 1: Hospital Length of Stays data : Percent Survived by Trust

Organisation	Survived	Died	Total	Percent_Survived
Trust1	23	7	30	77
Trust2	25	5	30	83
Trust3	24	6	30	80
Trust4	26	4	30	87
Trust5	23	7	30	77
Trust6	26	4	30	87
Trust7	22	8	30	73
Trust8	25	5	30	83
Trust9	27	3	30	90
Trust10	26	4	30	87

```
# %>%
# kable_styling("striped", full_width = FALSE)%>%
# footnote("Data from LOS_model")
```

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