

# Package ‘KMunicate’

August 3, 2020

**Title** KMunicate-Style Kaplan–Meier Plots

**Version** 0.0.2

**Description** Produce Kaplan–Meier plots in the style recommended following the KMunicate study by Morris et al. (2019) <doi:10.1136/bmjopen-2019-030215>. The KMunicate style consists of Kaplan–Meier curves with confidence intervals to quantify uncertainty and an extended risk table (per treatment arm) depicting the number of study subjects at risk, events, and censored observations over time. The resulting plots are built using 'ggplot2' and can be further customised to a certain extent, including themes, fonts, and colour scales.

**URL** <https://ellessenne.github.io/KMunicate-package>

**BugReports** <https://github.com/ellessenne/KMunicate-package/issues>

**VignetteBuilder** knitr

**RoxygenNote** 7.1.1

**LazyData** true

**ByteCompile** true

**Encoding** UTF-8

**Language** en-GB

**License** MIT + file LICENSE

**Depends** R (>= 2.10), survival

**Imports** checkmate, cowplot, ggplot2, pammttools, tidyr

**Suggests** broom, covr, devtools, extrafont, knitr, rmarkdown, simsurv, testthat, usethis

**NeedsCompilation** no

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**Repository** CRAN

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brcancer	<i>German Breast Cancer Study Data</i>
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### Description

German breast cancer study data, imported from Stata 16.

### Usage

```
brcancer
```

### Format

A data frame with 686 rows and 14 variables:

- id A numeric vector;
- hormon Hormonal therapy;
- x1 Age, in years;
- x2 Menopausal status;
- x3 Tumour size, mm;
- x4 Tumour grade;
- x5 Number of positive nodes;
- x6 Progesterone receptor, fmol;
- rectime Recurrence-free survival time, days;
- censrec Censoring indicator;
- x4a Tumour grade  $\geq 2$ ;
- x4b Tumour grade  $= 3$ ;
- x5e  $\exp(-0.12 * x5)$ .

### References

<http://www.stata-press.com/data/r16/brcancer.dta>

### Examples

```
data("brcancer", package = "KMunicate")
```

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cancer2

*Patient Survival in Drug Trial*

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### **Description**

Patient survival in drug trial data, imported from Stata 16.

### **Usage**

```
cancer2
```

### **Format**

A data frame with 48 rows and 4 variables:

- studytime Months to death or end of follow-up;
- died Event indicator variable, died = 1 if a patient died;
- drug Drug type, with drug = 1 being placebo;
- age Age of a patient at baseline.

### **Note**

The dataset is named cancer2 to avoid name collision with the cancer dataset from the survival package.

### **References**

<http://www.stata-press.com/data/r16/cancer.dta>

### **Examples**

```
data("cancer2", package = "KMunicate")
```

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KMunicate

*Create KMunicate-Style Kaplan–Meier Plots*

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### **Description**

Produce Kaplan–Meier plots in the style recommended following the KMunicate study by TP Morris *et al.* (doi: [10.1136/bmjopen2019030215](https://doi.org/10.1136/bmjopen2019030215)).

**Usage**

```

KMunicate(
  fit,
  time_scale,
  .risk_table = "KMunicate",
  .theme = NULL,
  .color_scale = NULL,
  .fill_scale = NULL,
  .xlab = "Time",
  .alpha = 0.25,
  .rel_heights = NULL,
  .ff = NULL
)

```

**Arguments**

<code>fit</code>	A <code>survfit</code> object.
<code>time_scale</code>	The time scale that will be used for the x-axis and for the summary tables.
<code>.risk_table</code>	This arguments define the type of risk table that is produced. Defaults to <code>KMunicate</code> , where the cumulative number of events and censored are calculated. Another possibility is <code>survfit</code> , which will use the default numbers returned by <code>summary.survfit</code> (e.g. number of events and censored per interval). <code>.risk_table</code> can also be <code>NULL</code> , in which case the risk table will be omitted from the plot.
<code>.theme</code>	ggplot theme used by the plot. Defaults to <code>NULL</code> , where the default ggplot theme will be used.
<code>.color_scale</code>	Colour scale used for the plot. Has to be a <code>scale_colour_*</code> component, and defaults to <code>NULL</code> where the default colour scales will be used.
<code>.fill_scale</code>	Fill scale used for the plot. Has to be a <code>scale_fill_*</code> component, and defaults to <code>NULL</code> where the default fill scales will be used.
<code>.xlab</code>	Label for the horizontal axis, defaults to <i>Time</i> .
<code>.alpha</code>	Transparency of the point-wise confidence intervals
<code>.rel_heights</code>	Override default relative heights of plots and tables. Must be a numeric vector of length equal 1 + 1 per each arm in the Kaplan-Meier plot. See <code>cowplot::plot_grid()</code> for more details on how to use this argument.
<code>.ff</code>	A string used to define a base font for the plot.

**Value**

A `KMunicate`-style ggplot object.

**Examples**

```

library(survival)
data("cancer2", package = "KMunicate")
KM <- survfit(Surv(studytime, died) ~ drug, data = cancer2)
time_scale <- seq(0, max(cancer2$studytime), by = 7)
KMunicate(fit = KM, time_scale = time_scale)

```

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KMunicate\_package

*KMunicate-Style Kaplan–Meier Plots*

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**Description**

Produce Kaplan–Meier plots in the style recommended following the KMunicate study (doi: [10.1136/bmjopen2019030215](https://doi.org/10.1136/bmjopen2019030215)).

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