OP179 Quantitative Evidence Synthesis Methods For Assessing The Effectiveness Of Treatment Sequences For Clinical And Economic Decision-Making: Methodology Review

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Introduction. The sequential use of alternative treatments for chronic conditions represents a complex, dynamic intervention pathway; previous treatment and patient characteristics affect both choice and effectiveness of subsequent treatments. Evidence synthesis methods that produce the least biased estimates of treatment-sequencing effects are required to inform reliable clinical and policy decision-making. A comprehensive review was conducted to establish what existing methods are available, outline the assumptions they make, and identify their shortcomings.

Methods. The review encompassed both meta-analytic techniques and decision-analytic modelling, any disease condition, and any type of treatment sequence, but not diagnostic tests, screening, or treatment monitoring. It focused on the estimation of clinical effectiveness and did not consider the impact of treatment sequencing on the estimation of costs or utility values.

Results. The review included ninety-one studies. Treatment-sequencing is usually dealt with at the decision-modelling stage and is rarely addressed using evidence synthesis methodology for clinical effectiveness. Most meta-analyses are of discrete treatments, sometimes stratified by line of therapy. Prospective sequencing trials are scarce. In their absence, there is no single best way to evaluate treatment sequences, rather there is a range of approaches, each of which has advantages and disadvantages and is influenced by the evidence available and the decision problem. Due to the scarcity of data on sequential treatments, modelling studies generally apply simplifying assumptions to data on discrete treatments. A taxonomy for all possible assumptions was developed, providing a unique resource to aid the critique of decision-analytic models.

Conclusions. The evolution of network meta-analysis in HTA demonstrates that clinical and policy decision-making should account for the multiple treatments available for many chronic conditions. However, treatment-sequencing has yet to be accounted for within clinical evaluations. Economic modelling is often based on the simplifying assumption of treatment independence. This can lead to misrepresentation of the true level of uncertainty, potential bias in estimating the effectiveness and cost effectiveness of treatments and, eventually, the wrong decision.

OP181 Adapting Evidence To Produce A Health Technology Assessment Of Mammography Screening: An Example From The West Bank

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Introduction. Health technology assessment (HTA) can play a key role in evidence-based decision-making. However, HTA requires resources that might be lacking in low-income settings. To test the feasibility of adapting existing evidence as part of the HTA process, this project evaluated the effectiveness and economic impact of breast cancer screening programs for women over 40 years in the West Bank, where mammography screening is provided for free in governmental clinics.

Methods. We conducted a search for systematic reviews, HTAs and guidelines in electronic databases. We included the most recent global systematic review and meta-analysis that fulfilled our inclusion criteria. The European Network for Health Technology Assessment (EUnetHTA) adaptation toolkit was used to guide adaptation and undertake a budget impact analysis of the economic impact of mammography screening. We build capacity by working as a team of HTA experts and first-time HTA researchers. The results were disseminated to raise awareness for HTA.

Results. The European Commission Guidelines on Breast Cancer Screening were identified as most recent global systematic review with meta-analyses, out of 2,365 references. The adapted evidence may inform policies on screening in the West Bank. Our experience is that adaption requires extensive skills and resources, including finding, assessing, and adapting relevant evidence. The EUnetHTA toolkit is useful, but also adds to the workload. Furthermore, local stakeholder engagement is important in topic selection, to access information, and to contextualize global evidence to the local setting.

Conclusions. This study is currently ongoing, but preliminary findings show that producing an HTA by adapting existing evidence in resource-limited settings is feasible. There is a need for nuanced guidance on transferability of evidence from other settings. Future studies should investigate innovative methods to optimize the adaption process. Capacity building in adaptation is important to ensure the production of quality HTA products. Inclusion of local team members and stakeholders is important for future development of HTA in the region.

OP188 Post-Launch Evidence Generation Studies For Medical Devices In Spain: Integrating Real World Evidence Into Decision-Making

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Introduction. A national act (Order SSI/1356/2015) regulating Post-Launch Evidence Generation (PLEG) studies was set in Spain in 2015. These PLEG studies are to inform decisions about technologies already included in the Benefit Portfolio of the Spanish National Health System (SNHS) in order to confirm/exclude/modify their terms of use. Once a PLEG is

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established the selected hospitals provide the technology according to a common protocol and register outcomes until the required sample size is reached.

Methods. The PLEG studies are prospective, observational and single arm studies on safety, effectiveness and cost-effectiveness of a technology in real practice. The technology is selected because of the identification of an evidence gap, usually through a health technology assessment (HTA) report made by an agency of the Spanish Network of HTA Agencies (RedETS). The execution of a PLEG is assigned to one of the RedETS Agencies, which is responsible of delivering annual reports and a final report when the objectives are reached.

Results. The following six PLEG studies, all of them on medical devices, have been launched in Spain so far, i) Endobronchial valve for patients with persistent air leak; ii) Biodegradable esophageal stent; iii) Percutaneous mitral valve repair system by clip; iv) Left Atrial Appendage Closure Device; v) Sensor-based glucose monitoring systems for children with type 1 diabetes mellitus; vi) Left ventricular assist devices for destination therapy. Five studies will finish their data collection by the end of 2020 or during 2021.

Conclusions. A new national procedure using PLEG has been made available in Spain facilitating the use of real-world evidence to inform national decision-making on the financing of selected technologies due to uncertainties about their effectiveness, safety, cost-effectiveness and organizational impact. The studies are requiring a high amount of coordination tasks, as they are involving an average of 21 hospitals each. The usefulness and suitability of this procedure to achieve its objectives must be evaluated once their results are available.

OP196 Clinical Decision Support Systems (CDSS) For Antibiotic Management: Factors Limiting Sustainable Digital Transformation

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Introduction. Clinical decision support systems (CDSS) are being developed to support evidence-based antibiotic prescribing and reduce the risk of inappropriate or over-prescribing; however, adoption of CDSS into the health system is rarely sustained. We aimed to understand the implementation challenges at a macro (policymakers), meso (organizational) and micro-level (individual practices) to identify the drivers of CDSS non-adoption.

Methods. We have adopted a mixed-method study design which comprised of: (i) systematic review and meta-analysis to assess the impact of CDSS on appropriate antibiotic prescribing, (ii) Online survey of clinicians in Australia from hospitals and primary care to identify drivers of CDSS adoption and (iii) in-depth interviews with policymakers to evaluate policy-level challenges and opportunities to CDSS implementation.

Results. CDSS implementation can improve compliance with antibiotic prescribing guidelines, with a relative decrease in mortality, volume of antibiotic use and length of hospital stay. However, CDSS provision alone is not enough to achieve these benefits. Important predictors of clinicians' perception regarding CDSS adoption include the seniority of clinical end-users (years), use of CDSS, and the care setting. Clinicians in primary care and those with significant clinical experience are less likely to use CDSS due to a lack of trust in the system, fear of comprising professional autonomy, and patients' expectations. Lack of important policy considerations for CDSS integration into a multi-stakeholder healthcare system has limited the organizational capacity to foster change and align processes to support the innovation.

Conclusions. These results using multiple lines of evidence highlight the importance of a holistic approach when undertaking health technology management. There needs to be system-wide guidance that integrates individual, organizational and system-level factors when implementing CDSS so that effective antibiotic stewardship can be facilitated.

OP199 From Pilot Studies To System-Wide Innovation: Challenges And Opportunities For Clinical Decision Support Systems (CDSS) Implementation In Australia

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Introduction. The clinical data is increasing at a considerably higher rate than the capacity of the healthcare system and clinicians to manage this data. Digital tools such as clinical decision support systems (CDSS) provide opportunities for evidence-based patient care by intelligently filtering and presenting the information required for clinical decision making at the point of care. Despite the success of pilot projects, CDSS have had limited implementation in broader health systems. We aimed to identify challenges faced by policymakers for CDSS implementation and to provide policy recommendations.

Methods. We conducted eleven semi-structured interviews with Australian policymakers from state and national committees involved in digital health activities. The data were analyzed using reflexive thematic analysis to identify policy priorities.

Results. Our findings indicate that fragmentation of care processes and structures in the digital health ecosystem is one of the main impediments to delivering coordinated care using CDSS. Five themes for policy action were identified: (i) establishing a shared conceptual framework for user-centered design of CDSS that is aligned with stakeholders' priorities, (ii) maintaining the right balance between the customization and standardization of systems, (iii) developing mutually agreed semantic interoperability standards at the local, state and national level, allowing generation and exchange of information across the health system without changing its context and meaning, (iv) reorienting organizational structures to build capacity to foster change, and (v) developing collaborative care models to avoid conflicting interests between stakeholders.

Conclusions. Findings highlight the importance of developing system-wide guidance to establish a clear vision for CDSS implementation and alignment of organizational processes across all levels of health care. There is a need to build a shared policy

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