The following text is supplementary information to support the main paper. It provides more detailed explanation around the study design, measures and analysis and some background context to economic decision making in health care.

**Study data collection measures**

Parents completed the PIP and CSRI as part of a battery of study questionnaires prior to randomisation (baseline) and 4 months and 12 months after randomisation. Parents were given a paper copy of the baseline questionnaire pack in clinic after providing written informed consent. Follow-up questionnaires were sent by post. At each timepoint, parents were also given the option to complete the questionnaire online, accessed via a link to Qualtrics software.

**Pip scoring mechanism**

In addition to the information provided in the main paper, where a baseline score moved from 20 to 10, rather than depict this as -10, this was simply reversed to read as 10, as higher scores indicate higher levels of stress, thus a reduced score equates to an improvement. Conversely if scoring moved from, 20 to 30 this represented a deterioration of 10 points in the scoring. Cost and clinical outcome (PIP) data were used at both the 4 month and 12month time points.

**Cost data collection from the parents of children with juvenile idiopathic arthritis**

Within the CSRI survey questionnaire instrument there was a section which also asked parents which benefits or allowances they received. This included income or disability support, jobseeker, carer's or attendance allowance, as well as any benefits that may assist with care in other ways. Using the CSRI survey questionnaire the research team also sought to establish if the parents received care component, mobility component, statutory sick pay, housing benefit, council tax benefit, a state retirement pension, child benefit, universal credit or working tax credits.

Where both parents completed a CSRI survey, to avoid double counting and inadvertently increasing the costs, the average of the total for both sets of data supplied was taken and reapplied half and half to each participant. This occurred on 11 occasions with the control arm and 6 times with the intervention arm of the study.

**Missing data**

At the 4 month follow up missed data ranged from 39.1% missing for a variable describing resources associated with visits to see the rheumatologist to 45% missing for a variable describing resources associated with visits to see a psychologist. At the 12 month follow up this range was 46.4% missing for visits to Accident and Emergency to 49.5% missing for visits to see a psychologist. At the 4 month follow-up the intervention arm of the trial was on average 12% less likely to have complete data than the control arm and 4% less likely at the 12 month follow-up.

Currently as many as 43% of all economic evaluations restrict their analyses to those patients with complete data (Leurent, 2018). In contrast however we used multiple imputation of item variables as this is considered to be a superior imputation approach with better precision than imputation at the aggregate level and preferable to defaulting to a complete case analysis method.

**Using cost acceptability effectiveness curves**

Cost acceptability effectiveness curves were calculated in addition to costing analyses and the point estimates (ICERs) described in the main paper. These additional analysis more specifically inform funders on the likelihood of WebParc being cost-effective (or not) as compared to usual care. The cost-effectiveness acceptability curves provide visual information for a range of financial values (in our study up to a value of £50,000) that a decision maker such as the National Institute for Health and Care Excellence (NICE) might be willing to pay from the public purse for a unit gain in health or a change/improvement in a condition-specific outcome. In our study this would be for improvements in the scores in illness-related parenting stress, using the Pediatric Inventory for Parents (PIP) measure and its sub measurement scores for frequency and difficulty.

Cost effectiveness was assessed using NICE’s accepted UK willingness-to-pay (WTP) threshold of £20,000–30,000 <https://www.nice.org.uk/process/pmg9/chapter/the-reference-case>

Some background around affordability of interventions and criteria for funding limits or ‘ceilings’ are provided here <https://www.kingsfund.org.uk/publications/articles/ministers-not-nhs-england-should-decide-affordability-of-treatments>

**References**

Leurent B, Gomes M, Carpenter JR. Missing data in trial‐based cost‐effectiveness analysis: An incomplete journey. Health economics. 2018 Jun;27(6):1024-40.