they have different clinical profiles impacting both efficacy and durability outcomes. Using an indirect comparison approach, this study assessed the clinical effects of combination therapy (CT) using alpha-blockers and 5-alpha reductase inhibitors, two emerging MISTs (prostatic urethral lift [PUL] and water vapor thermal therapy [WVTT]), and two invasive surgical procedures (photoselective vaporization of the prostate [PVP] and transurethral resection of the prostate [TURP]).

Methods. A systematic search of Medline, Embase, Cochrane Library, and relevant health technology assessment (HTA) databases was conducted to identify randomized and non-randomized clinical trials of the five treatments published prior to December 2020. Trials were included if they reported changes in International Prostate Symptom Score (IPSS) and retreatment rates, without any country or language restrictions. A random-effects network meta-analysis (NMA) with an aggregate regression model was performed to account for the baseline BPH severity and characteristic differences among men from the different trials.

Results. A total of 237 of 3,104 retrieved abstracts were included for full-text review. Of these, 16 randomized and four non-randomized clinical trials were included in the NMA. The random-effects NMA showed among medical and minimally invasive therapies, WVTT had the greatest one-year IPSS improvement (-Δ11.7), followed by PUL (-Δ10.4) and CT (-Δ10.3). The one-year IPSS improvement for TURP and PVP was comparable (-Δ14.1 vs. -Δ13.8, respectively; p-value=0.675). The one-year retreatment rates were lowest for WVTT (3.0%), followed by CT (3.6%), TURP (6.3%), PVP (7.8%), and PUL (8.0%).

Conclusions. WVTT provided greater clinical and durability benefits compared to other less invasive treatment options for men with BPH. Given NMA is increasingly used in HTA processes, this study provided systematically synthesized evidence that could facilitate decision-makers in determining new technology coverage decisions globally.

OP20 Is The Quality Of Evidence In Health Technology Assessment Deteriorating Over Time?: A Case Study On Cancer Drugs In Australia

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Introduction. Recently, there have been concerns regarding a trend toward poorer quality evidence being accepted by regulatory institutions and the consequent impact on health technology assessment (HTA) decision-making. This study aimed to determine whether there has been a change in the quality of evidence provided on cancer drugs proposed for listing on the Pharmaceutical Benefits Scheme, using data solely extracted from public summary documents (PSD) published by the Australian government.

Methods. PSDs published from July 2005–2020 were reviewed. Metrics associated with quality of evidence were extracted, including the directness of comparison, study design, sample size, and risk of bias (RoB). Additional data were extracted to provide greater context to any observed trends in quality of evidence. Analyses were performed across different time periods. Associations between the quality of evidence and time periods were explored using logistic regression analysis.

Results. In total, 214 PSDs were included in the analysis. Only 13 percent of submissions provided a single arm study or observational study as the key evidence; however, 37 percent of submissions did not contain a direct ('head-to-head') comparison relevant to Pharmaceutical Benefits Advisory Committee (PBAC) decision-making. Among all submissions containing direct evidence, about half had findings of a moderate/high/unclear RoB. Among all submissions containing indirect comparisons, over half had transitivity issues. In submissions containing direct comparisons, there was an increase in the RoB over time even after adjusting for trial data maturity and the rareness of the drug indication (odds ratio [OR] 1.30; 95% confidence interval [CI] 0.99, 1.70). There were no clear time trends observed in sample size, directness, study design, or transitivity issues during any of the observed time periods.

Conclusions. In the last 7 years, a high proportion of cancer drug submissions presented findings with a high RoB and transitivity issues. As the evidence dossiers provided to the PBAC are often congruent with submissions made elsewhere, this poor evidence quality is of concern and can only lead to higher levels of decision-maker uncertainty.

OP21 A Critical Review Of Existing Health Inequality And Health Inequity Frameworks In Evidence Synthesis

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Introduction. In recent years, there has been a growing recognition that health equity and health inequalities should be a consideration in all aspects of research. Since the Commission on Social Determinants of Health by the World Health Organization was established in 2005, there has been a growing interest in tackling systemic differences in health outcomes, including expanding the scope to health research including evidence synthesis and health technology assessments (HTA). This analysis aims to identify health inequality and health inequity frameworks that exist to help structure and plan research methods in evidence synthesis.

Methods. A critical analysis of the existing frameworks used in evidence synthesis to address health inequality and/or inequity was undertaken. Comprehensive, systematic searching of seven social science electronic databases and grey literature was undertaken based on the Behavior/phenomenon of interest, Health context and Model/Theory (BeHEMoTh) model, from 1990 to May 2022 to identify all relevant studies. A narrative synthesis approach was used to critically appraise the existing frameworks.

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