



Model QCR

User Guide

Automated quality control for Excel-based health economic models



Version 1 | September 2026

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1. What Model QCR does

Model QCR reviews an Excel health economic model and tells you what it checked, what passed, and what deserves a second look. It is a first-pass validation, not a substitute for expert review.

It works in a particular order, and that order is the reason its findings are checkable rather than opinions:

1. **It reads the workbook.** Every formula is parsed and traced back to the input cells it depends on.
2. **It builds a map of the model** from those formulas: health states, treatment arms, transitions, costs, utilities and time structure.
3. **It proves the map against your workbook.** The results you nominated, and every cell they depend on, are reproduced from the workbook's own formulas and compared with the workbook's own saved values.
4. **Only then does it review.** Structural checks and behavioural tests run against a model it has already shown it can reproduce.
5. **It reports.** A Word report with the findings, the evidence behind them, and a description of the model itself.

NOTE: If Model QCR cannot reproduce your model's results, it does not issue a partial report. It stops and tells you why. See section 9.

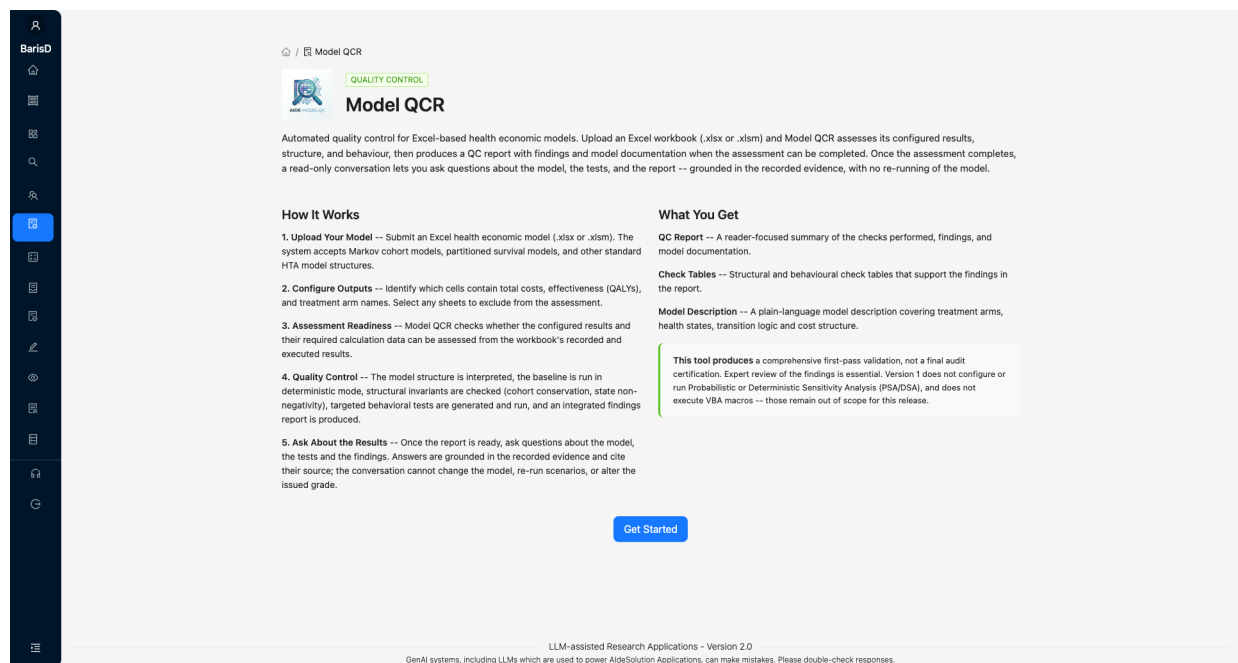


Figure 1. The Model QCR start page, reached from the left-hand menu.

1.1 What you need

- An Excel model in **.xlsx** or **.xslm** format, up to 100 MB.

- The model saved with its calculated values in place. Model QCR compares its own recomputation against the values your workbook has stored, so a workbook saved without cached results cannot be verified.
- Knowing which cells hold your total cost and total QALY results, and what your treatment arms are called.

1.2 What version 1 does not do

- It does not run probabilistic or deterministic sensitivity analysis (PSA or DSA).
- It does not execute VBA macros.
- It does not change your model. Your workbook is never modified.

2. Uploading your model

Select **Model QCR** from the menu, then **Get Started**. Drag your workbook onto the upload area, or click it to browse.

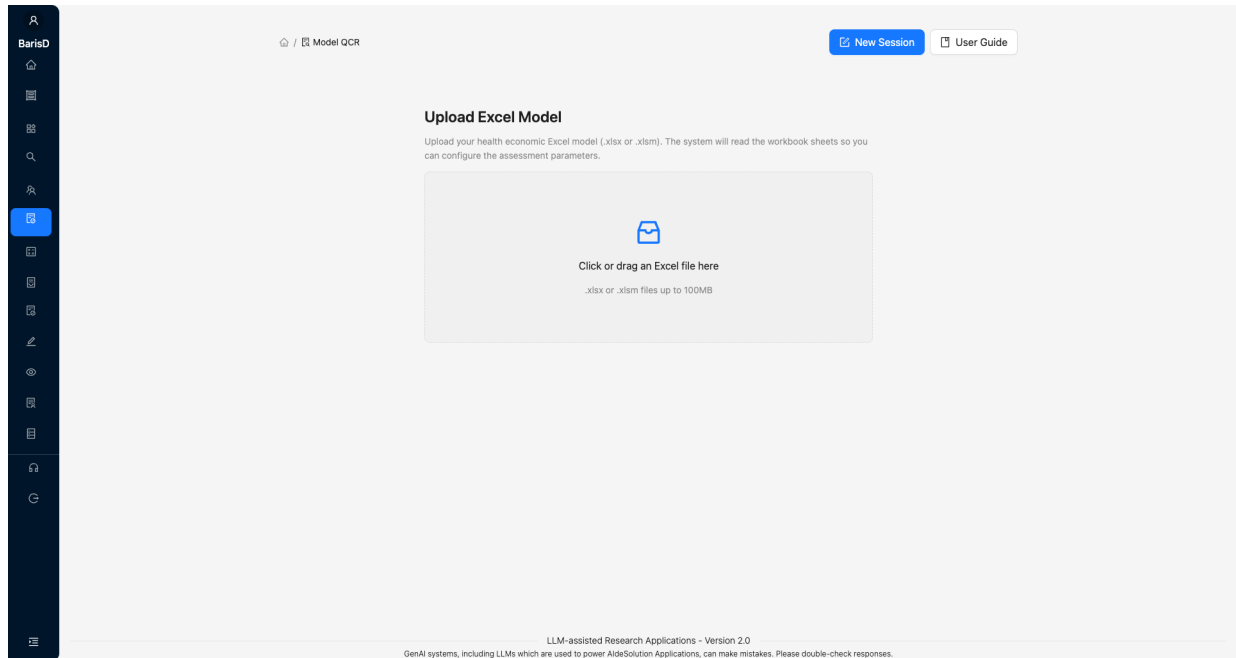


Figure 2. The upload screen. The workbook is read but never altered.

Model QCR opens the workbook and reads its sheet names so it can offer them to you in the next step. Nothing is analysed yet.

3. Configuring the assessment

The wizard asks four things. None of them changes your model; they tell Model QCR what the model is for.

3.1 Sheets to ignore

Simulation output sheets hold thousands of iterations or sensitivity rows rather than model logic. They dominate the cost and memory of an assessment and tell you nothing about whether the model is built correctly, so they are left out.

Model QCR pre-selects sheets whose names look like simulation output. Review the selection and add anything else that is not model logic: raw data dumps, cover sheets, instructions, change logs.

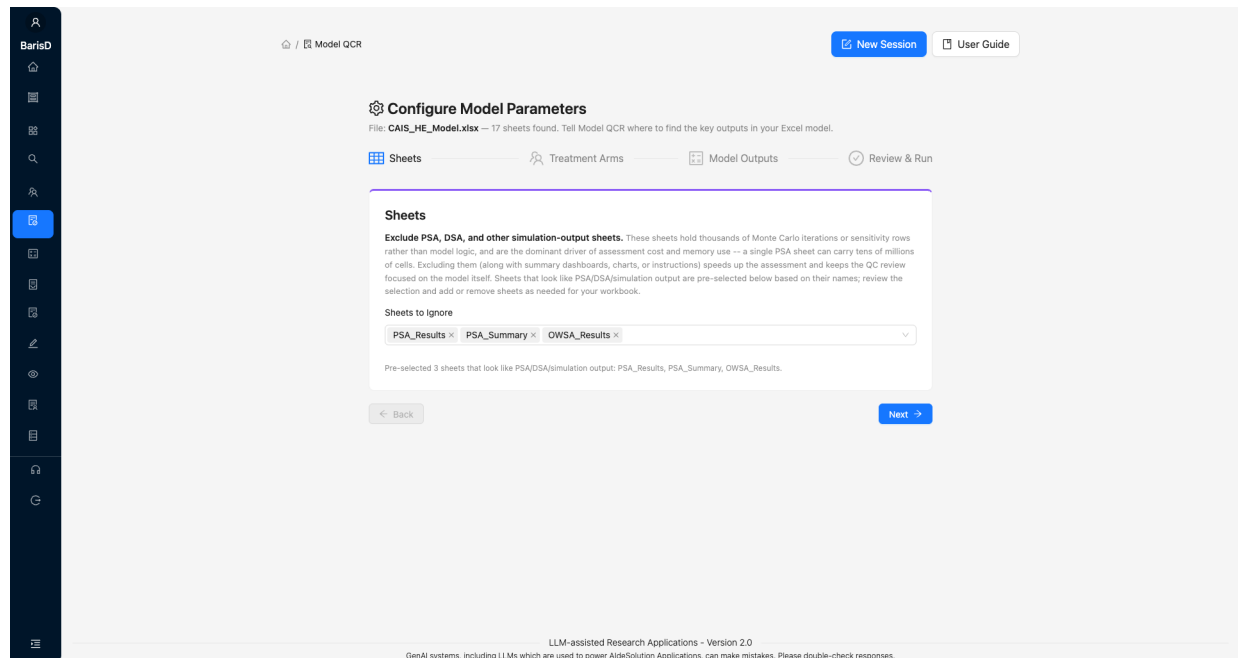


Figure 3. Sheets step. The tool has pre-selected the sheets whose names look like simulation output.

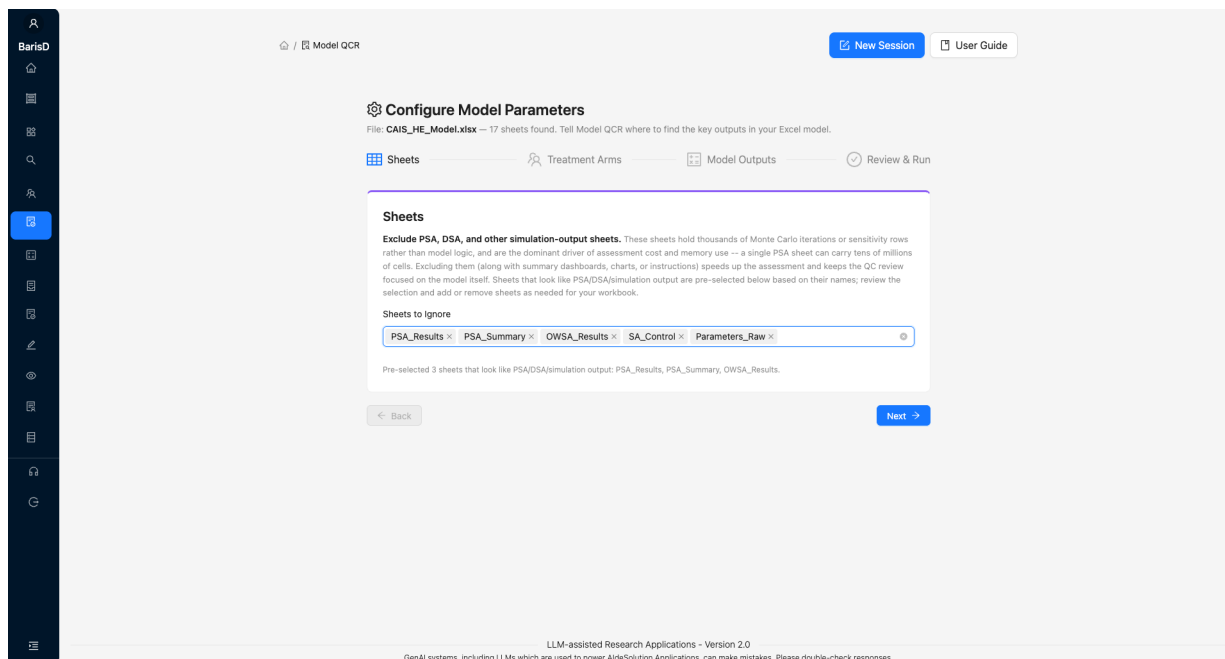


Figure 4. The same step after adding two more sheets by hand. Five sheets will be left out of this assessment.

IMPORTANT: Excluding a sheet removes it from the review entirely. Do not exclude a sheet your results depend on, or Model QCR will not be able to reproduce them.

3.2 Treatment arms

Name each strategy in the model. The order matters: it must match the order of the result cells you give in the next step.

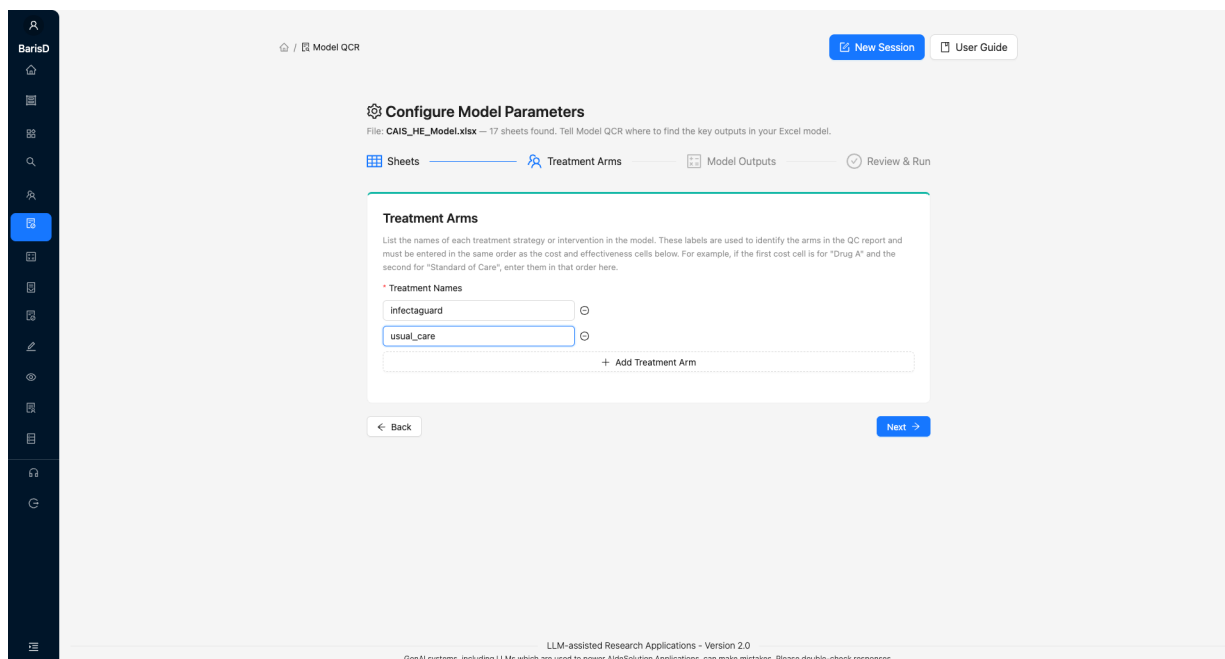


Figure 5. Treatment arms, entered in the same order as the result cells that follow.

3.3 Outcome cells

Point to the single cell holding the total discounted cost for each arm, and the single cell holding total discounted QALYs for each arm. These are usually on a results or summary sheet.

Figure 6. Outcome cells. One cost cell and one QALY cell per treatment arm.

TIP: These four cells are what Model QCR proves it can reproduce. Choosing the wrong cells is the most common reason an assessment does not do what you expected.

3.4 Review and run

The last step restates the whole configuration. Check it, then run.

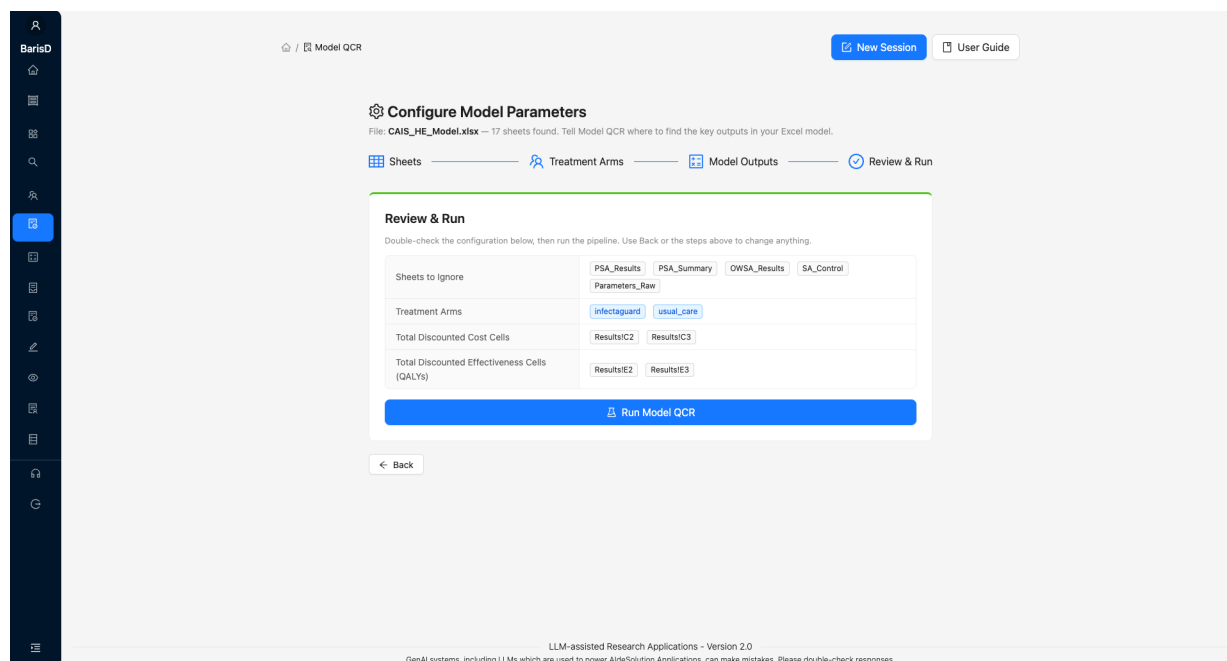


Figure 7. The configuration summary before the assessment starts.

4. While the assessment runs

The progress screen shows the stage the assessment has reached. A typical model takes about five minutes. You can leave the page and come back to it.

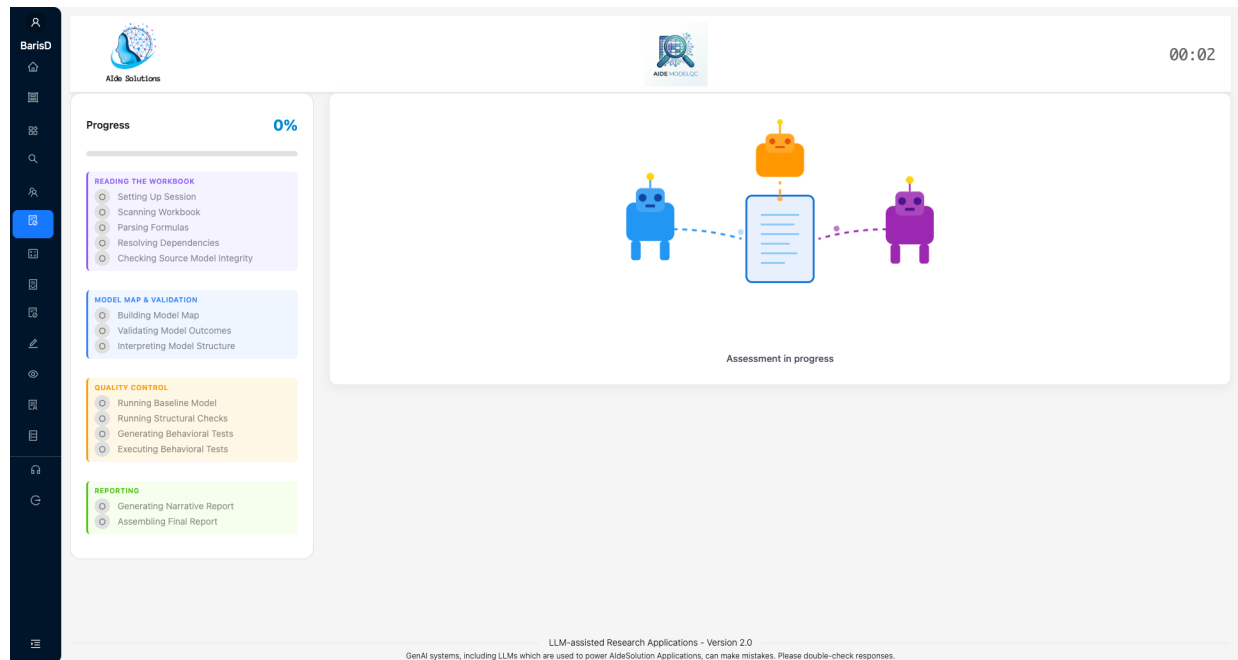


Figure 8. The progress screen, grouped into four stages.

Stage	What happens
Reading the workbook	Formulas are parsed, dependencies resolved, and the workbook is checked for errors it already contains
Model map and validation	The model map is built, your nominated results are reproduced and compared, and the model's structure is interpreted
Quality control	The baseline is run, structural checks are evaluated, behavioural tests are generated and executed
Reporting	The findings are written up and the report is assembled

5. Reading the results

The results screen opens on an overview, with the assessment conversation on the left and six tabs on the right.

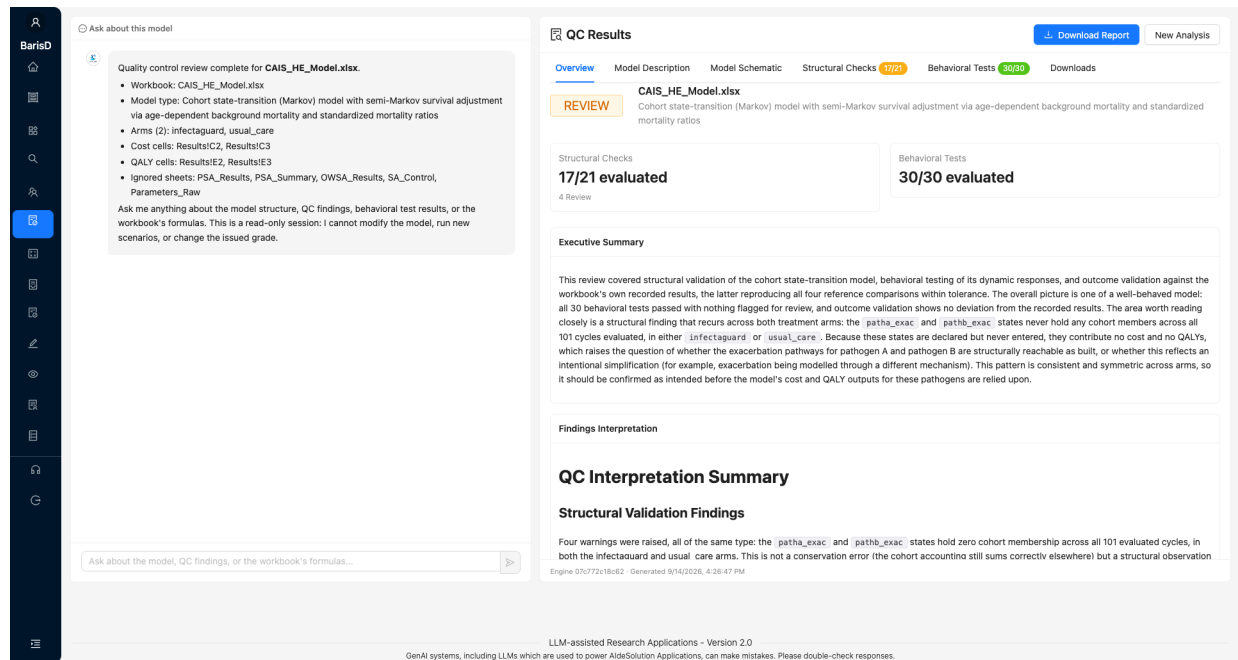


Figure 9. The results overview: an overall status, two counters, an executive summary and an interpretation of the findings.

The two counters report **evaluated** checks only. A check that could not be evaluated on your model is not counted as a pass, and is not hidden either. Anything flagged for a second look is stated separately as **Review**.

5.1 Model Description

Because Model QCR has built a map of the model, it can describe it back to you: population, health states, treatment arms, efficacy logic, mortality, costs, utilities and time dependencies, each with the cells it came from.

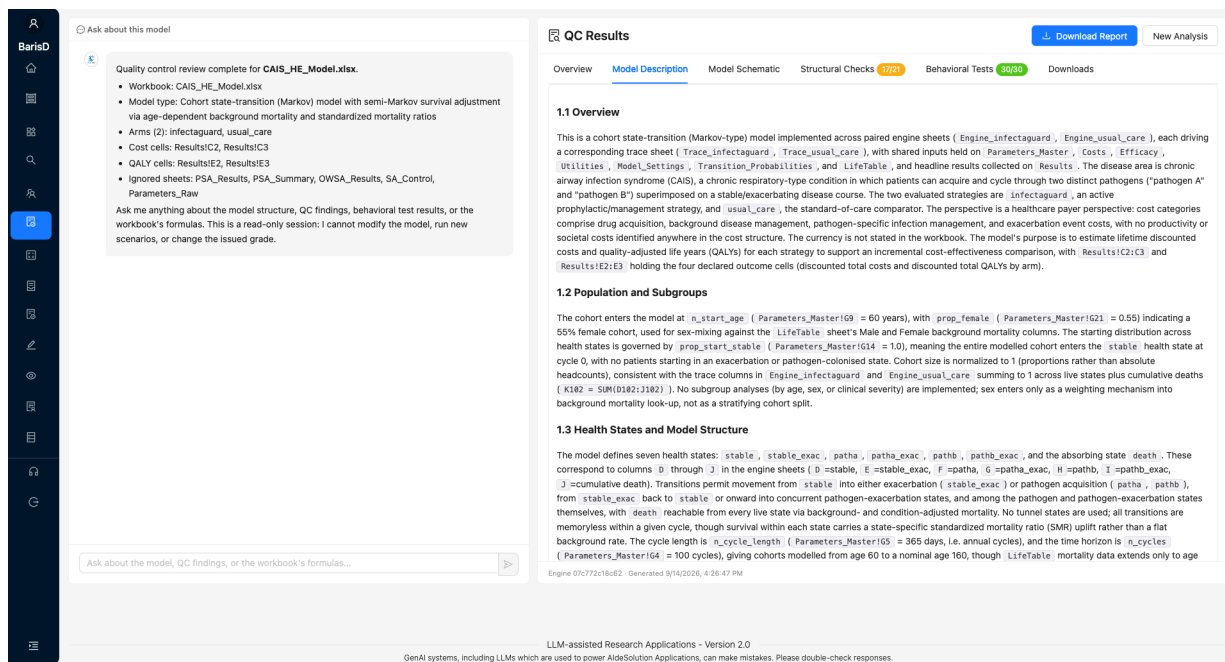


Figure 10. Model Description, generated from the workbook's own formulas.

5.2 Model Schematic

The schematic is drawn from what the formulas actually do, not copied from a diagram in the workbook. If a state is declared but never reachable, it still appears here, because the model declares it.

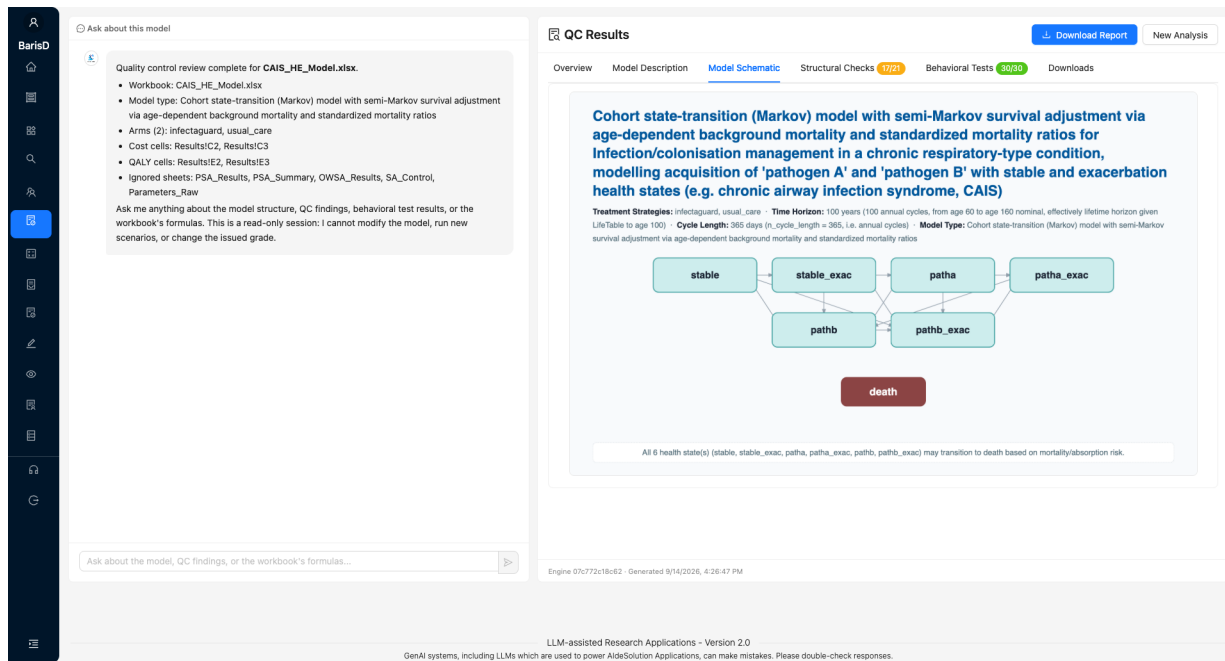


Figure 11. The model schematic, derived from the transition logic in the workbook.

5.3 Structural Checks

Fixed, deterministic checks on the model's structure. Each row states the condition tested in plain English and the result. Which checks can be evaluated depends on your model's own structure.

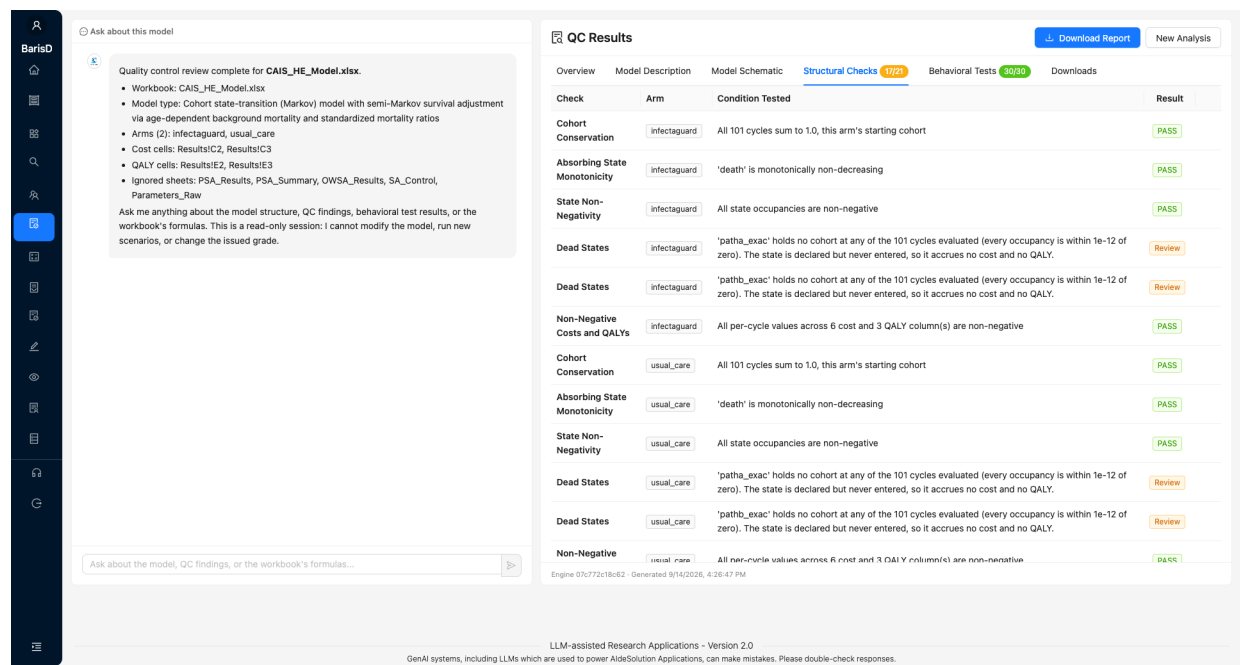


Figure 12. Structural checks. Each row is a sentence, and the result is either PASS or Review.

5.4 Behavioral Tests

Two groups. A **standard battery** runs on every model: cohort conservation, monotonic death, valid probabilities, cost and QALY accumulation, discounting behaviour. Then **tests specific to this model**, proposed from the inputs and outcomes your model actually exposes and checked against the model before they run.

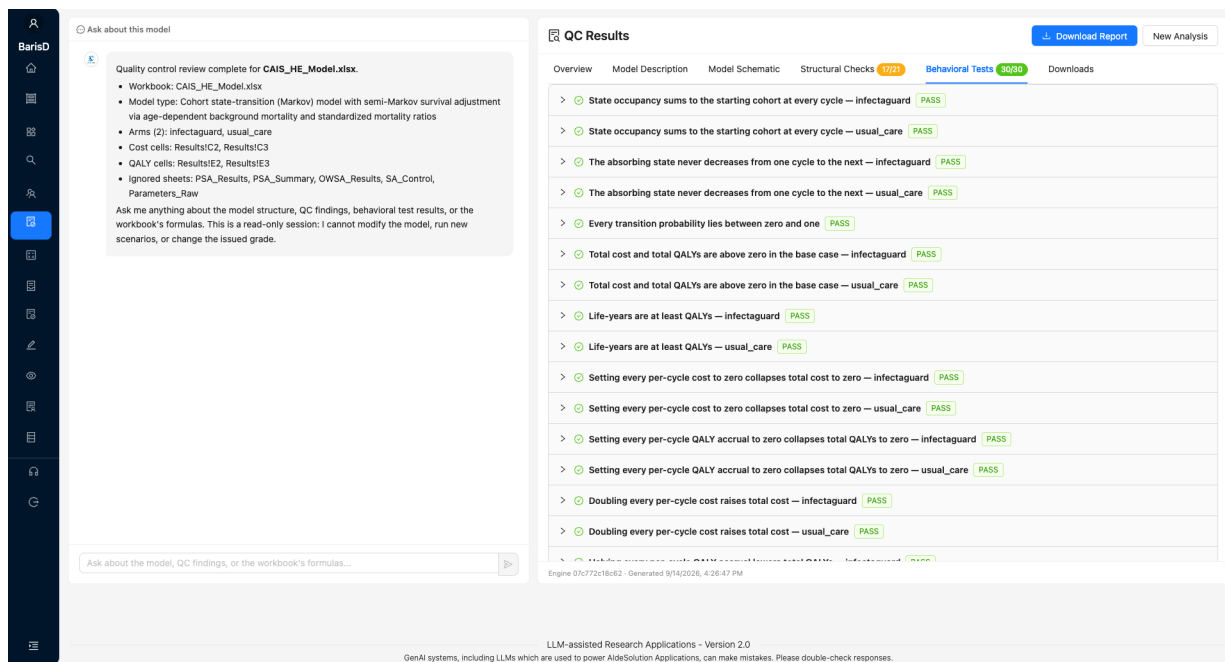


Figure 13. The behavioural battery. Every test states what it expected and what it observed.

Expand any test to see what was tested, which values were overridden, and the expected direction against the observed result.

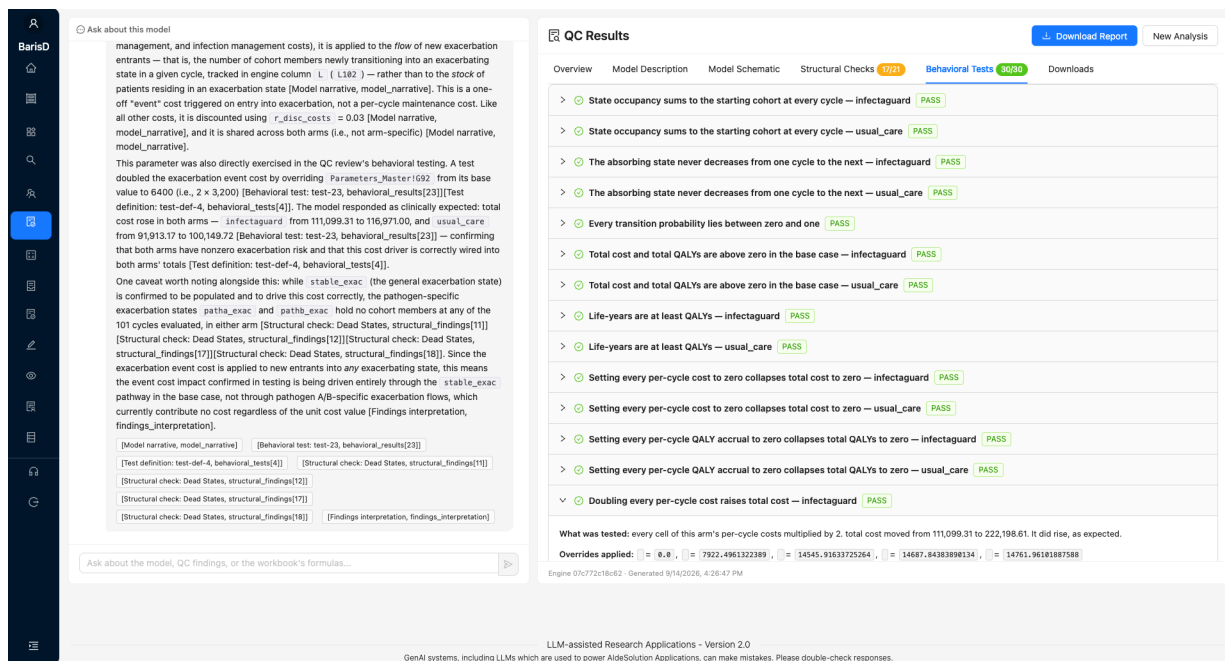


Figure 14. An expanded test showing the baseline value, the test value and the direction expected.

5.5 Downloads

Five files: the QC report, the model schematic, the two check tables as CSV, and a transcript of your conversation.

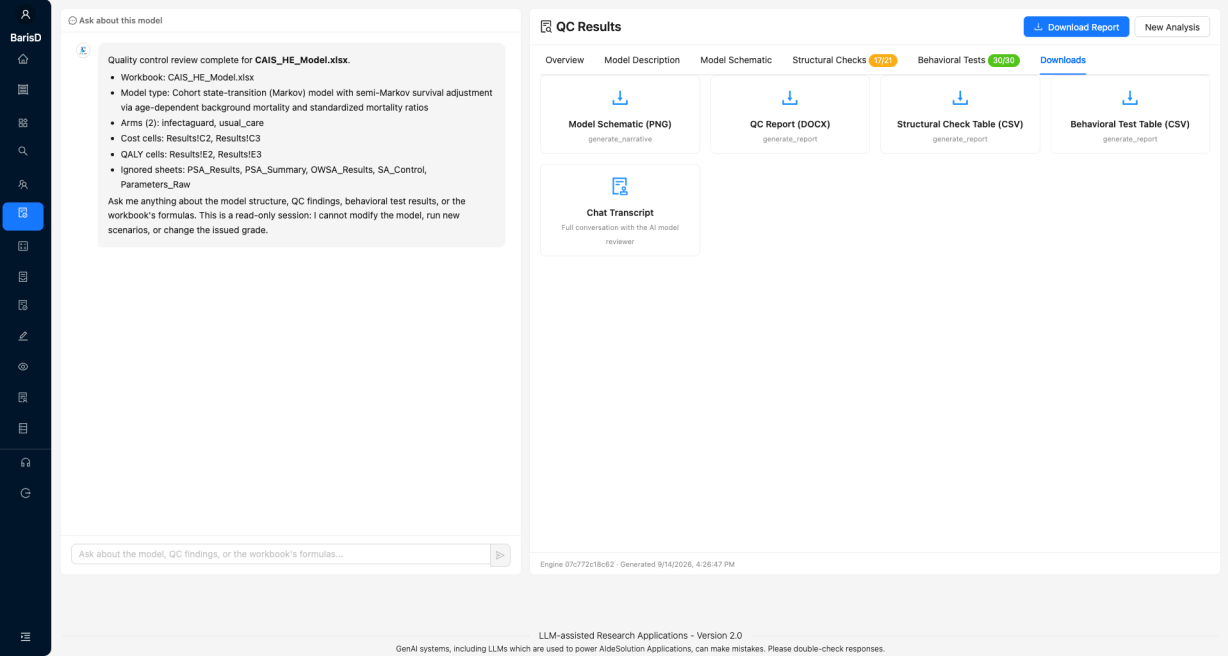


Figure 15. The Downloads tab.

6. The QC report

The report is the deliverable, and it is written to be handed on. It carries the findings, the evidence behind each one, and a full description of the model, with appendices holding every check, test and trace.

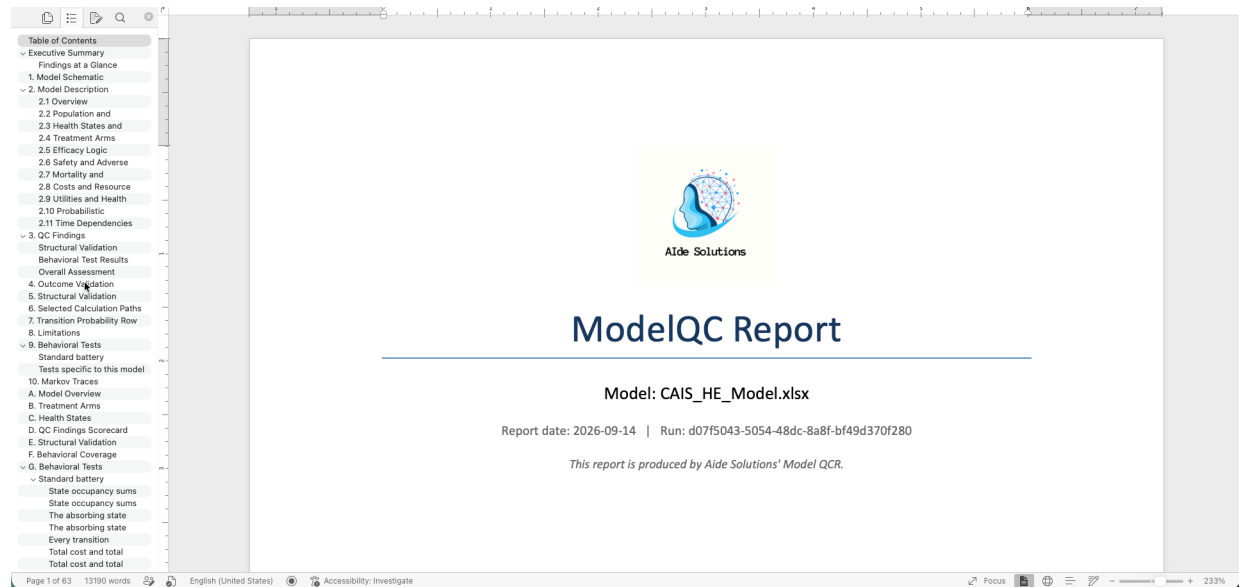


Figure 16. The report's structure, shown in Word's navigation pane.

Findings at a Glance opens the report with anything flagged, followed by what passed. **Overall Assessment** states the reviewer's read of the model as a whole.

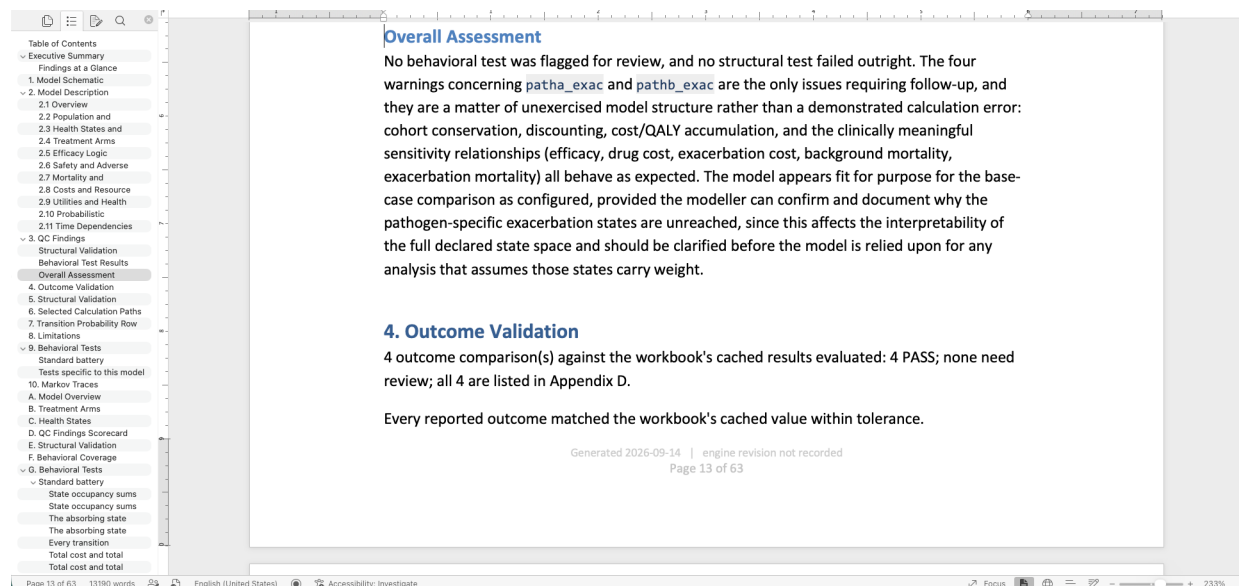


Figure 17. The Overall Assessment and the outcome validation that precedes the review.

Appendices carry the detail: a scorecard, every structural check, behavioural coverage, every test, the cohort traces and the parameter registry.

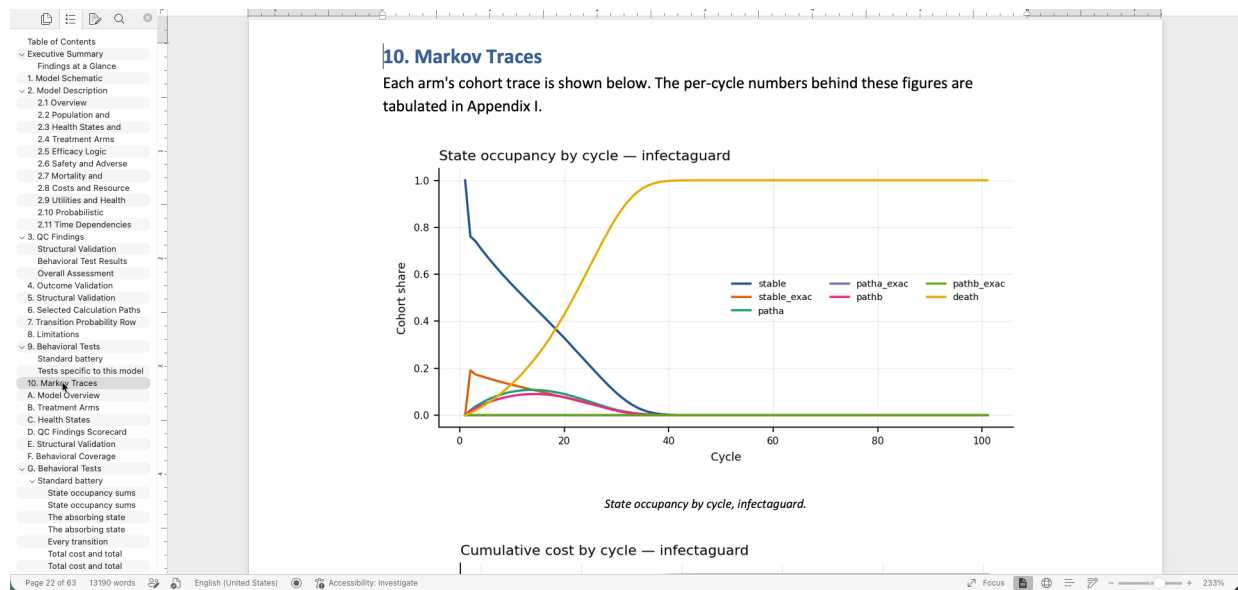


Figure 18. Cohort traces for each arm, with the per-cycle numbers tabulated in an appendix.

The conversation on the left answers questions about the model, the checks and the findings. Every answer is grounded in the recorded evidence and cites where it came from, and you can open any citation.

Figure 19. An answer citing the evidence it came from.

NOTE: The conversation is read-only. It cannot change the model, run new scenarios, or alter the issued result. If the evidence does not support an answer, it says so rather than inventing one.

8. When an assessment cannot be completed

Model QCR does not issue a partial review. If it cannot establish that it has reproduced your model, it stops and names the reason on screen:

Reason	What it means	What to do
Workbook error	The workbook itself contains stored errors that reach your nominated results	Open the model, resolve the errors, save with values in place and upload again
Unsupported construct	The workbook uses something Model QCR cannot reproduce, such as a macro-defined function	Check the named construct. Version 1 does not execute macros
Could not replicate	Recomputed values did not match the workbook's own saved values	Usually means the saved values are stale. Recalculate, save and upload again

Where several reasons apply, all of them are listed.

9. Scope and limitations

- **A first-pass validation, not a certification.** Expert review of the findings is essential.
- **PSA and DSA are not configured or run** in version 1.
- **VBA macros are not executed.** A model that depends on macros for its results cannot be fully assessed.
- **Coverage depends on how the workbook is organised.** A clearly structured, well-labelled model receives the most complete analysis.
- **Your workbook is never modified.** Every check works on Model QCR's own reproduction of it.

10. Getting help

Use the **Support** entry in the left-hand menu, or contact Aide Solutions directly. When reporting a problem, include the run identifier shown in the footer of the results screen.