



D4.5 Publicly accessible software tool

(Version 1.0, 30/06/2025)

Deliverable description

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| DELIVERABLE: D4.5 Publicly accessible software tool |
| WORK PACKAGE: WP4. Financing sustainable adoption of new technologies |
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1. Description

This file describes how to use the software code supporting a new and flexible approach to the Budget Impact Analysis (BIA) of innovative pharmaceutical products, as described in Deliverable 4.4 of the FLASH project (“Flexible approaches to support health through financing”; <https://flash-project.com/>). The aim is to provide a tool to improve payers' and manufacturers' ability to predict the budget impact of pharmaceutical innovations over time in situations that present complexity that more standard approaches do not fully address. This is done by relying on the properties of Markov models, which are widely employed in economic evaluations of new technologies but not in budget-impact analyses. A key characteristic of the tool is that it is not product-specific, in that it can be adapted to estimate the budget impact of several innovations, simply by providing the relevant input for the situation of interest.

The code was developed using MATLAB®, but it is written so as to be also compatible with the free and open-source software application OCTAVE. The model relies on a number of assumptions, which are detailed in Deliverable 4.4. Any future contributions from other authors that aim to relax some of these assumptions, correct mistakes, or improve the tool in general are very welcome. New versions of the code, if any, will be made available through the Zenodo page of the FLASH project.

2. Usage

The user interested in the usage of this model for a specific BIA is advised to read Deliverable 4.4 of the FLASH project, which provides a comprehensive description of the model.

The analysis can be performed by running the file “driver.m”. Running this file without making any changes in the other files that it calls will produce the results and the graphs included in the example presented in Section 4 of Deliverable 4.4. The key input parameters must be included in the file “parameters.m”. Note that, depending on the number of sequences and the number of treatments in each sequence, more commands may need to be added to the current version of the code, or part of the code may need to be removed. The user is guided through the process of making these adaptations by the comments that are provided at various points throughout the code.

The other relevant files are function files that perform specific tasks:

- “transition.m” produces the transition matrices of the underlying Markov model;

- “trace_b.m” produces Markov traces;
- “costs_2024” computes total and net costs;

These files should only be edited by users willing to change some characteristics of the model or to correct errors, if any.

For any further information, feel free to contact the author at paolo.pertile@univr.it.

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