administered an online survey to hospital orthopaedists using two experimental techniques for preference elicitation (that is, discrete choice experiment (DCE) and case 1 best-worst scaling (BWS)). BWS data were analysed through descriptive statistics (that is, best-minus-worst score) and conditional logit model. A mixed logit model was applied to DCE data, and a willingness-to-pay (WTP) was estimated. All analyses were conducted using Stata 16.

Results. A total of ninety orthopaedists (95% male; mean age: 52.8 years) were enrolled in the survey. In BWS, the most important factor was 'clinical evidence', followed by 'quality of products', 'HTA recommendations' and 'previous experience', while the least important was 'cost'. DCE results suggested that orthopaedists prefer high-quality products with robust clinical evidence, positive HTA recommendation and affordable cost, and for which clinicians have a consolidated experience of use and a good relationship with the sales representative. The WTP for a high-quality product was estimated at EUR1,733, and for a good relationship at EUR2,843.

Conclusions. This is the first study aimed at analysing the multidimensionality of clinician's decision-making process in selecting new PPIs in orthopaedics in Italy. Despite the quality of products being declared as one of the most important dimensions in BWS, when other factors populate a hypothetical DCE scenario, physicians are not willing to accept quality at any cost (for example, high quality and very bad support from the producer or with uncertain clinical evidence).

OP223 A Semi-Automated Process To Monitor The Clinical Development And Regulatory Approval Pathway Of Innovative Medicines

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Introduction. Early identification of innovative medicines is crucial for timely health technology assessment (HTA) and efficient patient access. The National Institute for Health Research Innovation Observatory (NIHRIO) identifies, monitors and notifies key HTA stakeholders in England of 'technologies' (innovative medicines) within three to five years of regulatory approval. Increasing numbers of innovative medicines and significant uncertainties in clinical and regulatory pathways are major challenges in the monitoring and notification process. An active monitoring framework using pre-defined predictive criteria has previously been developed. This framework provides a standardized and consistent process, but is highly resource-intensive, requiring manual review of individual records.

Methods. Using the previous active monitoring framework, a scoring matrix was calculated and used to prioritize individual technologies using available data in the NIHRIO database: estimated regulatory timelines, regulatory awards/designations, innovative medicine type (for example gene therapies) and clinical trial phase, completion dates and results. A threshold for automatic and manual reviewing of technologies was developed and tested by NIHRIO analysts.

Results. The scoring system identified approximately ninety percent of technologies meeting the threshold for semi-automated reviewing. The review period for these technologies are set automatically according to predefined criteria depending on data availability. The review periods are updated automatically until the record reaches the threshold that triggers manual reviewing. The remaining ten percent had estimated regulatory timelines necessitating the need for manual reviewing and early engagement with companies to verify regulatory timelines and/or notify HTA stakeholders.

Conclusions. Preliminary analysis indicates that each technology is routinely and automatically updated. The semi-automatic updating represents a significant improvement in the efficiency of the monitoring of the large volume of technologies on the NIHRIO database. Ongoing work is being undertaken to further refine, pilot and test the system.

This project is funded by the NIHR [(HSRIC-2016-10009)/ Innovation Observatory]. The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

OP227 Exploring The Value Of Soft-Intelligence: A Case Study Using Twitter To Track Mental Health During The COVID-19 Pandemic

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Introduction. There is increasing pressure to rapidly shape policies and inform decision-making where robust evidence is lacking. This work aimed to explore the value of soft-intelligence as a novel source of evidence. We deployed an artificial intelligence based natural language platform to identify and analyze a large collection of UK tweets relating to mental health during the COVID-19 pandemic.

Methods. A search strategy comprising a list of terms relating to mental health, COVID-19 and the lockdown was developed to prospectively identify relevant tweets via Twitter's advanced search application programming interface. We used a specialist text analytics platform to explore tweet frequency and sentiment across the UK and identify key topics of discussion for qualitative analysis. All collated tweets were anonymized.

Results. We identified 380,728 tweets from 184,289 unique users in the UK from 30 April to 4 July 2020. The average sentiment score was fifty-two percent, suggesting overall positive sentiment. Tweets around mental health were polarizing, discussed with both positive and negative sentiment. For example, some people described how they were using the lockdown as a positive opportunity to work on their mental health, sharing helpful strategies to support others. However, many people expressed the damaging impact the pandemic (and resulting lockdown) was having on

https://doi.org/10.1017/S0266462321000829 Published online by Cambridge University Press

their mental health, including worsening anxiety, stress, depression, and loneliness.

Conclusions. The results suggest that soft-intelligence is potentially a useful source of evidence. The approach taken to identify and analyze this data may offer an efficient means of establishing key insights from the 'public voice' relating to critical health issues. However, there are still various limitations to consider concerning the technology and representativeness of the data. Future work to explore this type of evidence further, and how it might formally support decision-making processes, is recommended.

This project is funded by the NIHR [(HSRIC-2016-10009)/ Innovation Observatory]. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

OP236 Evidence Synthesis Of Time-To-Event Outcomes In The Presence Of Non-Proportional Hazards

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Introduction. Synthesis of clinical effectiveness is a well-established component of health technology assessment (HTA) combining data from multiple trials to obtain an overall pooled estimate of clinical effectiveness, which may inform an associated economic evaluation. Time-to-event outcomes are often synthesized using effect measures from Cox proportional hazards models assuming a constant hazard ratio over time. However, where treatment effects vary over time an assumption of proportional hazards is not always valid. Several methods have been proposed for synthesizing time-to-event outcomes in the presence of non-proportional hazards. However, guidance on choosing between these methods and the implications for HTA is lacking.

Methods. We applied five methods for estimating treatment effects from time-to-event outcomes, which relax the proportional hazards assumption to a network of melanoma trials, reporting overall survival: restricted mean survival time, an accelerated failure time generalized gamma model, piecewise exponential, fractional polynomial and Royston-Parmar models. We conducted a simulation study to compare these five methods. Simulated individual patient data was generated from a mixture Weibull distribution assuming a treatment-time interaction. Each simulated meta-analysis consisted of five trials with varying numbers of patients and length of follow-up across trials. For each model fitted to each dataset, we calculated the restricted mean survival time at the end of observed follow-up and following extrapolation to a 20-year time horizon.

Results. All models fitted the melanoma data reasonably well with some variation in the treatment rankings and differences in the survival curves. The simulation study demonstrated the potential for different conclusions from different modelling approaches.

Conclusions. The restricted mean survival time, generalized gamma, piecewise exponential, fractional polynomial and Royston-Parmar models can all accommodate non-proportional hazards and differing lengths of trial follow-up within an evidence synthesis of time-to-event outcomes. Further work is needed in this area to extend the simulation study to the network meta-analysis setting and provide guidance on the key considerations for informing model choice for the purposes of HTA.

OP242 Patient-based Evidence: A Comparison Of The Views Of Patient And Clinical Engagement Participants And Committee Members

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Introduction. The Scottish Medicines Consortium (SMC) conducts early health technology assessment (HTA) of new medicines on behalf of NHSScotland. Evidence from patients and carers on end-of-life and orphan medicines is gathered during Patient and Clinician Engagement (PACE) meetings. The output is a consensus statement describing a medicine's added value from the perspective of patients/carers and clinicians, which is used by SMC committee members in decision-making. This study compared the importance of factors in the PACE statement to PACE participants and committee members.

Methods. A survey of ninety-eight PACE participants (consisting of forty-two patient group (PG) representatives and fifty-six clinicians) investigated the importance of quality of life (QoL) themes (family/carer impact, health benefits, tolerability, psychological benefit, hope, normal life, treatment choice and convenience) identified from an earlier thematic analysis of PACE statements. The findings from PG representatives and clinicians were compared, and the overall results were further compared with those from a previous survey of committee members (n = 26).

Results. Among PACE participants who responded (twenty-six PG representatives and fourteen clinicians), 100 percent rated 'health benefits' and 'ability to take part in normal life' as important / very important. 'Convenience of administration' and 'treatment choice' received the lowest rating with fifteen percent and nineteen percent respectively of PG representatives versus seven percent of clinicians rating each as very important. 'Hope for the future' received the most diverse response with fifty-eight percent of PG representatives and fourteen of clinicians rating this as very important.

In general, PACE participants rated importance of QoL themes higher than committee members (n = 21) but the rank order was similar. Differences between the proportion of PACE participants and committee members who rated themes important/very important was greatest for 'treatment choice' (sixty-seven percent versus twenty percent respectively) and 'hope for the future' (eighty-two percent versus fifty-three percent).

Conclusions. The findings demonstrate some alignment between PACE participants' and committee members' responses, supporting the value of the PACE output in decision-making. Areas for further research are highlighted.

https://doi.org/10.1017/S0266462321000829 Published online by Cambridge University Press