**Abstracts**

**080** IMPLANTABLE MINIATURE TELESCOPE – IMPLEMENTING GUIDELINES WHEN EVIDENCE IS UNCERTAIN
A Gupta, P Gang, D Patel. Kaiser Permanente, Pasadena, USA

**Background** Age-related macular degeneration (AMD) is the third leading cause of blindness in industrialised countries. The heavy burden of the disease, the expected increase in the number of cases, and a lack of effective treatment options highlight the need to examine new therapies. The implantable miniature telescope (IMT) is a potential new treatment for AMD. However, few high-quality studies are currently available to assess its effectiveness. Despite limited evidence, the US Food and Drug Administration (FDA) and Medicare granted regulatory approval, potentially increasing patient demand.

**Context** In the context of limited available evidence, but potential patient demand driven by lack of alternatives, a large, US-based integrated healthcare system rapidly developed evidence-based guidance and implementation strategies for IMT.

**Description of Best Practice** A systematic review was conducted to assess IMT effectiveness. A centralised, collaborative panel of experts was convened based upon clinical expertise, interest in providing IMT surgery, and potential operational volume. Evidence-based recommendations informed rapid development of an implementation strategy over six months. The strategy involved 1) centralised patient review and selection; 2) consent forms that describe benefit vs. harms; and 3) surgical training standards. Rapid development and distribution of the implementation strategy ensured that IMT would be provided in a timely and appropriate clinical context. The centralised process facilitated development of a patient database to track outcomes and inform future research.

**Lessons for Guideline Developers, Adaptors, Implementers, and/or Users** Rapid, collaborative, and evidence-based development of clinical guidance and implementation strategies is an effective model for spreading best practices in an environment of uncertain or low-quality evidence.

**081** THE ENDOCRINE SOCIETY GUIDELINES: IMPLICATIONS OF STRONG RECOMMENDATIONS WITH LOW QUALITY EVIDENCE

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**Background** In 2005, the Endocrine Society (TES) adopted the GRADE system of developing clinical practice guidelines. This system facilitates the formulation of evidence-based recommendations by explicitly describing the confidence in estimates (quality of evidence) and strength of each recommendation.

**Objectives** To describe and characterise the relationship between confidence in estimates and strength of recommendation in TES guidelines.

**Methods** We included all published TES guidelines between 2005 (when TES started using GRADE) and 2011. Independently and in duplicate, reviewers extracted, for each recommendation: disease area, confidence in estimates and design of the studies considered, and strength of recommendation. In strong recommendations with low quality of evidence, we developed and applied a taxonomy of appropriate recommendations and identified those we considered inappropriate.

**Results** Most of the 357 recommendations issued were supported by evidence warranting low or very low confidence in estimates (256, 72%). Evidence cited in support of these recommendations came exclusively from observational studies in 233 recommendations (65%). Most recommendations were strong (206, 58%); of these, 121 (59%) were supported by evidence warranting low or very low confidence in estimates. In 101/121 (83%), we identified a compelling rationale for the recommendations; in 20 (17%), we did not.

**Conclusions** Most TES strong recommendation based on low quality evidence are justified and appropriate, but a substantial proportion are not.

**Implications for Guideline Developers** Guideline developers should carefully justify any strong recommendations based on low confidence in effect estimates.

**082** EFFECT OF WORDING AND PRESENTATION OF ELECTRONIC ALERTS ON BEHAVIOR OF PROVIDERS CARING FOR OUT-OF-CONTROL DIABETICS

E Stone, H Hsu. Kaiser Permanente, Pasadena, USA

**Background** Guideline implementation through electronic point-of-care alerting has been shown to be effective. The best displays of these alerts have not been well studied.

**Objectives** To assess the effect of wording and presentation of electronic alerts on insulin ordering by providers caring for out-of-control diabetics on 2 or more oral hypoglycemic agents.

**Methods** An electronic message to the provider caring for an out-of-control diabetic was displayed. Prior to randomisation, a generic message was presented to all providers. Health centres were then randomised to 1 of 4 specific messages recommending insulin. Messages differed by wording (active/passive voice) and presentation (black text/red and black text). A 2-arm RCT was then performed where health centres were randomised to a complete absence of any alert or to one of the specific messages.

**Results** The generic alert triggered 56,878 times. Providers prescribed insulin 5.11 % of the time. During the 4-arm RCT, the alerts triggered 11,744, 11,826, 11,742, and 11,554 times, and insulin was prescribed 5.17%, 5.01%, 5.11% and 5.20% respectively. There were no statistically significant differences amongst the 4 rates (p=0.67) nor was there a statistically significant difference between insulin ordering with the generic message compared to insulin ordering with the more specific messages (p=0.62). For the 2-arm RCT, insulin ordering remained at 5% for the specific messages and was 0% where there was no alert (P<0.05).

**Lessons for Guideline Developers, Adaptors, Implementers, and/or Users** Extra effort to craft wording and develop eye-catching electronic alerts may not be worthwhile. Guideline adherence was improved by an electronic alert.

**083** DEVELOPING AND IMPLEMENTING A COMPUTERISED DECISION SUPPORT SYSTEM FOR GENERAL PRACTICE IN THE NETHERLANDS

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**Background** Decision support systems (DSS) are tools designed to present health professionals with relevant and current information to support clinical decision making. However, few high-quality studies are currently available to assess its effectiveness. Despite limited evidence, the US Food and Drug Administration (FDA) and Medicare granted regulatory approval, potentially increasing patient demand.

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**Lessons for Guideline Developers, Adaptors, Implementers, and/or Users** Rapid, collaborative, and evidence-based development of clinical guidance and implementation strategies is an effective model for spreading best practices in an environment of uncertain or low-quality evidence.
Background The Dutch College of General Practitioners (NHG) has produced almost 100 guidelines. Guideline adherence is on average 70–75%, but varies between general practitioners and between guideline recommendations. A computerised decision support system (CDSS) could improve guideline adherence.

Objectives To describe the development and implementation of a CDSS (NHGDoc) for general practice in the Netherlands.

Methods NHGDoc is a collaborative effort between the NHG and ExpertDoc, the company that developed the CDSS. Relevant recommendations of eight NHG guidelines were translated into algorithms, generating specific alerts. All alerts were reviewed and authorised by guideline developers of the NHG. NHGDoc was integrated in two out of seven electronic health record systems used in Dutch general practice. Since 2008, users were regularly interviewed regarding their experiences with NHGDoc.

Results Integration of eight guidelines in NHGDoc generated alerts in approximately 30% of all patient records. Alert frequency varied in accordance with disease prevalence. Currently, 1100 general practices (appr. 25% of Dutch general practices) are using NHGDoc. Users highly appreciated the content and lay out of the alerts, but preferred more control regarding the timing and frequency of the alerts.

Discussion NHGDoc is well received and appreciated in general practice. To enhance the success of NHGDoc the user-friendliness of the system could be further improved. Future research should provide evidence on the effectiveness of NHGDoc in terms of improving quality of care.

Implications for Guideline Developers To improve guideline adherence, CDSSs should have user-friendly designs, including options to personalise the decision support to meet the needs of individual patients.

Objectives To implement and test our novel approach to decision support where relevant patient specific information is shown alongside evidence based recommendations in EMRs.

Methods We used a web guideline published through the MAGIC (Making Grade the Irresistible Choice) application, which allowed our EMR partner to make use of its structured content, ontology-coded clinical questions and recommendation-specific EMR elements.

Results The EMR system was able to interact with the guideline, suggest relevant recommendations displayed along with relevant patient specific information (lab tests, measurements, medications), and offer these to facilitate direct ordering. We will show real examples and live products.

Discussion Results suggest we can offer a complementary approach to traditional algorithm-based systems that is compatible with a large number of EMRs.

Implications for Guideline Developers/Users PLUGGED-IN provides a model for direct use of guidelines as decision support in EMRs.