

Still Excelling?

An assessment of software used in NICE Single Technology Appraisals and ICER reports in 2019

Catrin Treharne, Mateo Delclaux Rodriguez-Rey, Richard Macaulay, Andrea Berardi
 Parexel International,
 London, UK
 catrin.treharne@parexel.com

Background

- Manufacturers have a choice of software when developing economic models to submit to the National Institute of Health and Care Excellence (NICE)
- Microsoft Excel has long been a preferred platform, given its familiarity and perceived ease of use
- The objective of this analysis was to assess the software chosen for NICE Single Technology Appraisal (STA) submissions as well as for reports published by the Institute for Clinical and Economic Review (ICER) in the United States in 2019

Methods

- Guidance published on NICE and ICER websites was reviewed to identify the software used to develop economic models
- All NICE STA submissions published in 2019 were reviewed (01/01/2019-31/12/2019), alongside reports published by ICER during the same period
- The appraisals identified were screened to determine the software used for the development of the economic model
- The findings were subsequently compared with those of a similar analysis conducted for NICE appraisals and ICER reports published in 2018 (Berardi, ISPOR US New Orleans 2019, PN542)

Results

- 50 completed NICE STAs were identified for the period of interest
 - The software used was identified in 96% of cases. The manufacturer clearly documented the software used in twenty-one (42%) submissions
 - Where the company did not provide this information in the manufacturer's submission, it was reported in or inferred from accompanying documentation (most notably in the Evidence Review Group report, Figure 1)
- In all cases, Excel was used, including in submissions employing patient level simulation models (Figure 2)
 - In one submission (TA597: Dapagliflozin with insulin for treating type 1 diabetes), Excel was used in combination with C++ to develop a microsimulation analysis
 - This echoes findings of appraisals completed in 2018 where all submissions presented models developed in Excel (n=42)
- In the three ICER reports published during the same review period, Excel was used for the development of the economic model in two of the assessments; for the third, the software used was not reported
 - In 2018, 82% (9/11) of the models were programmed in Excel, with R and TreeAge used for the other two

Figure 1: Reporting of software in NICE STAs in 2019 (n=50)

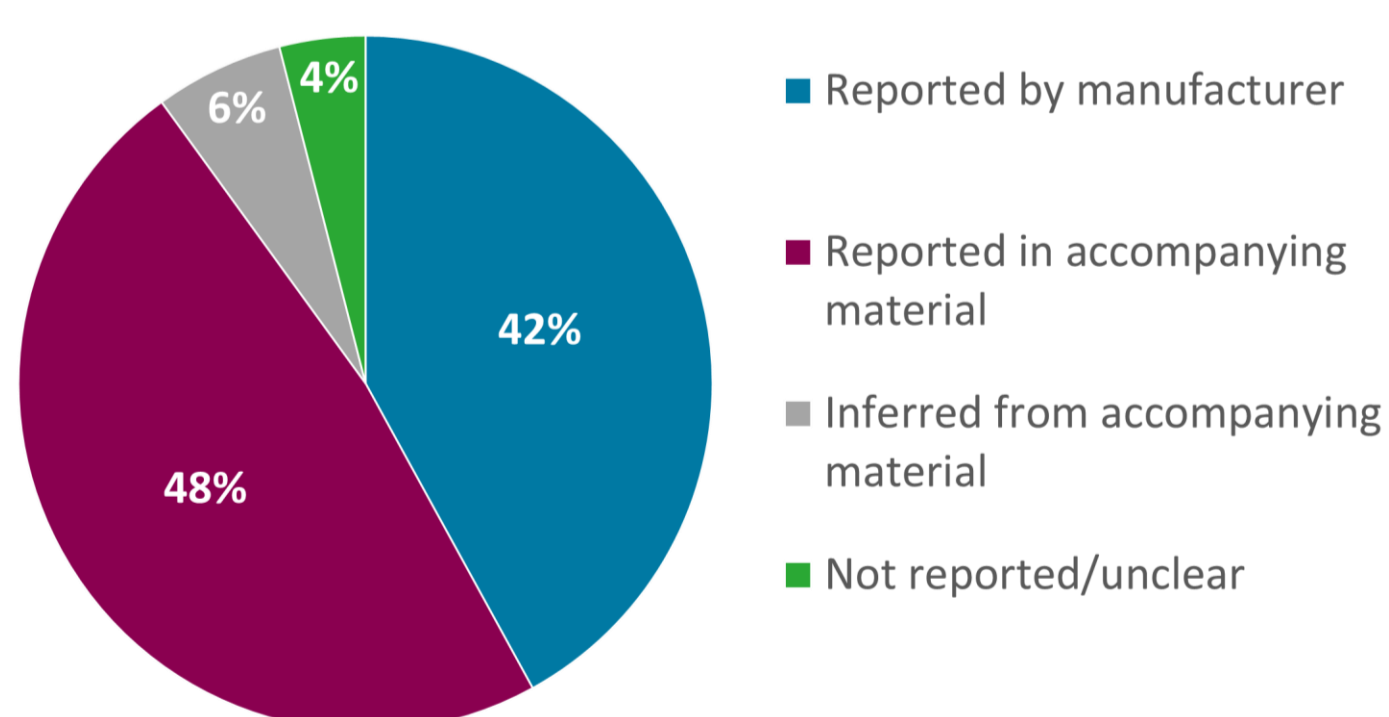
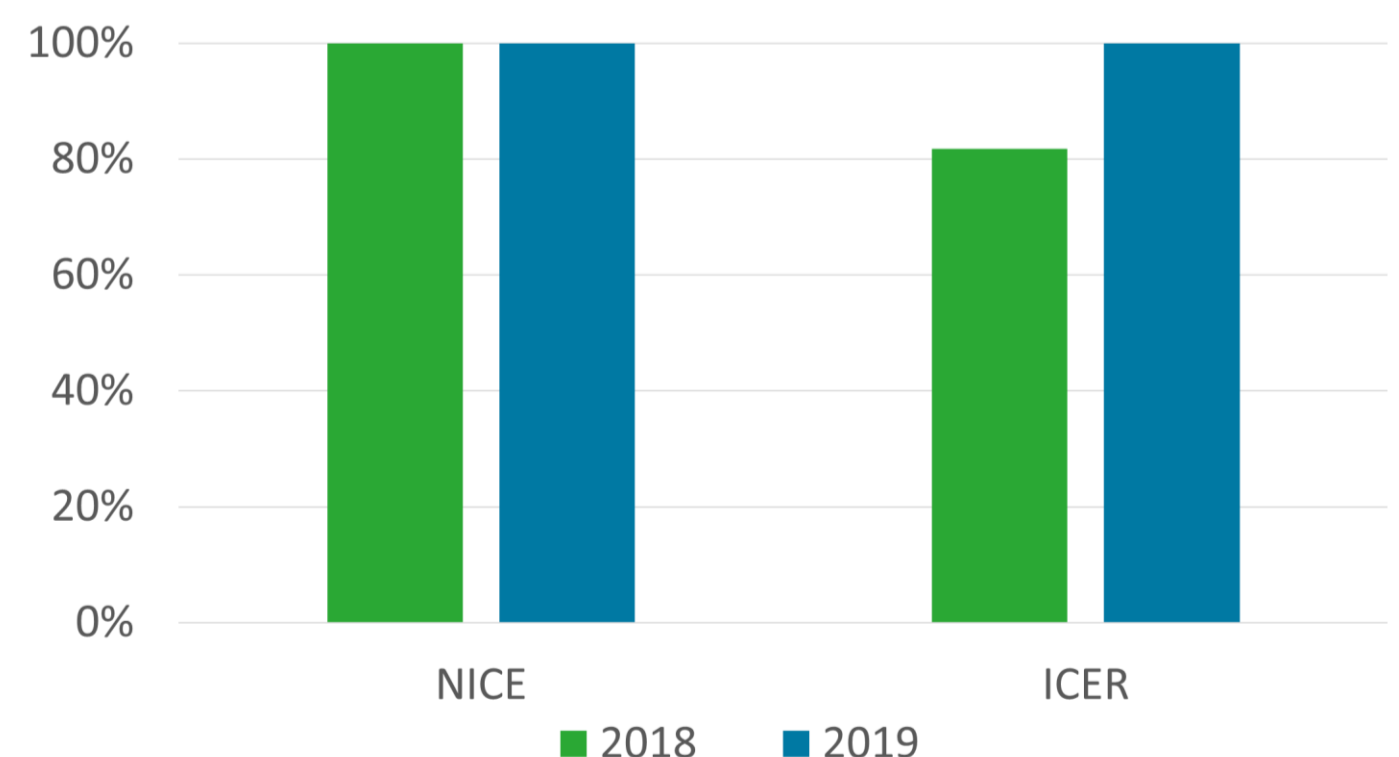


Figure 2: Use of Excel for NICE STA and ICER models in 2018 and 2019



Conclusion

- Excel continued to be the software of choice for manufacturers submitting models as part of the NICE STA process in 2019, echoing findings from 2018
- Of note is the absence of any models developed in R which continues to gain traction in the academic field
- Looking forward to 2020, the use of models developed using the heRo3 platform may become more widespread in ICER value assessments