departments and in the primary care sector are cost effective, compared with traditional physician-led models. The overarching intent is to use these data to enable evidence-informed policy and practice changes, so that more appropriate and cost-effective care is provided to patients with back pain.

OP64 Review Of Economic Evaluations Of Next-Generation Precision Oncology

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INTRODUCTION:

Proponents of precision oncology report that genomic testing has the potential to reduce health system costs and improve patient health. Yet, testing also involves significant expenditures that challenge the sustainability of adopting technologies into routine practice. Our study explores the availability and scope of economic evaluations of precision oncology informed by next-generation sequencing (NGS).

METHODS:

We searched Medline (PubMed), Embase (Ovid), and Web of Science databases for English-language full-text peer reviewed articles published between 2000 and 2016. We focused our search on articles that estimated the benefit of precision oncology in relation to its costs. We excluded studies that did not undertake full economic evaluations or did not focus on NGS. We reviewed all included studies and summarized key methodological and empirical study characteristics.

RESULTS:

Fifty-five economic evaluations met our inclusion criteria. The first study was published in 2005 and the number of published studies increased steadily, from three studies between 2005 and 2007 to twenty-six between 2014 and 2016. Most studies evaluated multiplex panels (86 percent). Testing was frequently used to diagnose patients (24 percent) or predict prognosis (67 percent), rather than identify targeted therapies (7 percent). Methods varied considerably and cost-effectiveness differed according to test type, test strategy, and cancer type. Deterministic and probabilistic analyses were typically used to characterize uncertainty (91% percent and 75% percent).

CONCLUSIONS:

While the availability of economic evidence examining precision oncology increased over time, methods used often did not align with current guidelines. Future evaluations should undertake extensive sensitivity analysis to address all sources of uncertainty associated with rapidly changing NGS technologies. Further, additional research is needed evaluating the cost-effectiveness of more comprehensive next-generation technologies prior to implementing these on a wider scale.

OP65 Genomics: From Horizon Scanning To National Health Policy

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INTRODUCTION:

Technology advances have resulted in cheaper and quicker genomic sequencing (panels, exomes, whole genomes). Uptake into clinical practice has been rapid despite limited consideration of workforce, patient safety, consent, practice standards, guidelines and cost benefit. AUD 150M (USD 113M) has been independently allocated to genomic initiatives by Australian state and federal governments that don't reflect a national approach to genomics.

METHODS:

Modified horizon scanning (HS) methodology identified issues around genomic sequencing to be considered by governments regarding their support, or otherwise, before appropriate implementation and diffusion into local healthcare systems. A national jurisdictional advisory group was subsequently established that undertook extensive stakeholder consultation across Australia, including written submissions, over a four-month period.

RESULTS:

HS identified that genomic sequencing is diffusing rapidly through the health system and flagged issues of

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pressing concern, including: workforce requirements; education, training and literacy for the medical workforce and community; infrastructure; data; and ethical, legal and social implications (ELSI). HealthPACT recommended a national coordinated approach to policy development across jurisdictional boundaries to ensure appropriate adoption of genomics. Stakeholder consultation confirmed overwhelming support for greater national coordination of the application of genomic knowledge in healthcare. Five strategic priorities were developed to support appropriate integration of genomics into health care for Australians: person-centered approach; workforce; financing; services; and, data. Three principles underpin strategic priorities: i) application of genomic knowledge is ethically, legally and socially responsible and community trust is promoted; ii) access and equity are promoted for vulnerable populations; and, iii) application of genomic knowledge to health care is supported and informed by evidence and research.

CONCLUSIONS:

HS identified significant policy, workforce, funding and sustainability issues already facing state and territory governments that would, in time, face the federal government. The National Health Genomics Policy Framework outlines an agreed high-level national approach to policy, regulatory and investment decision-making for genomics and was approved by all Australian health Ministers in November 2017.

OP66 Tumor Profiling Tests In Early Breast Cancer: A Systematic Review

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INTRODUCTION:

Tumor profiling tests can help to identify whether women with breast cancer need chemotherapy due to their risk of relapse, and some may be able to predict benefit from chemotherapy. We focused on four genetic tests: Oncotype DX (O-DX), MammaPrint (MMP), EndoPredict and Prosigna, and one immunohistochemistry test, IHC4, for the National Institute of Health and Care Excellence as part of their Diagnostic Appraisal Programme.

METHODS:

A systematic review was undertaken, including searching of nine databases in February 2017 plus other sources including a previous review published in 2013. The review included studies assessing clinical effectiveness of the five tumor profiling tests, with or without clinicopathological factors, to guide decisions about adjuvant chemotherapy in people with ER-positive, HER-2 negative, Stage I-II cancer with 0 to 3 positive lymph nodes (LN). The PROBAST tool and Cochrane risk of bias tools were used to assess risk of bias.

RESULTS:

A total of 153 studies were included; the strength of evidence base for individual tests was varied. Results suggest all tests are prognostic for risk of relapse, though results were more varied in LN positive (+) patients than in LN negative (0) patients. Evidence was limited about whether tests can predict benefit from chemotherapy (available for MMP and O-DX only). Studies that assessed the impact of the tests on clinical decisions indicate that the net change in chemotherapy recommendations or decisions pre-/post-test ranged from an increase of one percent to a decrease of 23 percent among UK studies, and a decrease of zero percent to 64 percent across European studies.

CONCLUSIONS:

The studies included in the review suggest that all of the tests can provide prognostic information on the risk of relapse; however results were more varied in LN+ patients than in LN0 patients. There is limited and varying evidence for prediction of chemotherapy benefit.

OP68 Methods For The Economic Evaluation Of Precision Medicine

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