

IX TALLER

INVESTIGACIÓN EN EVALUACIÓN ECONÓMICA

Evaluación Económica
aplicada a las tecnologías
sanitarias



INES: Interactive tool for construction and Extrapolation of partitioned Survival models

David Epstein(Universidad de Granada)

Comentarios de: Miguel Ángel Negrín (ULPGC)



Welcome to **INES**: Interactive model for Extrapolation of Survival and cost

INES provides an open-access tool powered by R that implements partitioned survival models. INES is designed to be used by investigators or healthcare professionals who have a good grasp of the principles of economic evaluation and understand the strengths and weaknesses of partitioned survival models, but are not sufficiently familiar with a statistical package such as Excel or R to be able to construct and test a de-novo PSM themselves. INES offers a rapid, flexible, robust tool for calculating a PSM that can be used in many different contexts.

[Import data](#)[Load example data](#)[Download instructions](#)[Copy citation](#)[Go to the website](#)[Send us an email](#)

ABOUT

INES has been developed by V Gimeno-Ballester, D

INES: Interactive tool for construction and Extrapolation of partitioned Survival models

- Gratuito
- 892.2MB
- Github. Indicar página web de acceso en el artículo

INES: Interactive tool for construction and Extrapolation of partitioned Survival models

INES

Dashboard

Import data

Survival curves

Model inputs

Model costs

Cost-effectiveness model

Welcome to **INES**: INTERactive model for Extrapolation of Survival and cost

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ABOUT

INES has been developed by V Gimeno-Ballester, D Epstein, A Olry de Labry and D Perez-Troncoso. It is made available under a Creative Commons Attribution Licence (CC BY)

CITATION

If you use **INES**, please cite it as:

Gimeno-Ballester, V., Epstein, D. M., Olry de Labry, A., Pérez-Troncoso, D.(2022). INTERactive model for Extrapolation of Survival and cost (INES) [Computer software]. Available from <https://github.com/danielpereztr/INESapp>

No me funcionan

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Import data

The screenshot shows the INES web application interface. The sidebar on the left contains navigation options: Dashboard, Import data, Survival curves, Model inputs, Model costs, and Cost-effectiveness model. The main content area is divided into several sections:

- Load Excel file:** Includes a 'Browse...' button, a file name 'temp2.xlsx', and an 'Upload complete' button. There is also a 'Download template' button.
- Select data:** A dropdown menu showing 'OS intervention'.
- Study name:** A text input field containing 'P1'.
- Intervention name (treat. 1):** A text input field containing 'Int'.
- Control name (treat. 2):** A text input field containing 'Control'.
- Next:** A green button with a play icon and the text 'Next'.

Below the input fields, there is a table with two columns: 'Month' and 'Probs.'. The table contains 10 rows of data:

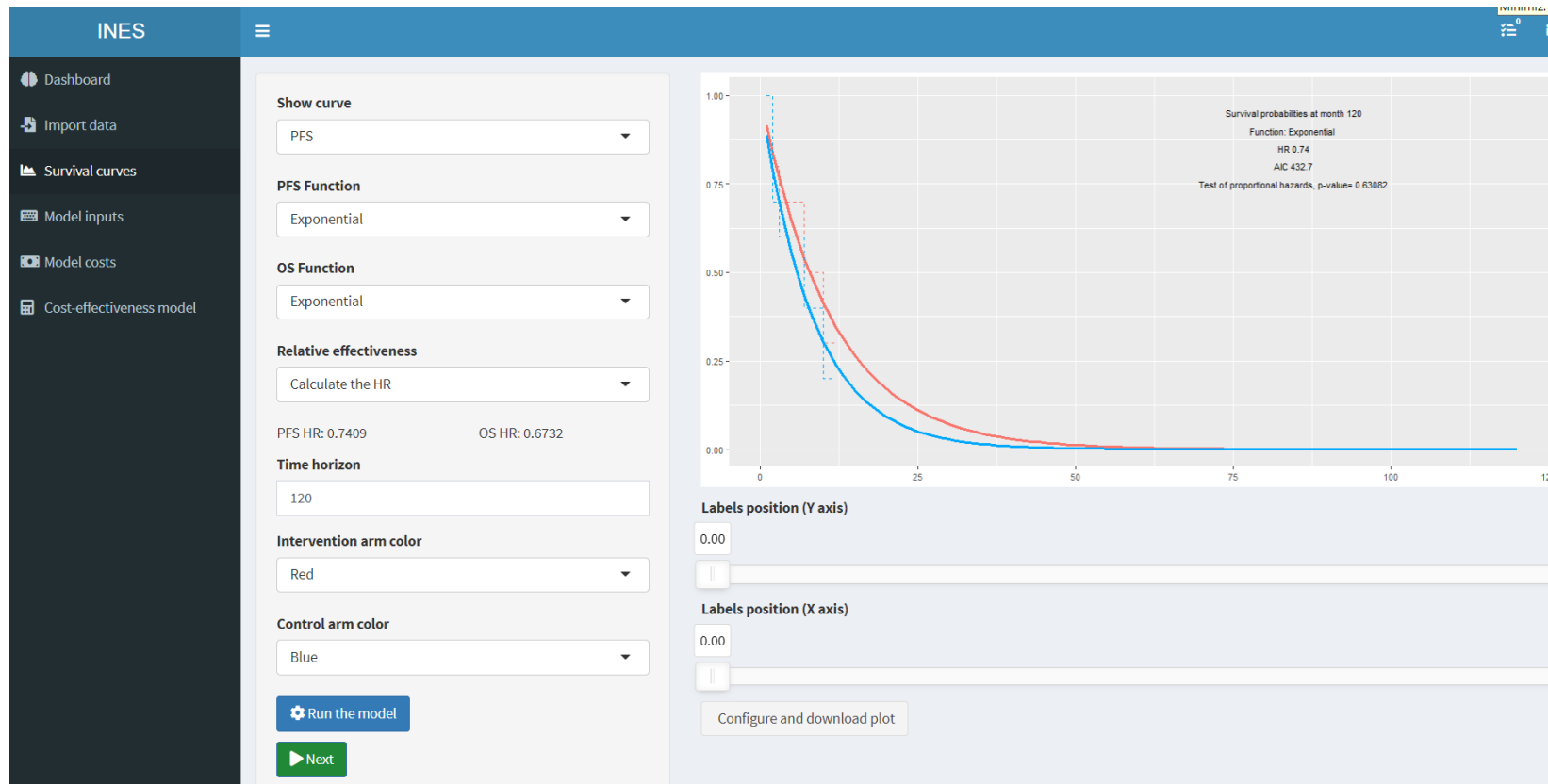
Month	Probs.
1	1
2	0.9
3	0.8
4	0.8
5	0.8
6	0.7
7	0.7
8	0.6
9	0.6
10	0.5

Below the table, there is a 'Number total of events' input field containing '0'. At the bottom, there is a 'Time' section with a 'Pat. At. Risk' input field containing '100'. Navigation buttons 'Previous', '1', and 'Next' are visible at the bottom of the table and the 'Time' section.

- ¿Digitalización de las curvas Kaplan Meier?
- ¿HR como input?

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Survival curves



Hipótesis de Hazard Proporcional.

Table 1 Methods for Estimating Mean Survival in NICE Technology Appraisals (TAs)

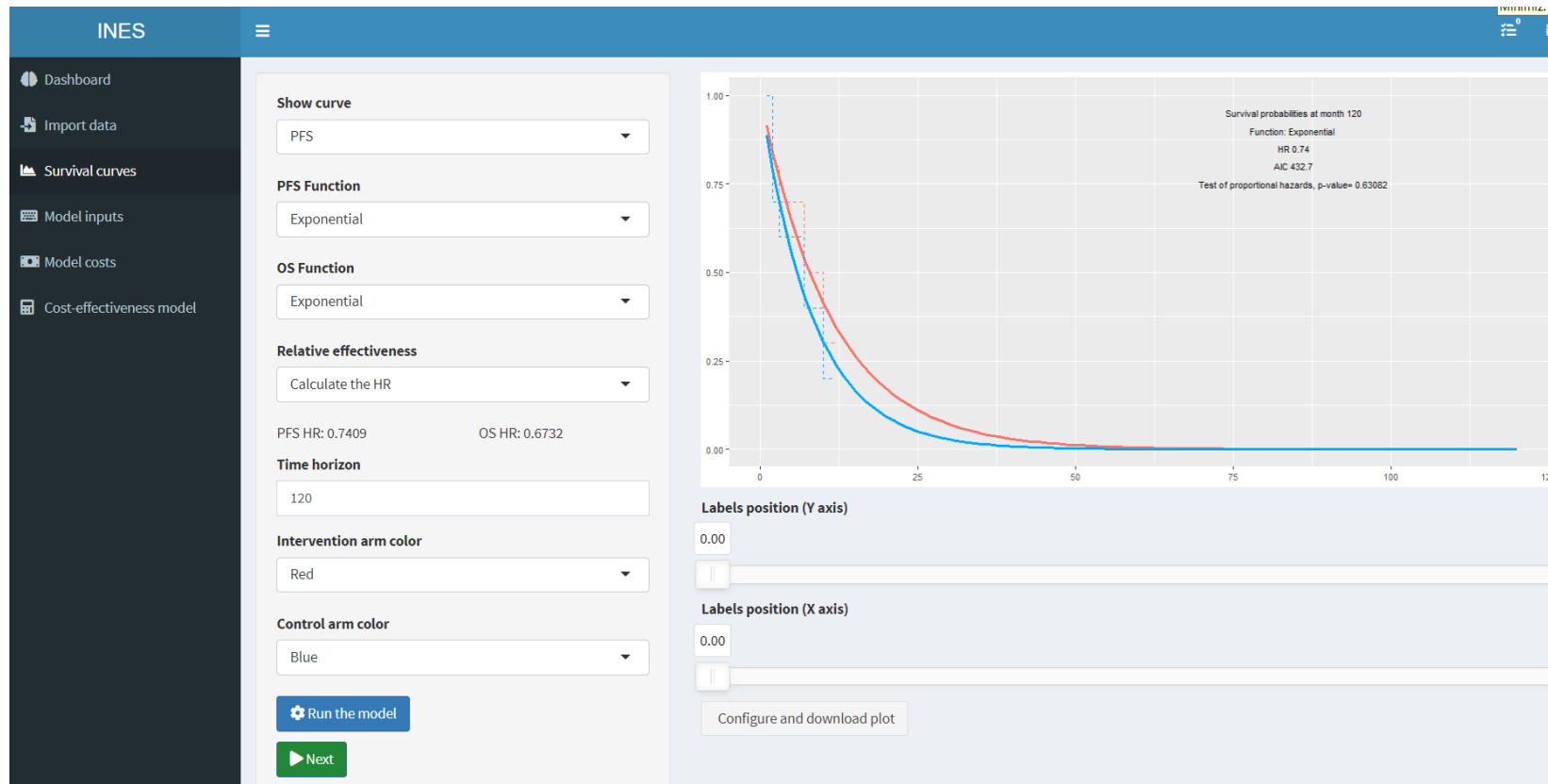
Method for Estimating Mean	Number of TAs (%)
Restricted means	17 (38%)
Parametric models	32 (71%)
Weibull	23 (51%)
Exponential	20 (44%)
Gompertz	6 (13%)
Log-logistic	9 (20%)
Log-normal	6 (13%)
Gamma	2 (4%)
Piecewise modeling	1 (2%)
Proportional hazards modeling	19 (42%)
External data	4 (9%)
Other hybrid methods	2 (4%)
Kaplan Meier—exponential method	1 (2%)
Gelber method	1 (2%)

Latimer et al. (2013)

Si se rechaza el test, ¿no hay alternativa?

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Survival curves



8 funciones de supervivencia e informa del AIC como criterio de bondad del ajuste.

¿Por qué no añadir una opción de Modelo con mejor ajuste?

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Survival curves



Extrapolación??

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Survival curves. Extrapolación

“The "hazards" of extrapolating survival curves” Davies et al. (2013)

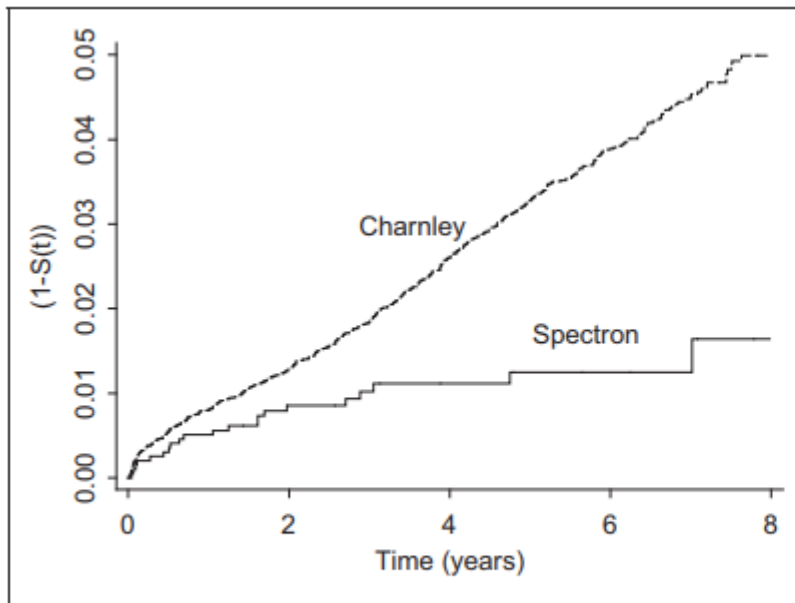


Figure 1 Kaplan-Meier failure curves for replication sample, 1992-1999 (SHORT).

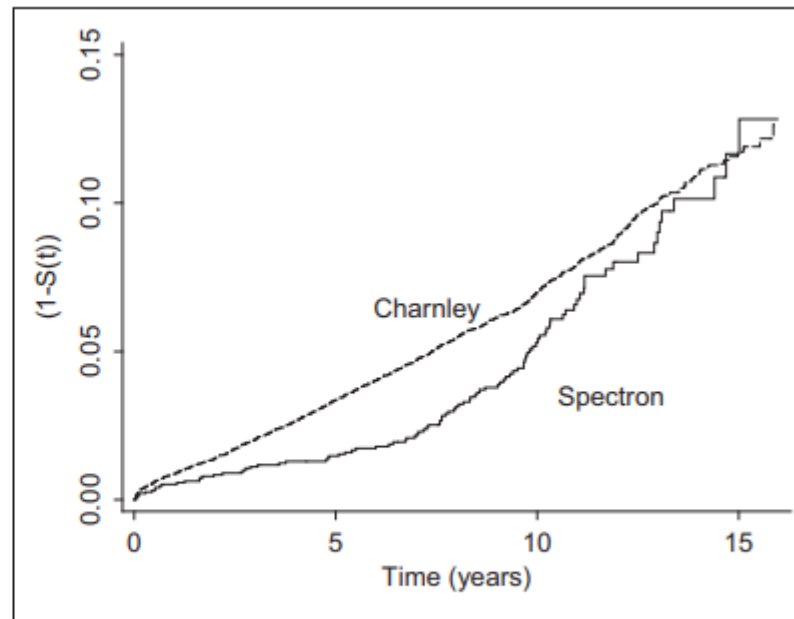


Figure 2 Kaplan-Meier failure curves for replication sample, 1992-2007 (LONG).

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Survival curves. Extrapolación

“Bayesian solutions for handling uncertainty in survival extrapolation” Negrín et al. (2017)

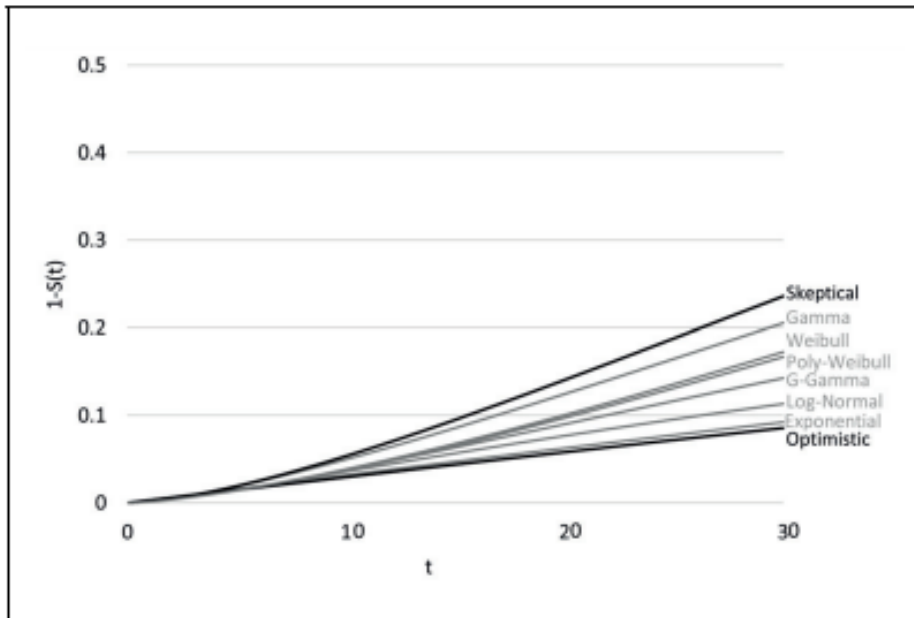


Figure 1 Extrapolated failure curves for Charnley using different model specifications using the original 8-year data set.

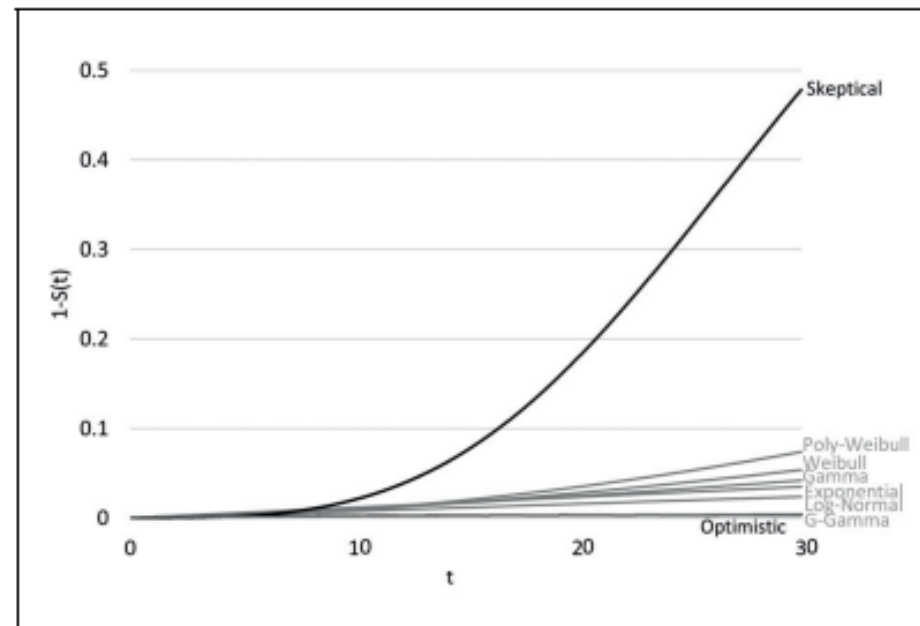


Figure 2 Extrapolated failure curves for Spectron using different model specifications using the original 8-year data set.

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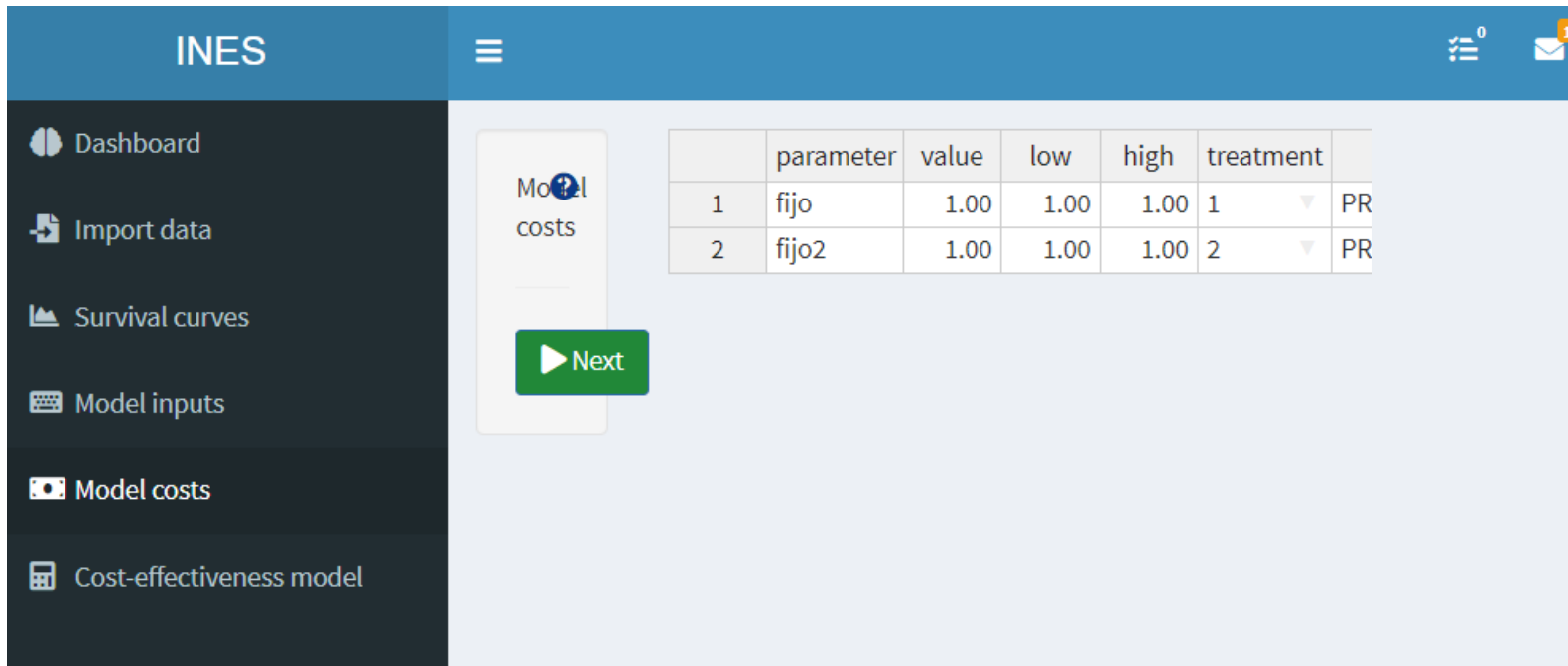
Model inputs

The screenshot displays the 'Model inputs' configuration interface. A sidebar on the left contains navigation links: Dashboard, Import data, Survival curves, Model inputs (selected), Model costs, and Cost-effectiveness model. The main content area features a 'Model inputs' panel with a 'Next' button. Below this, a table allows users to define parameters for Mean, Lower, and Upper values.

	Mean	Lower	Upper
HR PFS	0,43	0,35	0,54
HR OS	0,51	0,41	0,62
Ut. int.	0,85	0,64	1
Ut. comp.	0,85	0,64	1
Ut. both	0,52	0,39	0,65
DR	0,03	0	0,05

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Model costs



The screenshot shows the INES web application interface. The top navigation bar is blue with the INES logo on the left, a menu icon in the center, and a notification icon on the right. The left sidebar is dark grey and contains the following menu items: Dashboard, Import data, Survival curves, Model inputs, Model costs, and Cost-effectiveness model. The main content area is light blue and features a 'Model costs' section with a table and a 'Next' button.

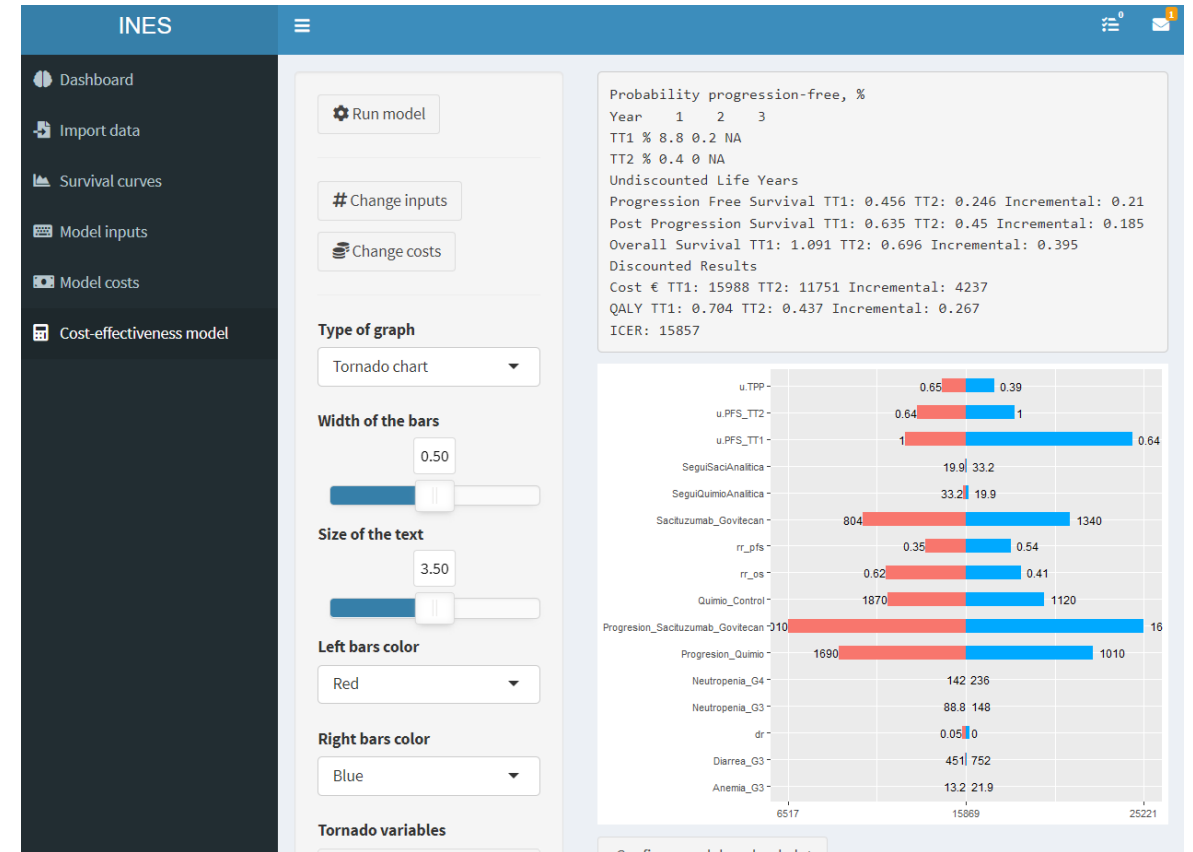
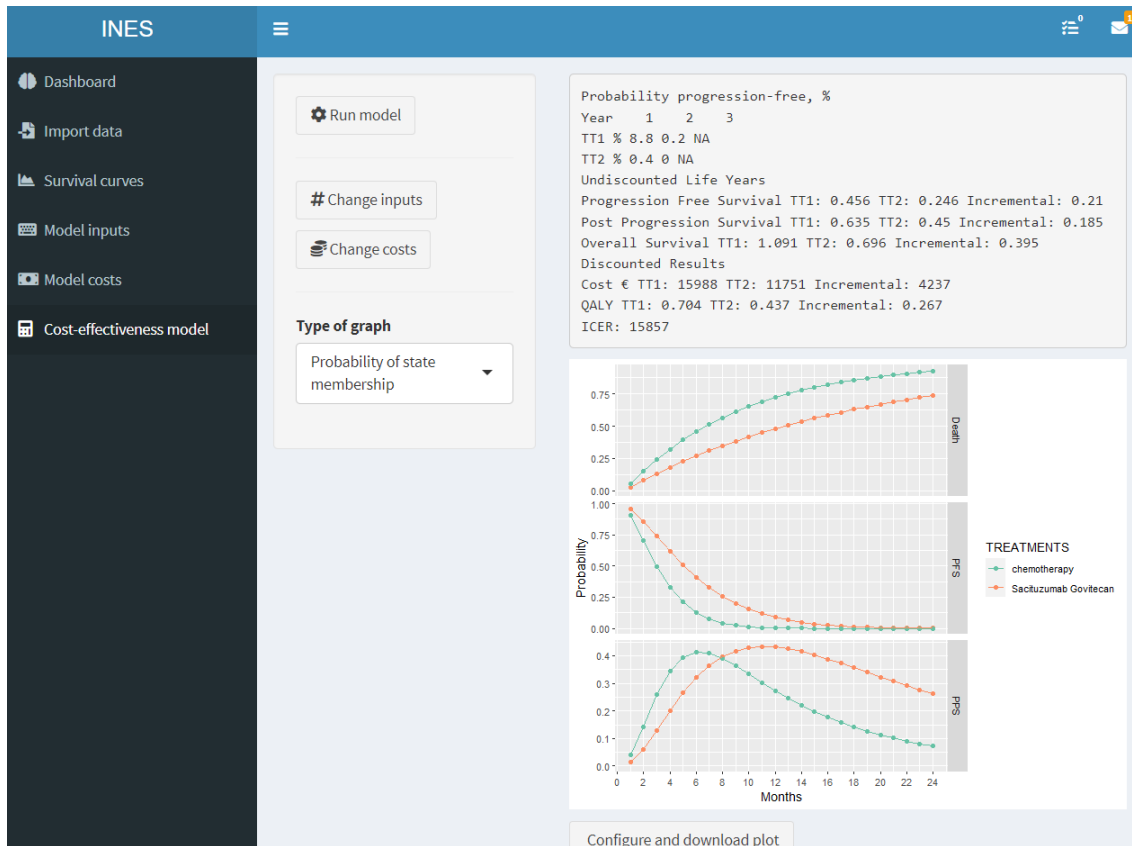
	parameter	value	low	high	treatment	
1	fijo	1.00	1.00	1.00	1	PR
2	fijo2	1.00	1.00	1.00	2	PR

Muy completo

- Distintas unidades temporales
- Variable en el tiempo

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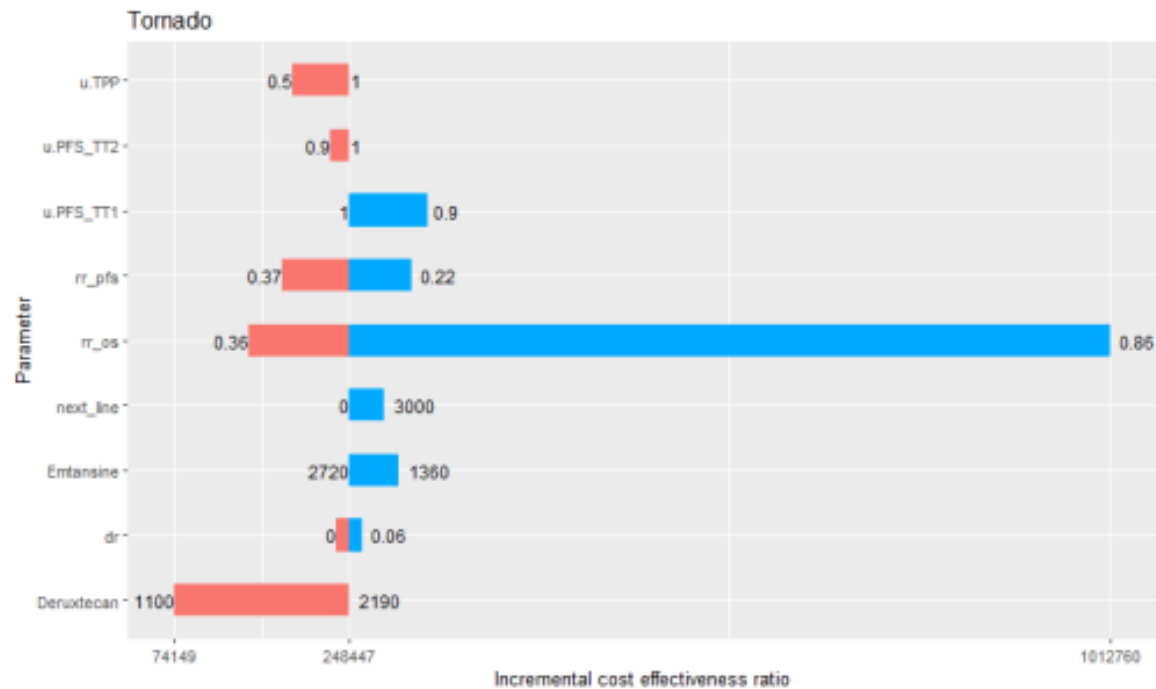
Cost-effectiveness model



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Análisis de sensibilidad univariante

Supplementary Figure 5. Tornado chart showing the effect of changes in parameters on the incremental cost-effectiveness ratio



Cómo se trata la incertidumbre sobre los parámetros del modelo

¿IC 95% de la estimación?

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Otros comentarios

- Template requiere ejemplo
rr_pfs, u.PFS, DR
...by selected
- Salida. Estimación parámetros. IC95%
- Identificación de errores
- Otros shiny alternativos

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Cost-effectiveness model

