Technologies in Health (CADTH) was selected a priori as data source for this review of systematic reviews. The review was limited to high quality SRs of interventions targeting clinicians.
Results A total of 12 SRs met study inclusion criteria. These SRs suggest that implementation strategies, such as audit and feedback, academic detailing, and educational meetings, are generally effective in improving providers' behaviours, with small to moderate effect sizes.
Discussion This review of SRs provides support for the overall efficacy of guideline implementation strategies, while highlighting the need for further comparative and cost effectiveness research to address gaps in the knowledge identified (e.g., limited information on head-to-head comparisons between strategies, clinical context, and cost of interventions).
Implications for Guideline Developers/Users Guideline developers should include recommendations for guideline implementation in their future guidelines. Making specific recommendations on choosing one implementation strategy over the others should be avoided until further head-to-head comparisons are available.

P217 THE EFFECT OF PRINT OR ONLINE EDUCATIONAL MATERIALS FOR PRIMARY CARE PHYSICIANS: A SYSTEMATIC REVIEW

[1,2]A Grudniewicz, [3]R Rodseth, [1]R Kealy, [1]D Rudoler. *[1]University of Toronto, Toronto, Canada; [2]Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada; [3]University of KwaZulu Natal, Durban, South Africa*

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Background Print and online materials such as guideline summaries are commonly used to distribute evidence to primary care physicians; they are easy to implement and scale across many primary clinics.
Objectives We sought to determine: 1) if providing primary care physicians with print and online educational materials has an effect on physician behaviour or on patient outcomes, 2) how these materials were developed, and 3) whether design attributes impact outcomes.
Methods We systematically identified studies that reported a print or online educational intervention for primary care physicians. Studies were identified by searching four electronic databases, scanning reference lists, and contacting experts. A subanalysis was conducted to collect data on how these materials were developed and on their use of design principles.
Results Thirty studies met eligibility criteria after full-text screening. Studies targeted physician advice-giving behaviour, diagnostic procedures, prescribing behaviour, change in knowledge, and clinical patient outcomes. Results suggest that print and online materials targeted at primary care physicians have little to no effect on outcomes.
Discussion Print and online educational materials provided to primary care physicians have little effect on physician or patient outcomes. This is concerning as they are a common method of disseminating evidence. Most studies do not describe how interventional materials were developed or whether design principles were applied.
Implications for Guideline Developers/Users Design principles should be considered when developing evidence-based materials and the development processes should be described in order to determine if better designs influence uptake and use of evidence.

P219 ENGAGING CONSUMERS IN THE GUIDELINE DEVELOPMENT PROCESS – THE US PERSPECTIVE

P Robertson, H Hussey, S Jones. *American Academy of Otolaryngology-Head and Neck Surgery Foundation, Alexandria, USA*

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Background In the United States, there have been increasing calls for guideline developers to engage consumers throughout the guideline development process. The Guidelines International Network (G-I-N) and the Institute of Medicine (IOM) have both released guideline development best practices encouraging consumer involvement; ranging from consumer input during the formulation of clinical questions, to serving as a guideline panel member and participating in the review process.
Context Our organisation has been developing evidence based clinical practice guidelines for nearly a decade and has incorporated consumers in the development process for over five years. By including consumers, our guidelines now feature more patient-centred recommendations; establishing a more balanced discussion of patient preferences and improving how we assess benefits and harms.
Description of Best Practice To more readily identify consumers for guideline development, our organisation has built a collaborative relationship with a consumer advocacy alliance. Through this relationship, we have been able to support two consumer advocates as full members on each guideline panel. To assist their participation, we provide education about our guideline development process, and outline the expectations of their involvement throughout the process.
Lessons for Guideline Developers Our experience with consumer engagement can serve as an example for other US guideline developers. Consumers can bring invaluable insight and perspective throughout guideline development and have substantially improved our guidelines. We believe consumer participation will become increasingly important in the coming years, particularly as guideline developers move towards a standardised approach to development.

P222 EVOLUTION OF EVIDENCE GRADING SYSTEMS IN THE AMERICAN ACADEMY OF OPHTHALMOLOGY'S PREFERRED PRACTICE PATTERNS

N Emptage, F Lum. *American Academy of Ophthalmology, San Francisco, USA*

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Background Clinical practice guidelines are an important component of efforts to improve quality of care and rationalise the introduction of new medical technologies. As evidence-based medicine and comparative effectiveness research become more prominent, the rigour and transparency of guideline development is becoming increasingly important.
Context Since 1988, the American Academy of Ophthalmology has published ophthalmic practice guidelines known as Preferred Practice Patterns (PPPs). Over time, the Academy has introduced increasingly rigorous processes for grading the evidence underpinning the PPPs.
Description of Best Practice Prior to 2000, the PPPs were effectively consensus-based, with no formal processes for identifying or synthesising evidence, and no system for grading evidence quality. In 2000, a three-level system was introduced to denote the quality of the evidence supporting PPP recommendations,

with Level I denoting strongly evidence-based statements and Level III denoting statements unsupported by evidence. In 2001, the level definitions were revised to denote the quality of specific study designs, and explicit guidance for synthesising bodies of evidence was developed. A third revision in 2006 tightened the criteria for Levels I and II, and created a Level IV to differentiate poor-quality studies from expert opinion. In 2011, the levels were revamped to be consistent with SIGN and GRADE methods.

Lessons The Academy has worked for years to make its evidence grading systems more rigorous. This has included using a level-based system to clearly link PPP recommendations to evidence quality, revising the level definitions for greater clarity, and providing explicit direction on evidence synthesis.

P224 ADAPTING GUIDELINES WITH CONFLICTING RECOMMENDATIONS: THE CASE OF MICROSCOPIC ASYMPTOMATIC MICROHEMATURIA

J Whittaker, R Loo. *Southern California Permanente Medical Group, Pasadena, USA*

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Background Existing clinical practice guidelines (CPGs) conflict on the best approach to the work-up of patients with asymptomatic microscopic hematuria who are at low risk of urinary tract cancer. Consequently, while adapting existing CPGs to a local context can be an attractive alternative to *de novo* development, when there are conflicting guidelines, disagreement with recommendations, or missing critical outcomes, potential time and resource gains are often minimised due to the need for additional evidence assessment and stakeholder consensus building activities.

Context To reconcile conflicting recommendations and address gaps in evaluation of critical outcomes, a Guideline Development Team (GDT) in a regional health care organisation used existing CPGs and systematic reviews, supplemented by additional evidence reviews, to develop recommendations for asymptomatic microscopic hematuria.

Description of Best Practice Based on review of evidence synthesised in external guidelines, supplemental *de novo* evidence reviews on critical outcomes, and risk assessment analysis of patient data, the GDT reached consensus on recommendations that differed from external guidelines, concluding that asymptomatic hematuria patients without risk factors were at sufficiently low-risk for urinary tract cancer to safely eliminate multiphase CT urograms from most urologic evaluations. Guidelines to reduce unnecessary CTs and radiation exposure in low-risk patients were developed, and knowledge transfer interventions aimed at the practitioner and healthcare system levels were implemented.

Lessons for Guideline Developers When adapting external guidelines with conflicting recommendations and gaps in critical outcomes, additional evidence searches, data analysis, and consensus building can negate anticipated gains in time and resources expected from guideline adaptation.

P225 THE DEVELOPMENT OF EVIDENCE BASED GUIDELINES FOR OPIOID PAIN TREATMENT

[1]A Effiong, [1]K Hegmann, [1]M Thiese, [2]C Wolfkiel, [2]J Ording, [3]J Harris, [1]K Schwei. *[1]Rocky Mountain Center for Occupational and Environmental Health, Salt Lake City, USA; [2]ACOEM, Elk Grove Village, USA; [3]The Permante Medical Group, San Rafael, United States*

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Background Opioid analgesic-related deaths more than tripled in the US from 1999 through 2006. According to the CDC, 27,000 unintentional drug overdose deaths occurred in the United States in 2007; the most potent epidemic in the past 100 years.

Objectives To develop opioid guidelines to improve opioid pain treatment and reduce fatalities.

Methods A systematic literature search (including Google Scholar and Medline) was conducted. Randomised controlled trials (RCTs) were categorised into acute, subacute (1–3mo), chronic, and mixed chronicity. The quality of RCTs was determined using previously developed guideline scoring methods; low quality (3.5 or less), moderate quality (4.0–7.5), and high quality (8.0–11.0).

Results A total of 153 RCTs were identified; 11 acute, 2 subacute, 137 chronic, and 3 of mixed chronicity. Of the 11 acute pain RCTs, 1 was low quality, 6 moderate quality, and 4 high quality. Both subacute pain RCTs were moderate quality. Of the 137 chronic pain RCTs, 28 were low quality, 95 moderate quality, and 14 high quality. The RCTs with mixed chronicities were of moderate quality. All trials were under 6 months, with most under 4-weeks duration, precluding statements on long-term safety.

Discussion These opioid guidelines provide more informed recommendations for prescribing opioids for pain treatment with details to be presented.

Implications These guidelines may have considerable implications among prescribing health professionals.

P226 A MULTIDISCIPLINARY APPROACH TO CREATING BEHAVIORAL HEALTH GUIDELINES: CHALLENGES OF ADHERING TO IOM STANDARDS

R Halfond, L Bufka, H Kurtzman, D Galper, S Beattie. *American Psychological Association, Washington, D.C., United States*

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Background In 2010 our organisation began creating evidence-based clinical practice guidelines for behavioural health, focusing initially on depression, PTSD, and obesity, following emerging IOM standards.

Context Selected challenges in five areas: 1. Terminology. For many years, our organisation used guideline terminology that was inconsistent with the field. 2. Representation. Given the diverse types of professionals in behavioural health and the breadth/depth of each topic, attaining sufficiently diverse panel membership has been challenging. 3. Stakeholders. Obtaining the patient perspective has been challenging, particularly given the stigma and privacy concerns often associated with mental health. 4. Systematic Reviews. The high cost of developing *de novo* systematic reviews, especially for large scope topic areas, is limiting. 5. Education. Professionals have varying knowledge and lexicons for the process, requiring education, particularly surrounding non-financial conflicts of interest.

Description of Best Practice •Terminology- Implemented organisation-wide systemic change in lexicon via change in organisation policy and routine dissemination. •Representation- Used multi-step consensus nomination process to assemble