**Background:** Disease severity is often measured using different and incompatible systems of classification. This is problematic if the health related quality of life (HRQoL) is reported by severity as classified using one system and the costs are reported by severity using a different system.. Robust methods for mapping between categories are therefore required. Using stroke as a case study, this paper describes a method for mapping HRQoL from more (seven) to fewer (three) categories in a way which does not underrepresent the additional uncertainty involved in this indirect use of evidence.

**Methods:** An informal Bayesian simulation approach was used to estimate, with credible intervals, the estimated mean HRQoLs of patients in each of the three state categorisation system given summary data reported in the seven state categorisation system.. The approach incorporates the known uncertainty about both the expected HRQoL in each of the seven states and known uncertainty about the proportion of patients in each of the seven categories. The three-state estimates produced were compared with older estimates to assess face validity.

**Results:** Estimates of mean HRQoL were produced for each of the three categories incorporating the above uncertainties, so both cost and HRQoL were available to be used at the same level of aggregation within an economic model. The new three-state estimates produced were similar to much older estimates, with differences suggesting and reflecting improved patient outcomes.

**Limitations:** A number of assumptions needed to be made in order to produce estimates of the HRQoL in each of the reduced states.

**Conclusions:** Data reported at different levels of aggregation can be used alongside each other using a method which appropriately incorporates multiple sources of parameter uncertainty into the estimates produced.