2011
Annual Meeting
Oral & Poster
Abstract
Sessions
PRE-MEETING DINNER SYMPOSIUM

Next Session »

5:30 PM - 9:00 PM: Sat. Oct 22, 2011
Regency CD (Hyatt Regency Chicago)
Session Chairs:

• Scott B. Cantor, PhD

Abstracts:

THE DISCOVERY, FINANCING AND EVALUATION OF GENOMIC MEDICINE: IMPLICATIONS FOR THE COMPARATIVE EFFECTIVENESS OF CANCER CARE

5:30 PM - 5:45 PM: Sat. Oct 22, 2011
Regency CD (Hyatt Regency Chicago)
Part of Session: PRE-MEETING DINNER SYMPOSIUM

J. Jack Lee, PhD, MD, DDS, University of Texas M. D. Anderson Cancer Center, Houston, TX, Tomas J. Philipson, PhD, The Harris School, The University of Chicago, Chicago, IL and Mark J. Ratain, MD, The University of Chicago, Chicago, IL

This symposium features leading experts in genomic medicine applied to cancer drawn from different disciplines: clinical discovery, trial design, economics, safety and efficacy assessments and comparative effectiveness research. Through formal comments and moderated group discussion, we aim to provide the SMDM audience an introduction to the emerging role each of these disciplines play in the design, implementation and use by decision makers of future comparative effectiveness research on genomic medicines. We will explore the importance of scientific evidence complemented by patient, family and provider perspectives on the practical implications of genomic medicine.

Speakers:

J. Jack Lee, PhD, will discuss adaptive clinical trial design in "personalized" cancer trials.
Tomas J. Philipson, PhD, will discuss the incentives for research and development of personalized medicines from a private pharmaceutical firm's perspective, FDA regulatory assessments, reimbursement and coverage decision making for personalized medicines.

Mark J. Ratain, MD, will discuss drug discovery, establishing the clinical value of personalized medicine, adoption of new tests and medicines from a physician's perspective.

Monday, October 24, 2011

SMDM KEYNOTE PRESENTATION

BEHAVIORAL ECONOMICS AND CONFLICTS OF INTEREST

George Loewenstein, PhD, Carnegie Mellon University, Pittsburgh, PA

A conflict of interest is a clash between an individual's professional responsibilities and their personal, typically financial, interests. Traditional economics has not shed much light on conflicts of interest, perhaps in part because it has not recognized the importance of professionalism as a motive in human behavior. In this talk I will present results from a variety of studies that examine the behavioral economics of conflict of interest. Focusing mainly on conflicts of interest in medicine, some of the research shows how people who care deeply about behaving in a professional fashion can be corrupted by economic incentives. Other research shows how disclosing conflicts of interest, far from helping the recipient of information, can backfire, helping the advice-giver and hurting the advice recipient.
10:30 AM - 12:00 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)

Session Chairs:

• Daniel Polsky, PhD
• Mark S. Roberts, MD, MPP

Session Summary:

10:30 AM - 10:48 AM

**TR1-1.** THE USE OF PERSUASION IN PRIMARY CARE VISITS AND ITS EFFECT ON ADHERENCE TO PHYSICIAN-RECOMMENDED COLORECTAL CANCER SCREENING

10:48 AM - 11:06 AM

**TR1-2.** FACTORS INFLUENCING PHYSICIANS' THERAPEUTIC DECISION WHEN PRESCRIBING CHEMOTHERAPY: A DISCRETE CHOICE EXPERIMENT

11:06 AM - 11:24 AM

**TR1-3.** ANXIETY AS AN IMPETUS FOR ACTION: ON THE RELATIVE INFLUENCE OF BREAST CANCER RISK AND BREAST CANCER ANXIETY ON CHEMOPREVENTION DECISIONS

11:24 AM - 11:42 AM

**TR1-4.** COMMITMENT TO EXERCISE: NUDGED TO EXERCISE? OR TO REVEAL YOUR TRUE COLORS?

11:42 AM - 12:00 PM

**TR1-5.** MODELING MEDICATION ADHERENCE BEHAVIOR IN COST-EFFECTIVENESS ANALYSIS: THE JUPITER EXAMPLE
TR1-1. THE USE OF PERSUASION IN PRIMARY CARE VISITS AND ITS EFFECT ON ADHERENCE TO PHYSICIAN-RECOMMENDED COLORECTAL CANCER SCREENING

Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 1 - DECISION PSYCHOLOGY AND QUANTITATIVE METHODS

Tracy Wunderlich, MA\textsuperscript{1}, Greg Cooper, MD\textsuperscript{2}, George Divine, PhD\textsuperscript{1}, Susan A. Flocke, PhD\textsuperscript{2}, Nancy Oja-Tebbe, BS\textsuperscript{1}, Kurt Stange, MD\textsuperscript{2}, Laura A. Siminoff\textsuperscript{3} and Jennifer Elston Lafata, PhD\textsuperscript{3}, (1)Henry Ford Health System, Detroit, MI, (2)Case Western Reserve University, Cleveland, OH, (3)Virginia Commonwealth University, Richmond, VA

Purpose: Many approaches used by physicians during the medical encounter have the potential to affect patient adherence to recommendations for preventive health services. Persuasion is one approach defined as a principal method of inducing compliance (Chayes et al. 1995). However, more recent findings suggest that the use of persuasion may be detrimental (Barton et al. 2009). We evaluate the frequency with which physicians use persuasion when recommending colorectal cancer (CRC) screening, patients’ perceptions of physician use of persuasion, and how each impacts adherence to physician-recommended CRC screening.

Method: Direct observation of periodic health exams (N=415) in 2007-2009 among primary care patients aged 50-80 due for CRC screening. Qualitative content analyses were used to code office visit audio-recordings for physician use of persuasion (Siminoff et al. 2011). A post-visit survey collected patient perceptions of the use of persuasion by their physician (Burgoon et al. 1984). Post-visit CRC screening use was compiled via claims data. Generalized estimating equations were used to evaluate the association of coded and perceived persuasion with each other as well as with CRC screening.

Result: Content analyses revealed that persuasion occurred in 73% of the visits. Among visits with observer-coded persuasion, most frequently used was argument (45%), followed by argument and refutation combined (21%). Patient perceptions of physician persuasion were significantly (p<0.05) associated with coded physician use of persuasion. Regardless of whether persuasion was observer-coded or patient-reported, neither was associated with subsequent CRC screening use.

Conclusion: While persuasion is frequently used when physicians recommend CRC screening and patients acknowledge when their physician attempts to persuade them, our findings indicate that persuasion is not associated with screening use. Further research is needed to better understand patient perceptions of physician persuasion and better ways to communicate recommendations for potentially life-saving
Purpose: Despite guidelines on cancer management, the increasing availability of targeted therapies has deeply challenged classical patterns of cancer treatment. Our objective was to analyze the relative influence of efficacy, tolerability, adherence and route of chemotherapy administration on medical decision-making.

Method: A Discrete Choice Experiment was performed among 203 French physicians involved in cancer treatment (i.e. oncologists, haematologists and physicians qualified in oncology). In a questionnaire of six scenarios, respondents were asked to choose between two treatments which differed with respect to four attributes: efficacy, tolerability, adherence and route of administration. Three of those attributes (efficacy, tolerability and adherence) had two modalities (good vs. moderate) and the later (route of administration) had three modalities (intravenous, oral and oral with a patient support program). To analyze the effect of the therapeutic goal on physicians’ preferences, the six scenarios were first presented for curative setting then for palliative setting. The attributes presented in the questionnaire were drawn from a literature review submitted to expert opinion. The effects of each attribute on physicians’ preferences were analyzed using conditional logistic regression models.

Result: The efficacy attribute was the predominant criteria in choosing a chemotherapy treatment either in curative setting (moderate vs. good: β=-2.1145, p <0.0001) or in palliative setting (moderate vs. good: β=-1.0628, p <0.0001). The route of administration had a positive effect in palliative setting, for which physicians preferred the oral route (β=0.6125, p<.0.003) particularly in the haematologists group. Removing the efficacy attribute of the model, we found that tolerability (moderate vs. good: β=-1.2277, p<0.0001) and adherence had also significant effects on decision (moderate vs. good: β=-1.2228, p<0.0001) but only for curative treatment, and that the oral route with a patient support program remained decisive in palliative setting (β=0.431, p<0.0001).
Conclusion: Our results highlights a consensus on the priority of the efficacy attribute reflecting a good compliance of physicians to guidelines. On condition of equivalent efficacy between two treatments, the oral route of administration was the only criteria considered in palliative setting. This is consistent with the priority to maintain patient’s quality of life by staying at home at the advanced-stage of disease. Financial disclosure: Funding for the study was provided by GlaxoSmithKline and had no influence on the study design, execution and publication of results.

TR1-3. ANXIETY AS AN IMPETUS FOR ACTION: ON THE RELATIVE INFLUENCE OF BREAST CANCER RISK AND BREAST CANCER ANXIETY ON CHEMOPREVENTION DECISIONS

Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 1 - DECISION PSYCHOLOGY AND QUANTITATIVE METHODS

Laura Scherer, PhD¹, Amanda J. Dillard, PhD², Peter A. Ubel, MD³, Dylan Smith, PhD⁴, Sarah M. Greene, MPH⁵, Jennifer B. McClure, PhD⁵, Sharon M. Hensley Alford, PhD⁶ and Angela Fagerlin, PhD⁷, (1)VA HSR&D and University of Michigan, Ann Arbor, MI, (2)Grand Valley State University, Allendale, MI, (3)Duke University, Durham, NC, (4)Stony Brook University, Stony Brook, NY, (5)Group Health Research Institute, Seattle, WA, (6)Henry Ford Health System, Detroit, MI, (7)Internal Medicine, Ann Arbor, MI

Purpose: Women who are at high risk for breast cancer have the option of taking drugs that can reduce their risk (e.g. Tamoxifen). One question is what factors determine women’s interest in chemoprevention. All else equal, women who have higher breast cancer risk should show more interest in chemoprevention. However, women’s anxiety about breast cancer may also play a significant role in this decision, above and beyond actual or perceived risk.

Method: 623 women who were at above average risk for breast cancer (Gail score > 1.66) were recruited to participate in a test of a decision aid (DA) for Tamoxifen. All women read a decision aid, which provided them with their personalized breast cancer risk (i.e. Gail score), and also provided tailored statistics about the risks and benefits of chemoprevention. Women were asked to report their perceived risk level, as well as their anxiety about developing breast cancer. Finally, women were asked about their interest in chemoprevention.

Result: Actual risk (Gail score) did not predict interest in chemoprevention (p > .05). However, both women’s perception of risk and anxiety about breast cancer significantly predicted interest in chemoprevention. Regression analyses revealed that anxiety was a relatively strong predictor of interest, even when controlling for both actual and perceived risk (b = .31, p < .01). By contrast, perceived risk was a significant yet much smaller predictor of interest, when controlling for actual risk and anxiety (b = .13, p < .01).
Conclusion: In the context of chemoprevention, actual risk does not predict interest in chemoprevention, and perceived risk only weakly predicts interest. By far the strongest predictor of interest in chemoprevention was anxiety about breast cancer: Women with more anxiety were more likely to be interested in chemoprevention, regardless of their actual or perceived risk. These data reveal that anxiety can play an important role in decision-making about chemoprevention, and can potentially bias patients. It could be helpful for DAs to provide information that decreases anxiety in low-risk individuals, so that they do not undergo medical interventions unnecessarily. On the other hand, it may be necessary to modestly raise anxiety in high-risk individuals, so that they are moved to act.

TR1-4. COMMITMENT TO EXERCISE: NUDGED TO EXERCISE? OR TO REVEAL YOUR TRUE COLORS?
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 1 - DECISION PSYCHOLOGY AND QUANTITATIVE METHODS

Jeremy D. Goldhaber-Fiebert, PhD, Stanford University, Stanford, CA and Alan M. Garber, MD, PhD, Veterans Affairs Palo Alto Health Care System and Stanford University, Stanford, CA

Purpose: Regular exercise offers an important solution to the growing burden of obesity-related chronic disease. We evaluated the use of commitment contracts and nudges to promote habitual exercise, focusing on the duration of the contracts and the heterogeneity of individual responses to these behavioral economic devices.

Methods: A randomized controlled trial examined the use of a web-based tool for creating exercise commitment contracts for 3,179 adults (aged 18-77) between September, 2010 and April, 2011. Individuals were randomized to be shown different default contract durations (8 weeks, 12 weeks, or 20 weeks) which they could easily change if they wished. After also choosing the number of exercise sessions per week (frequency) and financial penalty for failing to complete each week, each individual who ultimately signed a contract was followed for the duration of the contract, with weekly reports of their success in meeting exercise goals. For this analysis, follow-up through 13 weeks was available for 1,268 individuals representing 12,574 person-weeks. We analyzed the data using nonlinear multivariable regressions based on a theoretical model of active choice in the context of nudges.

Results: Longer duration nudges increased the mean duration of contracts chosen (13.5 weeks, 14.7 weeks, 18.6 weeks) without altering the likelihood of signing a contract (~70% for all arms), chosen exercise frequency (3.98, 3.93, 3.94 sessions per week), or chosen financial incentives ($6.90, $6.09, $6.81 per week). Based on our active choice model, more than 40% of users were highly susceptible to contract duration nudges, with the greatest effect for individuals interested in contract durations near the nudged defaults. For individuals signing contracts, those nudged to longer contract durations completed statistically more exercise, though this was
largely attributable to longer follow-up as success rates did not vary across nudges. Approximately 40% did not complete any exercise sessions (early drop-outs). Early drop-outs were more likely to have accepted the exact nudged duration presented to them.

**Conclusions:** Individuals can be “nudged” to select contracts with more total exercise. Random use of nudges also causes individuals to reveal two related aspects of their true colors: 1) their activity/passivity of exercise choice; and 2) their likelihood of failing to live up to their exercise commitments. Recognition of such heterogeneity can guide the design of more efficient exercise interventions.

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**TR1-5. MODELING MEDICATION ADHERENCE BEHAVIOR IN COST-EFFECTIVENESS ANALYSIS: THE JUPITER EXAMPLE**

11:42 AM - 12:00 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: **CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 1 - DECISION PSYCHOLOGY AND QUANTITATIVE METHODS**

**Julia F. Slejko, BA¹, Patrick W. Sullivan, PhD², Kavita V. Nair, PhD¹, P. Michael Ho, MD, PhD³, Heather D. Anderson, PhD¹ and Jonathan D. Campbell, PhD¹**

¹University of Colorado School of Pharmacy, Aurora, CO, ²Regis University, Denver, CO, ³University of Colorado and US Department of Veterans Affairs, Denver, CO

**Purpose:** Because real-world patients may not exhibit the same level of medication adherence seen in clinical trials, the effectiveness of medications in routine practice may differ. Cost-effectiveness analysis (CEA) models often do not incorporate adherence variation. Furthermore, the Markovian assumption does not allow adherence history to affect future event probabilities. We created a framework incorporating adherence history into a Markov model using the example of Justification for the Use of Statins in Prevention: an Intervention Trial Evaluating Rosuvastatin (JUPITER).

**Method:** Prescription claims records for primary prevention statin users were obtained using the IMS LifeLink Health Plan Claims Database. Yearly adherence was measured as the proportion of days covered (PDC) for three years following statin initiation and was categorized as A0 (PDC=0), A1 (0<PDC≤.33), A2 (.33<PDC≤.66), or A3 (PDC>.66). Yearly adherence transitions were incorporated into a Markov microsimulation using TreeAge software. Tracker variables and global matrices stored adherence transitions which were used to adjust statin costs and subsequent probabilities of cardiovascular events over the patient’s lifetime. Statin effectiveness was adjusted between 0% (level A0) and 100% (level A3) of trial-based risk reduction. 10,000 microsimulations were used to estimate incremental cost-effectiveness ratios (ICERs) as US dollars per quality-adjusted life-year (QALY). The model was an extension of the authors’ previously published JUPITER CEA model in which adherence was not incorporated ("adherence-naïve").
Result: Among 27,862 new statin users, 58% began the first year of statin use in level A3, while 20% and 22% were in levels A2 and A1, respectively. By year three, we found a significant decrease in adherence. 32% of patients were in level A3, 15% in A2, 20% in A1 and 33% in A0. The model incorporating adherence resulted in an ICER of $23,459/QALY while the ICER of the adherence-naïve model was $11,127/QALY. Patient subgroup analysis revealed that the ICER for patients beginning in level A1 was $52,214/QALY while the ICER for patients beginning in level A3 was $17,578/QALY. The ICER for patients remaining in level A3 for three years was $8,347/QALY.

Conclusion: Patient-level simulations that include adherence behavior reveal value differences not seen in a cohort model based on the “average” patient. In the interest of patient-centered outcomes research and personalized medicine, this approach adds insight to how patient subgroups may benefit from adherence-improving interventions.

TR2. CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 2 - HEALTH SERVICES, ECONOMICS AND POLICY

10:30 AM - 12:00 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Session Chairs:
- Anirban Basu, PhD
- David O. Meltzer, MD, PhD

Session Summary:

10:30 AM - 10:48 AM
TR2-1. COST-EFFECTIVENESS AND PUBLIC HEALTH/BUDGET-IMPACT OF FFR-GUIDED PCI IN MULTIVESSEL PATIENTS IN 6 EUROPEAN COUNTRIES - ANALYSIS ALONG THE FAME TRIAL DATA

10:48 AM - 11:06 AM
TR2-2. EFFECTIVENESS AND COST EFFECTIVENESS OF ORAL PRE-EXPOSURE PROPHYLAXIS FOR INJECTION DRUG USERS IN MIXED HIV EPIDEMICS
11:06 AM - 11:24 AM

TR2-3. INTERNAL VALIDATION AND CALIBRATION OF A MODEL TO FORECAST HIV TREATMENT DEMAND AND CAPACITY IN HAITI

11:24 AM - 11:42 AM

TR2-4. GENE EXPRESSION PROFILING FOR GUIDING ADJUVANT CHEMOTHERAPY DECISIONS IN WOMEN WITH EARLY BREAST CANCER: A COST-EFFECTIVENESS ANALYSIS OF 1000 STRATEGIES FOR THE PROVISION OF ADJUVANT! ONLINE, 21-GENE ASSAY AND CHEMOTHERAPY

11:42 AM - 12:00 PM

TR2-5. ESTIMATING UTILITIES FOR CHRONIC KIDNEY DISEASE IN PATIENTS WITH TYPE 2 DIABETES USING TRANSFORMED SF-36 AND SF-12 RESPONSES: CHALLENGES IN A VETERAN POPULATION

Abstracts:

TR2-1. COST-EFFECTIVENESS AND PUBLIC HEALTH/BUDGET-IMPACT OF FFR-GUIDED PCI IN MULTIVESSEL PATIENTS IN 6 EUROPEAN COUNTRIES - ANALYSIS ALONG THE FAME TRIAL DATA

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 2 - HEALTH SERVICES, ECONOMICS AND POLICY

Uwe Siebert, MD, MOH, MSc, ScD¹, Bernhard Bornschein, MD, MPH², Marjan Arvandi, MS², Raffaella M. Gothe, MS² and European Clinical Expert Panel Economic Evaluation FAME Study², (1)UMIT-Univ. for Health Sciences,Medical Informatics and Technology; Harvard School Public Health, Harvard Medical School, Boston, Hall i.T., Austria, (2)UMIT - University for Health Sciences, Medical Informatics and Technology, Hall i.T., Austria

Purpose: The FAME Study, an international multicenter RCT (n=1005), demonstrated significant health benefits for patients undergoing multivessel percutaneous coronary intervention (PCI) guided by fractional flow reserve (FFR) measurement compared with PCI guided by angiography alone (ANGIO). The aim of our study was to determine the cost-effectiveness as well as the public health and budget impact for six European countries.

Method: All analyses were performed for patients with multivessel disease comparing
FFR vs. ANGIO, based on the original patient-level data of the FAME Study (Tonino et al., NEJM2009). The following analyses were performed for Germany, UK, Italy, France, Belgium and Switzerland. In the prospective cost-effectiveness analyses, we calculated the incremental cost-effectiveness ratios (ICER) in Euro/QALY gained during 1 year adopting the societal perspective. Utilities were measured with country-specific EQ-5D or Torrance-transformed European weights, respectively. Costs were based on country-specific prices and DRGs. The public health and budget impact analysis was based on national PCI registries and performed from the national payer’s perspective over a budget period of two years. Variability was estimated using the Bootstrap method (n=5000 samples) and extensive sensitivity analysis.

Result: In the FAME trial, major adverse cardiac events at 1 year occurred in 13.2% of patients in the FFR arm and 18.3% of patients in the ANGIO arm (p=0.02). For all six countries, FFR was cost-saving compared to ANGIO. Bootstrap simulation indicated FFR being cost saving in 52-73% and cost effective in 89-92% at a threshold of 50,000 EUR/QALY gained. Mean savings per patient range from 300 EUR (Germany) to 900 EUR (France). The 2-year public health impact due to the use of FFR ranged was largest for Germany with more than 500 deaths avoided, more than 2000 major cardiac events avoided, and 380 QALYs gained. The 2-year budget impact ranges from less than 1 million to more than 27 million EUR total cost savings depending on the country. Sensitivity analyses showed that prices of FFR pressure wire and drug-eluting stents were most influential, determining whether FFR is cost-effective or cost-saving.

Conclusion: In the health care systems of Germany, UK, Italy, France, Belgium and Switzerland, FFR-guided PCI in patients with multivessel coronary disease substantially reduces cardiac events, improves QALYs and is cost saving.

TR2-2. EFFECTIVENESS AND COST EFFECTIVENESS OF ORAL PRE-EXPOSURE PROPHYLAXIS FOR INJECTION DRUG USERS IN MIXED HIV EPIDEMICS

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 2 - HEALTH SERVICES, ECONOMICS AND POLICY

Sabina S. Alistar, MS, Stanford University, Stanford, CA

Purpose: Pre-exposure prophylaxis with oral antiretroviral treatment (oral PrEP) for HIV-uninfected injection drug users (IDUs) is potentially useful in controlling HIV epidemics with a significant injection drug use component. The role oral PrEP in portfolios of interventions including methadone maintenance therapy (MMT) for drug users and antiretroviral treatment (ART) for infected individuals is unknown. We estimated the effectiveness and cost effectiveness of strategies for using oral PrEP (up to 50% of uninfected IDUs) in various combinations with MMT (25% of IDUs) and ART (80% of all eligible patients) in Ukraine, a representative case for mixed HIV epidemics.
**Method:** We expanded a previously developed dynamic compartmental model of the HIV epidemic in a population of non-IDUs, IDUs who inject opiates, and IDUs on methadone, adding an oral PrEP program (tenofovir, 50% susceptibility reduction) for uninfected IDUs. The model was populated with data from Ukraine. We modeled 1,000,000 individuals aged 15-49 stratified by HIV status and injection drug use. We analyzed packages of interventions consisting of MMT, ART and oral PrEP. We measured health care costs, quality-adjusted life years (QALYs), HIV prevalence, HIV infections averted, and incremental cost effectiveness.

**Result:** Without incremental interventions, after 20 years HIV prevalence reached 67.3% in IDUs and 0.9% in non-IDUs. A combination of MMT and oral PrEP for 25% of IDUs lowered HIV prevalence the most in both IDUs (46.2%) and the general population (0.7%). ART (80% access for eligible infected individuals), combined with MMT (25% of IDUs) and oral PrEP (25% of uninfected IDUs) averted the most infections (10,700), followed by ART (80% access) and oral PrEP (50% access), with 8,900 infections averted. The most cost-effective strategy was MMT (25% of IDUs), gaining 76,000 QALYs versus no intervention, at $530/QALY gained. The next most cost-effective strategy consisted of MMT (25% of IDUs) and ART (80% access), at $1,120/QALY gained. Further adding oral PrEP (25% access) was also cost-effective, at $12,240/QALY gained. Oral PrEP alone became cost-effective for annual PrEP costs comparable to annual HIV care costs.

**Conclusion:** Oral PrEP can be part of cost-effective intervention packages to control HIV epidemics where injection drug use is significant. Where budgets are limited, focusing on MMT and ART access should be the priority. Oral PrEP alone may become highly cost-effective if costs decline significantly.

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**TR2-3. INTERNAL VALIDATION AND CALIBRATION OF A MODEL TO FORECAST HIV TREATMENT DEMAND AND CAPACITY IN HAITI**

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: **CONCURRENT PRESENTATION OF TOP-RANKED ABSTRACTS - 2 - HEALTH SERVICES, ECONOMICS AND POLICY**

**April D. Kimmel, PhD, Daniel W. Fitzgerald, MD, Macarthur Charles, MD, PhD, Alison Edwards, MStat, Abdias Marcelin, Jean W. Pape, MD and Bruce R. Schackman, PhD,** (1)Weill Cornell Medical College, New York, NY, (2)Les Centres GHESKIO, Port-au-Prince, Haiti, (3)Les Centres GHESKIO, Weill Cornell Medical College, New York, NY

**Purpose:** International guidelines recommend early HIV treatment initiation (i.e., at CD4 <350) for HIV-infected individuals in resource-limited settings. However, funding availability for early or deferred HIV treatment (i.e., at CD4 <200) in Haiti is uncertain. We aimed to internally validate and calibrate a user-friendly model of HIV disease in Haiti that will assist policy makers in forecasting treatment need and capacity.
Methods: We used patient-level data from Haitian observational cohorts and a randomized trial conducted in Haiti to develop a computer-based, mathematical model of HIV disease. Incidence density analysis was used to derive model parameters for untreated HIV disease progression (HIV seroconverters cohort, n=41; asymptomatic HIV disease, n=436) and HIV treatment (early 1\textsuperscript{st}-line treatment, n=408, deferred 1\textsuperscript{st}-line treatment, n=910; deferred 2\textsuperscript{nd}-line treatment, n=194). Model predictions were compared to observed data to assess internal validity. Goodness of fit measures included visual assessment of Kaplan-Meier survival curves, comparisons of 5-year event probability, and percentage deviation between the predicted estimates and observed data at discrete time points, averaged over time. When model predictions did not exhibit a good fit due to model structure simplifications that would enhance usability, an internal calibration algorithm was applied to improve goodness of fit between predicted and observed outcomes. The model was implemented in Microsoft Excel, and results evaluated over a 5-and 10-year policy time horizon.

Results: For a cohort of newly HIV-infected individuals with no access to HIV treatment, the model predicts median AIDS-free survival of 9.0 years pre-calibration and 5.6 years post-calibration versus 5.8 years (95\% CI 5.1, 7.0) observed (Figure 1). For a cohort of patients initiating deferred treatment, the model estimates 23.2\% would die by 5 years (versus 23.5\% in the observed data), 7.3\% would be lost from care (versus 7.8\%), and 11.7\% would initiate a second treatment regimen (versus 10.8\%). In 12 out of 14 comparisons assessing different natural history and treatment-related outcomes, mean percentage deviation between the model predictions and observed data does not exceed 5\% over both 5 and 10 years.

Conclusions: Internal validation and calibration results were sufficient for 5- and 10-year health policy decision making. Using local data in a model-building process can improve validity and acceptability of policy models in resource-limited settings.

![Figure 1. Kaplan-Meier AIDS-free survival](image-url)
Purpose: Adjuvant chemotherapy decisions for women with early-stage breast cancer are complex. The 21-gene assay, a gene expression profiling test, is validated at predicting distant recurrence-free response in patients with ER+ LN- early-stage breast cancer. This enables chemotherapy to be better targeted at higher risk patients than is possible through the use of Adjuvant! Online (AOL) or clinical judgement alone. However, existing cost-effectiveness analyses of the 21-gene assay have numerous limitations: in particular, they consider a limited range of strategies and do not separately consider intermediate risk patients identified through either AOL or the 21-gene assay. Our objective was to build an Ontario-based cost-effectiveness analysis which comprehensively addresses these limitations.

Method: We built upon a Markov model developed by Tsoi and colleagues, using data from the NSABP B-14 and B-20 clinical trials. We assumed that AOL and the 21-gene assay may be provided separately or sequentially and considered the chemotherapy decision separately for every possible risk group, resulting in 1000 unique strategies for the provision of AOL, the 21-gene assay and chemotherapy.

Result: The 21-gene assay appears cost-effective for all patients, regardless of a patient’s initial AOL risk assessment. The highest ICER is in patients at low AOL risk ($29,000 per QALY), while the 21-gene assay dominates in patients at high AOL risk. Chemotherapy appears cost-effective only in patients at intermediate or high 21-gene assay risk. The highest ICER is in patients at low AOL and intermediate 21-gene assay risk ($64,000 per QALY). Chemotherapy is dominated in patients at low 21-gene assay risk.

Conclusion: The 21-gene assay appears to be cost-effective for all Ontario women with ER+ LN- early-stage breast cancer, regardless of the woman’s initial AOL risk assessment. These results have informed the Ontario Health Technology Advisory Committee’s recent deliberations regarding the funding of the 21-gene assay in Ontario.
Purpose: To compare four previously-published methods of transforming Short Form 36 and 12 Item Health Surveys (SF-36 /SF-12) data into utilities, using survey responses from veterans with diabetes (DM) and chronic kidney disease (CKD); to determine if these transformations are valid for discriminating utility losses (disutilities) as CKD severity increases; and to estimate the disutility associated with progressive CKD.

Methods: Veterans with DM were selected who responded to the Large Veterans Health Survey in 1999 and divided into those with recent-onset DM (duration of ≤3 years) and prevalent DM (duration >3 years). Surveys were merged with data from the Diabetes Epidemiology Cohort, a well-established longitudinal cohort of veterans with diabetes. ICD-9 and procedure codes determined if respondents were on dialysis or had end-stage renal disease (ESRD). If subjects did not have ESRD/dialysis, serum creatinines were used to stage CKD. Four previously-published SF-36 /SF-12-to-utility transformations (A = SF-12 to SF-6D, B = SF-36 to SF-6D, C = SF-36 to HUI2, D= SF-12 to VR-6D) were used to estimate utilities (U) for each respondent. Generalized linear regression models estimated the disutility associated with each CKD stage, after adjustment for demographics, socio-economics, and co-morbidities.

Results: Of 67,694 diabetic patients, 22,273 had recent-onset and 45,691 patients had prevalent DM. The figure gives mean utilities by each method for recent-onset DM patients; results were similar for prevalent DM. Method A did not discriminate utility by CKD stage, among either recent-onset or prevalent diabetics. The remaining three methods showed a stepwise decline in utility as CKD stage increased. The rank order was consistently U(A)>U(C)>U(B)>U(D). In recent-onset DM, mean disutilities associated with increasing CKD stage differed significantly by transformation method (p<0.0001) and ranged between 0.0017 - 0.0042, -0.0067 - -0.0019, -0.0256 - -0.0041, and -0.0116 - -0.0091 for CKD stages 2, 3, 4/5, and ESRD/dialysis respectively; results were similar for prevalent DM.
Conclusions: In a cross-sectional analysis of diabetic veterans, systematic differences were found in utilities estimated using four transformations of SF-36/SF-12 data. In particular, method A may not capture all available SF-36 information, resulting in inconsistent utility estimates relative to other methods. CKD-associated disutility values differed significantly between methods at each CKD stage, suggesting that selection of transformation method requires careful consideration of potential floor and ceiling problems.

CONCURRENT ORAL SESSION A:

1:30 PM - 3:00 PM: Mon. Oct 24, 2011

A. DECISION PSYCHOLOGY LUSTED FINALISTS

1:30 PM - 3:00 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Session Chairs:

- Sophie Desroches, RD, PhD
- Marla L. Clayman, PhD, MPH

Session Summary:

1:30 PM - 1:45 PM
A-1. PATIENT PARTICIPATION IN DECISION MAKING ABOUT DISEASE MODIFYING ANTI-RHEUMATIC DRUGS: PERCEIVED AND PREFERRED ROLES OF PATIENTS

1:45 PM - 2:00 PM

A-2. INACCURATE EXPECTATIONS? AFFECTIVE FORECASTING IN THE CONTEXT OF ELECTIVE HYSTERECTOMY

2:00 PM - 2:15 PM

A-3. EFFECTS OF DECISION AIDS ON DECISIONAL CONFLICT ASSOCIATED WITH OSTEOARTHRITIS TREATMENT

2:15 PM - 2:30 PM

A-4. THE WEIGHT OF HISTORY: CAPTURING PROSTATE CANCER RISK AND SCREENING POLICIES FOR MEN WITH AND WITHOUT A FAMILY HISTORY USING A POLICY-CAPTURING APPROACH

2:30 PM - 2:45 PM

A-5. ASSESING PATIENTS' INVOLVEMENT IN DECISION-MAKING DURING A NUTRITIONNAL CONSULTATION WITH A DIETITIAN

2:45 PM - 3:00 PM

A-6. REWARD SENSITIVITY, TEMPORAL DISCOUNTING, GENDER AND RISKY HEALTH BEHAVIORS: A FUZZY-TRACE THEORY APPROACH

Abstracts:

A-1. PATIENT PARTICIPATION IN DECISION MAKING ABOUT DISEASE MODIFYING ANTI-RHEUMATIC DRUGS: PERCEIVED AND PREFERRED ROLES OF PATIENTS

1:30 PM - 1:45 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: DECISION PSYCHOLOGY LUSTED FINALISTS
Ingrid Nota, MSc¹, C.H.C. Drossaert, Dr.¹, E. Taal, Dr.¹, B.C. Visser, MSc² and M.A.F.J. Van de Laar, Prof., Dr.¹, (1)University of Twente, Enschede, Netherlands, (2)Medisch Spectrum Twente, Enschede, Netherlands

Purpose: This study explores what role patients with rheumatic diseases perceive and prefer to have in decisions about Disease-Modifying Anti-Rheumatic Drugs (DMARD's) and what the concordance between preferred and perceived role in these decisions is.

Methods: Patients (n=519) diagnosed with Rheumatoid Arthritis, Arthritis Psoriatica or Ankylosis Spondylitis from two hospitals in the Netherlands filled out a questionnaire. Questions included perceived and preferred role in medical decision making in general, and in four specific decision-categories: starting to use traditional DMARD's, starting to inject a DMARD, starting to use biological DMARD's and decrease or stop using DMARD's.

Results: Most respondents perceived that, in current practice, treatment decisions in general were made by the doctor (43%) or by the doctor and patient together (55%). However, the perceived roles varied per decision-category: e.g. most patients (72%) felt that the decision to start using a traditional DMARD was made by the doctor, whereas the decision to decrease or stop using DMARD's was more often perceived as being made by the patients themselves (24%) or by doctor and patient together (38%). The preferred roles were, contrary to the perceived roles, consistent across the decision-categories. Most respondents (59-63%) preferred to share decisions with their doctor. By using a paired sample t-test the concordance between the perceived and preferred role was evaluated. Table 1 shows that there was a significant difference in 4 of 5 decision-categories. Only the decision to decrease or stop using DMARD's had no significant difference between perceived and preferred role.
For a considerable group the perceived and preferred participation for decision making in general matched (61%); about one third (29%) perceived less participation than preferred and a minority perceived more participation than preferred. Again, the concordance varied across the decision-categories. Especially for the decision to start with a traditional DMARD, many respondents had experienced less participation than they preferred (54%).

**Conclusions:** Although patients seem consistent in their preference for participation in various DMARD-decisions, the amount of perceived participation varied across the different decisions. Patients should especially be more involved in decisions about starting to use a traditional DMARD. Patient Decision aids might be helpful tools to increase patient participation.

**A-2. INACCURATE EXPECTATIONS? AFFECTIVE FORECASTING IN THE CONTEXT OF ELECTIVE HYSTERECTOMY**

1:45 PM - 2:00 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: DECISION PSYCHOLOGY LUSTED FINALISTS

Jaclyn C. Watkins, M.S.¹, Miriam Kuppermann, PhD, MPH², Jodi Halpern, MD, PhD³ and Maureen Lahiff, PhD³, (1)University of California, San Francisco, Berkeley,

<table>
<thead>
<tr>
<th>Decision</th>
<th>Perceived role</th>
<th>Preferred role</th>
<th>Total</th>
<th>Preferred role</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Doctor (1)</td>
<td>Shared (2)</td>
<td>Patient (3)</td>
<td>Doctor (1)</td>
<td>Shared (2)</td>
</tr>
<tr>
<td>MDM in general</td>
<td>43%</td>
<td>55%</td>
<td>1%</td>
<td>1.6</td>
<td>506</td>
</tr>
<tr>
<td>Starting to use traditional DMARD</td>
<td>72%</td>
<td>26%</td>
<td>2%</td>
<td>1.3</td>
<td>368</td>
</tr>
<tr>
<td>Starting to inject MTX</td>
<td>43%</td>
<td>40%</td>
<td>17%</td>
<td>1.7</td>
<td>162</td>
</tr>
<tr>
<td>Starting to use biological DMARD</td>
<td>44%</td>
<td>50%</td>
<td>6%</td>
<td>1.6</td>
<td>149</td>
</tr>
<tr>
<td>Decrease or stop DMARD</td>
<td>38%</td>
<td>38%</td>
<td>24%</td>
<td>1.9</td>
<td>314</td>
</tr>
</tbody>
</table>

*Perceived role includes respondents who ever faced the decision; Preferred role includes all respondents.

¹ Difference = difference between preferred and perceived role, tested with paired sample t-test.

n.s. = not significant
Purpose: To assess the accuracy of women’s emotional expectations of elective hysterectomy as treatment for noncancerous uterine conditions through the lens of affective forecasting.

Methods: This is a secondary analysis of data collected as part of the Study of Pelvic Problems, Hysterectomy, and Intervention Alternatives, a longitudinal study designed to examine the effects of noncancerous uterine conditions on health-related quality of life and to identify predictors of use of and satisfaction with hysterectomy and alternative treatments. Patients who had sought care for bleeding, pain, and/or pressure at one of several Bay Area hospitals were interviewed annually for up to eight years. For this analysis, only women who had a hysterectomy were included (n=159). The primary predictors and outcomes included agreement scores ranging from 1 to 7 on several 1-item attitude measures phrased as expectations prior to hysterectomy and as outcomes post-hysterectomy. Forecasting ability (tendency to accurately estimate, overestimate, or underestimate affective responses) and an overall hysterectomy expectation score were also outcomes.

Results: Compared to their post-hysterectomy scores, before undergoing hysterectomy, participants reported significantly higher agreement with the following statements: “Having a uterus makes/made me feel complete as a woman” (4.08 v. 3.16; p=<0.001), “My uterus is/was important to my sexual enjoyment” (3.51 v. 2.65; p=<0.001), “Having a hysterectomy would make/made me feel violated” (2.77 v. 2.29; p=0.042), and “Having a hysterectomy would make/made me feel older” (3.36 v. 2.65; p=0.006). They showed significantly less agreement with a statement regarding the benefit of hysterectomy as birth control pre-hysterectomy (4.59 v. 5.20; p=0.008). There was no significant change in response to a statement regarding feeling sad about losing fertility (p=0.955). Multinomial logistic regressions revealed few significant associations between forecasting ability and sociodemographic variables. Notable findings include an association between increased age and accuracy of impact of hysterectomy on sexual enjoyment (relative risk ratio=0.82, CI (0.71, 0.93), p=0.003) and between pre-hysterectomy sexual importance and overestimation of hysterectomy’s impact on sexual enjoyment (relative risk ratio=1.93, CI (1.23, 3.02), p=0.004).

Conclusions: Women tend to overestimate the impact of perceived negatives associated with hysterectomy, suggesting the presence of forecasting errors. Further exploration of the specific forecasting errors made in the context of elective hysterectomy would aid in the development of more effective decision tools for women considering hysterectomy.

A-3. EFFECTS OF DECISION AIDS ON DECISIONAL CONFLICT ASSOCIATED WITH OSTEOARTHRITIS TREATMENT

2:00 PM - 2:15 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
**Sofia de Achaval, MS¹, Liana Fraenkel, MD, MPH², Vanessa Cox, MS¹, Robert J. Volk, PhD¹ and Maria E. Suarez-Almazor, MD, PhD¹, (1)The University of Texas MD Anderson Cancer Center, Houston, TX, (2)Yale School of Medicine, New Haven, CT**

**Purpose:** To examine the impact of a decision aid coupled with an adaptive conjoint analysis (ACA) program on decisional conflict in decision making for treatment of osteoarthritis (OA).

**Method:** A total of 209 patients with OA in one or both knees who had not undergone total knee arthroplasty (TKA), but had thought about it or had talked to their doctor about it participated in the study (mean age 63 years; 68% female; 66% White). Participants were randomly allocated into one of three groups: 1) a control arm brochure, 2) a DVD-based decision aid, and 3) the same DVD-based decision aid plus the ACA program. The primary outcome measure [decisional conflict scale (DCS)] was evaluated using pre/post intervention self-administered questionnaires along with demographic characteristics and impact of OA on quality of life (KOOS). Statistical analysis included descriptive statistics and analysis of variance (ANOVA) to estimate the effect of the intervention on decisional conflict.

**Result:** Overall, the intervention statistically significantly reduced decisional conflict in all groups (p<0.05). The difference between the pre and post mean subscale scores for the DCS measured change in the expected direction: decision uncertainty decreased, informativeness increased, values clarity increased, support increased and effective decision increased. The largest reduction in decision conflict was observed for participants in the DVD decision aid group. Post hoc analyses indicated a statistically significant difference in pre vs. post-intervention DCS total score comparing the DVD group to the control group and comparing the DVD group to the DVD plus ACA group (p<0.001). The changes in decision conflict for the control compared to the DVD decision aid plus ACA group were not significantly different.

**Conclusion:** In this study, the addition of an ACA program to a DVD decision aid did not lead to greater reductions in decisional conflict. Long-term effectiveness is yet to be determined and should take into account additional patient and provider preferences.

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**A-4. THE WEIGHT OF HISTORY: CAPTURING PROSTATE CANCER RISK AND SCREENING POLICIES FOR MEN WITH AND WITHOUT A FAMILY HISTORY USING A POLICY-CAPTURING APPROACH**

Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: **DECISION PSYCHOLOGY LUSTED FINALISTS**

**Michelle McDowell, BPsysc(hons)¹, Stefano Occhipinti¹ and Suzanne Chambers², (1)Griffith University, Brisbane, Australia, (2)Griffith University, Gold Coast, Australia**
**Purpose:** To understand how men integrate information about prostate cancer risks and screening guidelines to make judgements about prostate cancer and exploring whether having a first-degree family history influences how this information is integrated.

**Method:** First-degree relatives of men with prostate cancer (n=32) and men without a family history of prostate cancer (n=50) from Queensland, Australia completed a policy-capturing study. Forty-eight distinct profiles were created based on a full factorial design utilising four cues: family history (none, brother, father, brother and father), age (40’s, 50’s, 60’s), physician discussion (yes, no), and symptoms (presence, absence). Participants rated each profile according to their perception of the stimulus’s prostate cancer risk and whether the stimulus should consider prostate cancer screening.

**Result:** Multi-level modelling analyses were employed to predict the use of information cues on perceived risk ratings and on prostate cancer screening recommendations and to explore family history status as a moderator of these ratings. Family history, older age, and the presence of urinary symptoms in stimulus profiles were associated with greater judgements of prostate cancer risk by all men. First-degree relatives of men with prostate cancer weighted the family history cue lower in their judgements of risk than did men without a family history. There was minimal variability in the endorsement of prostate cancer screening across profiles and most men recommended screening for all stimulus men regardless of the values of information cues.

**Conclusion:** Family history is an important information cue for all men in determining judgements of prostate cancer risk. However, first-degree relatives weight the family history cue lower than do men without a family history when making judgements about prostate cancer risk where they consider the specific nature of the family history. First-degree relatives of men with prostate cancer consider the broader context of having a relative with prostate cancer and incorporate this information in determining their judgements which may have implications on the informed decision-making process.

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**A-5. ASSESING PATIENTS’ INVOLVEMENT IN DECISION-MAKING DURING A NUTRITIONNAL CONSULTATION WITH A DIETITIAN**

Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: **DECISION PSYCHOLOGY LUSTED FINALISTS**

**Hugues Vaillancourt, BSc, France Légaré, MD, PhD, Annie Lapointe, RD, PhD, Sarah-Maude Deschênes, RD and Sophie Desroches, RD, PhD, CHUQ Research Center-Hospital St-François d'Assise, Knowledge Transfer and Health Technology Assessment, Laval University, Québec, QC, Canada**

**Purpose:** Little is known about shared decision making (SDM) in diet-related healthcare and clinical practice. Therefore, our objective was to assess the extent to
which dietitians involve patients in decisions about their dietary treatment.

**Method:** We recruited dietitians working in hospitals in the Province of Quebec (Canada). Participating dietitians were asked to identify one patient to be seen during an upcoming consultation and in which a value-sensitive, nutritional treatment decision was expected to occur. All patients consulting for a diet-related health condition were eligible to participate. We audiotaped dietitians conducting nutritional consultations with their patients and we transcribed the tapes verbatim. Three trained raters independently evaluated the content of the nutritional consultations with a coding frame based on the 12 items of the French-language version of the OPTION scale, a validated and reliable third-observer instrument designed to assess patients’ involvement by examining specific health professional behaviours. Coding was facilitated by the qualitative research software NVivo 8. We assessed internal consistency with Cronbach’s alpha and inter-rater reliability with the intraclass correlation coefficient (ICC).

**Result:** Of 40 dietitians eligible to participate in the study, 19 took part. All dietitians were women aged between 24 to 60 years old (mean age 39.3±11.0 years). Their mean number of years in dietetic practice was 13.5±9.2. We recruited one patient per participating dietitian. Patients (mean age 40.2±25.2) were consulting for a variety of diet-related health conditions including diabetes, cardiovascular disease, and high risk pregnancy. The overall mean OPTION score was 29±8 (range=0 [no involvement] to 100 [high involvement]). Internal consistency and inter-rater reliability were both good (Cronbach’s alpha=0.938; ICC=0.65). Dietitians demonstrated the highest standard of skill for exploring patient’s expectations about how to manage the problem and the lowest for assessing the patient’s preferred approach to receiving information to assist decision making. Mean duration of consultations was 50±26min. The OPTION score was positively correlated with the duration of consultation (r=0.65,P<0.01).

**Conclusion:** Results indicate that dietitians’ involvement of patients in decisions about their dietary treatment is suboptimal. Interventions to increase patients’ involvement in decisions about their dietary treatment are needed and should include the training of dietitians. *This study was funded by a George Bennett postdoctoral grant from the Foundation for Informed Medical Decision Making awarded to SD (FIMDM 2008-2009, grant #0108-1).*

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**A-6. REWARD SENSITIVITY, TEMPORAL DISCOUNTING, GENDER AND RISKY HEALTH BEHAVIORS: A FUZZY-TRACE THEORY APPROACH**

*2:45 PM - 3:00 PM: Mon. Oct 24, 2011*
*Grand Ballroom EF (Hyatt Regency Chicago)*
*Part of Session: DECISION PSYCHOLOGY LUSTED FINALISTS*

*Evan A. Wilhelms, Priscila G. Brust, Valerie Reyna, PhD, Seth T. Pardo, MA and Wilson Sui, Cornell University, Ithaca, NY*

**Purpose:** To examine relations among intuitive processes (i.e., gist), temporal
discounting, sensation seeking (reward sensitivity), and risk-taking in health domains such as alcohol use and food choices, and interactions with gender.

**Method:** Adults (N=966; 67% female; 37% Minority; mean age 20.2) were surveyed anonymously. Temporal discounting questions were presented for 3 commodities (alcohol, candy bars and money), varying immediate magnitude (1 or 6) and magnitude of the commodity one month later (Which would you choose: 1 candy bar now or 3 candy bars in one month?). Discount rates were calculated for each commodity by magnitude condition. Participants also selected the gist of their decisions from five ordinal options (e.g., Now is always better than later.) and responded to the Brief Sensation Seeking Scale (BSSS). Health behaviors included alcohol use (WHO’s Alcohol Use Disorders Identification Test, AUDIT), risk-taking (Adolescent Risk Questionnaire, ARQ), and spending behavior (Spendthrift Scale).

**Result:** In a regression using gist, discounting, sensation seeking, and gender as predictors of risky behaviors, discounting and gender were not significant by themselves, but discounting interacted with gender. Moreover, gist explained unique variance beyond other predictors. Specifically, health behaviors (AUDIT and ARQ) correlated with alcohol discount rates among males, whereas these behaviors correlated with candy discount rates among females. Similarly, alcohol gist correlated with males’ risky behaviors, whereas candy gist correlated with females’ risky behaviors. Discounting and reward sensitivity also predicted beyond their domains (e.g., alcohol predicted spending).

**Conclusion:** Consistent with Fuzzy-Trace Theory, unhealthy risk-taking behaviors were predicted by both reward sensitivity (sensation seeking) and information processing based on gist, each accounting for unique variance in health behaviors. In addition, there was a gender-specific effect in which alcohol predicted better for men, but candy bars predicted better for women. These results are consistent with a theoretical mechanism in which the perception of the gist of choices, as well as individual and group differences in reward salience, each account for unique variance in predicting risk taking and unhealthy choices. Implications for public health messages and medical decision making will be discussed.
B-1. ADHERENCE WITH COLORECTAL CANCER SCREENING: DOES THE WAY YOU MODEL IT MATTER?

1:30 PM - 1:45 PM

B-2. A PRAGMATIC APPROACH FOR ASSESSING PREDICTORS OF MEDICATION ADHERENCE

1:45 PM - 2:00 PM

B-3. INVESTMENT AND DISINVESTMENT OF HEALTH TECHNOLOGIES: THE NEED FOR TWO COST-EFFECTIVENESS THRESHOLDS

2:00 PM - 2:15 PM

B-4. COMPARATIVE EFFECTIVENESS RESEARCH AND TECHNOLOGICAL ABANDONMENT

2:15 PM - 2:30 PM

B-5. A FRAMEWORK FOR MEASURING THE VALUE OF QUALITY IMPROVEMENT

2:30 PM - 2:45 PM

B-6. HISTORICAL CONTROLS FOR MORTALITY: R.I.P

2:45 PM - 3:00 PM

Abstracts:

B-1. ADHERENCE WITH COLORECTAL CANCER SCREENING: DOES THE WAY YOU MODEL IT MATTER?

1:30 PM - 1:45 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH TECHNOLOGY AND OUTCOMES RESEARCH

Jessica Cott Chubiz, MS, Amy B. Knudsen, Ph.D. and G. Scott Gazelle, MD, MPH, PhD, Massachusetts General Hospital, Boston, MA
Purpose: Modeling adherence with colorectal cancer (CRC) screening is challenging due to limited data on longitudinal adherence patterns. We assessed whether the manner in which imperfect adherence is simulated affects model-predicted conclusions about the effectiveness and cost-effectiveness of CRC screening.

Method: Using a previously-developed microsimulation model of CRC, we predicted the fraction of 50-year-olds ever screened as well as the life-years gained (LYG), lifetime costs, and incremental cost-effectiveness ratios (ICERs) for two CRC screening strategies: five-yearly computed tomographic colonography (CTC) and ten-yearly colonoscopy (COL). We considered four approaches for simulating imperfect adherence (based on approaches used in the literature), each of which could be described as assuming 50% adherence: (1) fraction (50%) perfectly adherent and fraction (50%) completely nonadherent; imperfect random adherence at a constant rate (50%) (2) without and (3) with dropout; and (4) heterogeneity in imperfect adherence with constant rates within population subgroup (population average 50%).

Result: The fractions ever screened were 50% for scenarios 1 and 3, and higher for at least one strategy in scenarios 2 and 4 (Table). In scenarios 1 and 3, COL was more effective than CTC, while in scenarios 2 and 4 CTC was more effective. CTC was the most costly strategy in scenarios 1 and 4 and less costly than COL in scenarios 2 and 3. CTC was dominated in scenario 1, COL was dominated in scenarios 2 and 4, and in scenario 3 the ICER of COL vs. CTC was $8,900/LYG.

Conclusion: The manner in which imperfect adherence is simulated affects the model-predicted relative effectiveness, cost, and cost-effectiveness of CTC vs. COL screening for CRC. To clarify the implications of adherence assumptions in the context of repeated screening, we recommend that modelers report the fraction of the population ever screened with each modality, as well as findings assuming perfect adherence. While unrealistic, the latter output enables direct comparison of alternative screening options among those willing to be screened and facilitates comparisons across models.

<table>
<thead>
<tr>
<th>Adherence scenario</th>
<th>Ever screened</th>
<th>LYG vs. NS*</th>
<th>Lifetime costs* (millions $)</th>
<th>ICER ($/LYG)</th>
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<td>NS COL CTC</td>
<td>NS COL CTC</td>
<td>NS COL CTC</td>
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<tr>
<td>1</td>
<td>0 50 50</td>
<td>0 60 59</td>
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<td>5,500 vs. NS</td>
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<tr>
<td>2</td>
<td>0 83 93</td>
<td>0 74 83</td>
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<td>Dominated</td>
</tr>
<tr>
<td>3</td>
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<td>0 50 40</td>
<td>2.79B 2.919 2.831</td>
<td>8,900 vs. CTC</td>
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<tr>
<td>4</td>
<td>0 50 54</td>
<td>0 51 54</td>
<td>2.79B 2.957 2.969</td>
<td>Dominated</td>
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</tbody>
</table>

* Discounted at 3% annual rate.
- indicates least costly and least effective non-dominated strategy; NS = no screening.
B-2. A PRAGMATIC APPROACH FOR ASSESSING PREDICTORS OF MEDICATION ADHERENCE

1:45 PM - 2:00 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH TECHNOLOGY AND OUTCOMES RESEARCH

Bijan J. Borah, Ph.D., College of Medicine, Mayo Clinic, Rochester, MN

Purpose: Medication adherence among chronic disease patients has been shown to improve outcomes, which in turn results in reduced overall healthcare costs. A comprehensive understanding of the predictors of adherence is essential to formulate targeted strategies for improving adherence. Existing methods have not considered evaluation of heterogeneous impacts of adherence predictors at different parts (quantiles) of the adherence distribution as defined by medication possession ratio. Using the novel econometric framework of unconditional quantile regression (UQR), this study assesses the heterogeneity of impacts of the adherence predictors for an Alzheimer’s disease (AD) population.

Method: This retrospective claims analysis identified AD patients from a large US health plan that initiated oral AD therapy (rivastigmine, donepezil, galantamine, or memantine) between 1/1/2006 and 12/31/2007. Baseline characteristics were assessed during the 6-month pre-index period; medication adherence was assessed during the 1-year post-index period. UQR was estimated at 10th, 20th, …, 90th quantiles. Predictors of adherence identified from the data included age, age squared, male gender, interaction of age and gender, indicator of mental health insurance coverage, region, commercial vs. Medicare insurance, log cost, comorbidity, and formulary tier for the AD medication.

Result: Baseline medication count was positively associated with adherence (p<0.05) in the upper half of the adherence distribution. Having mental health coverage is negatively associated with adherence in all but the 10th and 20th quantiles but the impact was substantially higher in the first half of the adherence distribution. Baseline (log) cost was positively associated with adherence in the 40th and upper quantiles of the adherence distribution. For patients in the 80th and 90th quantiles, the number of baseline office visits predicted lower adherence. Compared to patients from the East, patients from the South were less likely to be adherent in the 60th and 70th quantiles.

Conclusion: The study results underscore that the predictors can have heterogeneous impacts on different parts of the adherence distributions, that is, predictors of a highly adherent subject differ from a medium- or low-adherent subject. The complete picture of the impacts of the predictors on the entire medication adherence distribution will help the decision-maker to formulate actionable policy to improve adherence.
B-3. INVESTMENT AND DISINVESTMENT OF HEALTH TECHNOLOGIES: THE NEED FOR TWO COST-EFFECTIVENESS THRESHOLDS

2:00 PM - 2:15 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH TECHNOLOGY AND OUTCOMES RESEARCH

Mike Paulden, MA., MSc., University of Toronto, Toronto, ON, Canada

Purpose: The concept of a cost-effectiveness “threshold” has been adopted either explicitly or implicitly by health care decision makers in numerous jurisdictions. This paper demonstrates that, under very weak assumptions – applicable to all real-world health systems – decision makers ought to instead adopt two cost-effectiveness thresholds.

Method: A simple model of a hypothetical health care system is used to demonstrate the appropriate threshold(s) under various assumptions concerning: 1) the size of the health care budget; 2) the extent to which technology, productivity and/or input prices change over time; 3) whether the amount of information available to decision makers changes over time; and 4) the fixity of the set of adopted health care technologies in the short term.

Result: The assumptions which must hold for two thresholds to be appropriate are that: a) there is some fixity in the set of adopted health care technologies in the short term, and b) either 1) technology, productivity and/or input prices change over time, or 2) the information available to decision makers changes over time, or both. Where these assumptions hold, one threshold ought to be used when appraising technologies with positive incremental costs (investment decisions), while a different threshold should be used when appraising technologies with negative incremental costs (disinvestment decisions). This is true regardless of the marginality of the technologies under consideration.

Conclusion: This finding has profound implications for the practice of cost-effectiveness analysis, for ongoing and future empirical research into the nature of the threshold, and for health care policy making. It gives a theoretical underpinning to observations that the ICERs of technologies disinvested at the margin differ from those of technologies adopted at the margin. It also has implications for the interpretation of ICERs, for the appropriate calculation of net benefit, and for the conduct of value of information (VOI) analysis.

B-4. COMPARATIVE EFFECTIVENESS RESEARCH AND TECHNOLOGICAL ABANDONMENT

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH TECHNOLOGY AND OUTCOMES RESEARCH

David H. Howard, PhD, Emory University, Atlanta, GA and Yu-Chu Shen, PhD, Naval Postgraduate School, Monterey, CA
Comparative Effectiveness Research and Technological Abandonment

**Purpose:** When a major study finds that a widely used medical treatment is no better than a less expensive alternative, do physicians stop using it? The COURAGE trial (NEJM 2007) found that percutaneous coronary intervention (PCI) is no better than an inexpensive regimen of medical therapy for patients with stable angina. We examine the impact of COURAGE on PCI use.

**Methods:** We developed a theoretical model of the impact of comparative effectiveness research on costs. The impact depends on: the difference in prices between comparison treatments, current practice patterns, and the impact of evidence on practice patterns. We hypothesize that physicians paid via fee-for-service will be less responsive to studies that recommend abandoning profitable treatments. We show that under these conditions, the expected value of a potential CER study on costs may be positive (i.e. cost-increasing) even if a finding for the less expensive treatment is more likely. The COURAGE trial affords an opportunity to examine how practice patterns change in response to “negative” results. We examine the impact of COURAGE on use of PCI from 2006 to 2009 using 100% patient discharge samples from hospitals in 5 large states (AZ, CA, FL, MA, NJ), Veterans Administration (VA) hospitals, and English hospitals. US community cardiologists are paid via fee-for-service. VA and English cardiologists are salaried.

**Results:** The figure shows trends in PCI volume. PCI volume in patients with stable angina declined by 19% is US community hospitals and 14% in VA hospitals from 2006 to 2007. However, many patients with stable angina continue to receive PCI as primary therapy. There was no decline in PCI volume in England, possibly reflecting lower baseline use, pent-up demand, and expansions in PCI capacity over this period.

**Conclusions:** Comparative effectiveness research can reduce costs, but savings will not be fully realized if physicians are reluctant to abandon profitable treatments. We do not find support for the hypothesis that fee-for-service medicine blunted the impact of COURAGE in the US. Increasing use of medical therapy may require switching from a procedural-based system to a more integrated approach (e.g., accountable care organizations).
B-5. A FRAMEWORK FOR MEASURING THE VALUE OF QUALITY IMPROVEMENT

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH TECHNOLOGY AND OUTCOMES RESEARCH

Michael S. Broder, MD, MSHS¹, Irina Yermilov, MD², Clifford Ko, MD², Melinda Maggard, MD, MSHS², Eunice Chang, PhD¹, Tanya G.K. Bentley, PhD¹, Dasha Cherepanov, PhD¹ and Emmett B. Keeler, PhD³, (1)Partnership for Health Analytic Research, LLC, Beverly Hills, CA, (2)UCLA Center for Surgical Outcomes and Quality, Los Angeles, CA, (3)The RAND Corporation, Santa Monica, CA

Purpose: Significant resources are allocated to quality improvement (QI), yet little is known about the costs and benefits of QI adherence. We developed a framework for measuring the value of QI activities and provide a worked example using the 2006 Healthcare Effectiveness Data and Information Set (HEDIS) measures.

Method: Our framework identifies the QI measures and setting(s) of interest and synthesizes QI cost-effectiveness data. For each measure, we: (1) quantify current compliance rates; (2) review literature and abstract CE data (incremental cost-effectiveness ratio, ICER); (3) estimate per-person steady-state cost and quality-adjusted-life-year (QALY) impacts; (4) calculate ICERs at current and full compliance levels based on calculated total costs and total QALYs; (5) perform sensitivity analyses to evaluate the impact of model assumptions on results. We applied this
framework to 18 widely used US HEDIS measures. We defined full compliance as 95% and considered two types of costs: those of providing the clinical service (e.g., giving the vaccination to a patient in the case of a vaccination-related QI measure) and those of improving QI compliance (e.g., efforts to convince patients to be vaccinated). We assumed that only QI-improvement costs varied with compliance, with these costs in the base-case increasing linearly with compliance and in sensitivity analyses increasing exponentially, decreasing exponentially, and not changing with compliance.

Result: In the worked example, the literature search for cost-effectiveness data of 18 HEDIS measures yielded 1,901 articles; 1,629 were excluded and the remaining 272 articles were reviewed. After applying the framework, we estimated that increasing HEDIS compliance to 95% improved health but increased cost, with our framework-calculated ICERs for the individual HEDIS measures ranging from $180/QALY (alcohol/drug dependence treatment) to $39,805/QALY (breast cancer screening), with a median of $9,791/QALY (glaucoma screening). Overall, optimizing HEDIS compliance to 95% with all 18 measures was estimated to cost $12.3 billion and to save approximately 6 million QALYs, resulting in a mean ICER $2,087/QALY.

Conclusion: We demonstrated the utility of our framework for quantifying value of QI programs like HEDIS, showing that improving compliance with such measures can be an efficient way to improve health. This framework can be a useful tool in quantifying and comparing the value of QI activities and health care interventions to aid decision-makers in resource allocation decisions.

B-6. HISTORICAL CONTROLS FOR MORTALITY: R.I.P

2:45 PM - 3:00 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH TECHNOLOGY AND OUTCOMES RESEARCH

Robert J. Bryg, MD and David J. Bryg, PhD, Olive View-UCLA Medical Center, Sylmar, CA

Purpose: Authors of observational studies frequently compare their results to previously published reports. Mortality is a commonly utilized hard endpoint, and the observational study frequently demonstrates improved survival compared to the selected historical control population. In this study, we sought to determine the variability in mortality rates in published clinical trials of cardiovascular interventions.

Method: After identifying large cardiovascular clinical trials which provided long term follow up and mortality rates, we calculated age and gender adjusted mortality hazard ratios in 621 clinical trial populations utilizing a competing risk model. We then identified median and 25th and 75th percentile of the mortality hazard ratios for 9 common cardiovascular disease states.

Result: On average, patients in clinical trials evaluating stable coronary artery disease (N=165 studies) had mortality that was similar to that of the population as a...
whole (HR = 0.95), but the inter quartile range (IQR) was 0.76-1.22. More profound differences in IQR were found for acute myocardial infarction (N =102) (HR = 2.98, IQR 1.78-4.08) and primary prevention studies (N = 66) (HR = 0.60, IQR 0.38-0.82). There was at least a 20% difference between the first quartile and the median value for the hazard ratio for all categories studied. In addition, between 1990 and 2010, there is a 65% reduction in mortality rates for both heart failure (N = 110) and acute myocardial infarction. If a clinically significant difference in mortality is considered to be 20% or more, the observed variation in mortality hazard ratios here is so great that one can always find a control population to provide a favorable comparison. The further back in time one searches, the easier it is to find a “suitable” control population.

**Conclusion:** Variability in age and gender adjusted mortality hazard ratios, even for similar populations, is profound. Contemporaneously obtained controls are necessary to be valid comparators. Ultimately, the use of historical controls should find its place in history and rest in peace.

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**BD1. INVITED SESSION: ETHICS AND BEHAVIORAL ECONOMICS in MEDICINE**

1:30 PM - 3:00 PM: Mon. Oct 24, 2011
Columbus Hall AB (Hyatt Regency Chicago)

**Session Chairs:**

- Peter H. Schwartz, MD, PhD
- Scott D. Halpern, MD, PhD, MBE

**Session Summary:**

1:30 PM - 1:53 PM
**BD1-1. INTEGRATING ETHICS INTO THE SCIENCE OF BEHAVIOR CHANGE**

1:53 PM - 2:15 PM
**BD1-2. ETHICAL DEFENSE OF A NUDGE TOWARDS FECAL OCCULT BLOOD TESTING FOR COLORECTAL CANCER SCREENING**

2:15 PM - 2:38 PM
**BD1-1. INTEGRATING ETHICS INTO THE SCIENCE OF BEHAVIOR CHANGE**

1:30 PM - 1:53 PM: Mon. Oct 24, 2011
Columbus Hall AB (Hyatt Regency Chicago)

Part of Session: **INVITED SESSION: ETHICS AND BEHAVIORAL ECONOMICS in MEDICINE**

Jennifer Blumenthal-Barby, Ph.D., Baylor College of Medicine, Houston, TX

**Purpose:** To articulate and defend normative guidelines for the responsible deployment of behavioral economics and behavioral psychology principles to change health decisions and behaviors.

**Method:** Systematic review of the literature to identify studies recently done and policies recently developed that use principles from behavioral economics and behavioral psychology to change health decisions and behaviors, followed by conceptual analysis to develop and defend normative guidelines.

**Result:** Motivated in part by the NIH’s designation of The Science of Behavior Change as a Roadmap Initiative, policy makers, researchers, and clinicians are turning increasingly to behavioral economics and behavioral psychology for tools to change individual and group health-related behaviors and decisions. Examples include exploiting the principle of loss aversion through incentives to get people to lose weight and engage in regular cancer screenings, exploiting the principle of the status quo to set defaults to increase HIV screening (CDC policy) and Sickle Cell Trait screening (NCAA policy), exploiting the principle of availability bias to paint vivid images in people’s minds to discourage smoking (FDA policy) and full code status for certain patients, and exploiting the power of subconscious cues to prime people to pick healthy foods in restaurants and grocery stores. No corresponding guidelines have been developed to guide the use of these methods to ensure that they are used in an ethically responsible way.

**Conclusion:** The use of behavioral economics and behavioral psychology principles to change health decisions and behaviors fall into the following main categories: incentives, defaults, salience and affect, norms, and subconscious priming. Incentives must be guided by considerations of amount, kind, and whether they will damage the physician-patient relationship. Default settings and subconscious priming must be
guided by considerations of whether it is fairly easy for people to opt-out or avoid and go their own way, and whether the default represents what is in most people’s interests from an evidence-based point of view. The use of salience and affect, and also norms, must be guided by considerations of whether what is being presented is true and accurate, and whether there is a justification for appealing to emotion instead of rational argument.

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**BD1-2. ETHICAL DEFENSE OF A NUDGE TOWARDS FECAL OCCULT BLOOD TESTING FOR COLORECTAL CANCER SCREENING**

Columbus Hall AB (Hyatt Regency Chicago)
Part of Session: **INVITED SESSION: ETHICS AND BEHAVIORAL ECONOMICS in MEDICINE**

**Peter H. Schwartz, MD, PhD**, Indiana University School of Medicine, Indianapolis, IN

**Purpose:** Two of the approved screening tests for colorectal cancer (CRC) are colonoscopy performed every ten years and fecal occult blood testing (FOBT) done annually. While FOBT is easier to perform for many patients, it is also less sensitive and specific than colonoscopy for identifying polyps or CRC. As part of a research study that is currently underway, patients view a computer-based presentation about approved CRC screening tests. Half also view a “nudge” to encourage them to undergo stool testing if they are unsure about which test to choose or are unwilling to have a colonoscopy. The justification for the nudge, consistent with behavioral economics, is to reduce procrastination due to indecision and increase the percentage of patients who get at least some screening. Pilot testing has suggested that the nudge may be effective at increasing interest in FOBT. Critics have raised the following ethical concern: The nudge may lead some patients who would have had screening colonoscopy to get FOBT instead, and some of them will be harmed if FOBT fails to identify a polyp or cancer that would have been detected by colonoscopy.

**Method:** Conceptual analysis of ethical issues raised by the use of a nudge towards FOBT, and consideration of relevant research on patient decision-making about CRC screening and in behavioral economics.

**Result:** The possibility that a nudge towards stool testing will harm some patients does not make the nudge unethical, according to widely accepted moral theories. From a Utilitarian perspective, the benefits can be expected to outweigh the harms if the nudge increases uptake of screening. From a Kantian perspective, some patients being harmed does not imply that the nudge is unethical, as long as it does not coerce or mislead individuals. At the same time, justifying the use of a nudge towards FOBT requires demonstrating improvement in outcomes or decision-making. In research studies of the impact of a nudge, the existence of possible harm should be disclosed to potential participants, even if the risk is minimal.

**Conclusion:** A nudge towards FOBT for CRC screening may be ethically acceptable
even if it can be expected to harm some patients. More generally, it can be ethical to utilize nudges towards screening tests or preventive treatments that have lower effectiveness than other approaches.

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**BD1-3. COMPARATIVE ETHICS OF FINANCIAL INCENTIVES FOR HEALTH PROMOTION**

Columbus Hall AB (Hyatt Regency Chicago)
Part of Session: **INVITED SESSION: ETHICS AND BEHAVIORAL ECONOMICS in MEDICINE**

*Scott D. Halpern, MD, PhD, MBE, University of Pennsylvania School of Medicine, Philadelphia, PA*

**Background:** The insufficient success of conventional strategies to promote healthy behaviors suggests the need for novel approaches. Two broad motivations exist for such innovation. First, considerable reductions in productivity and increases in avoidable healthcare costs represent substantial externalities attributable to the unhealthy choices people make for themselves. At least as important are what have been called internalities – in this case, peoples' tendencies to make decisions that are easiest or most gratifying for in the present (e.g., to eat chocolate cake) despite the substantial costs these decisions carry for their future selves. The externalities of present choices provide a rationale for intervention based on social justice; the internalities of present choices provide a rationale for intervention based on beneficence.

**Approach:** This presentation will analyze the role of health incentives for promoting healthier behaviors – specifically, the use of money to reward (or penalize) individuals or groups for adopting (or failing to adopt) healthier behaviors. I will focus on the theme of comparative ethics – the idea that although all approaches to using or not using incentives for health promotion have ethical pros and cons, on balance some strategies have greater propriety than others.

**Conclusions:** The presentation will defend three key conclusions. First, incentive programs are not created equally, no more so in their ethics than in their effectiveness, and so judgments of propriety require both specificity and comparative thinking. Second, considering the concerns with incentive programs requires thinking broadly, comparing these concerns with those we might levy against either not intervening, or intervening in different, non-incentive-based ways. Third, a comparative ethics approach suggests the need for empiricism – a view that the most compelling concerns we might levy against incentive programs rest on empirically testable, but as yet untested, assumptions about such programs' unintended consequences.
BD1-4. ETHICS AND BEHAVIORAL ECONOMICS IN MEDICINE DISCUSSION

2:38 PM - 3:00 PM: Mon. Oct 24, 2011
Columbus Hall AB (Hyatt Regency Chicago)
Part of Session: INVITED SESSION: ETHICS AND BEHAVIORAL ECONOMICS in MEDICINE

George Loewenstein, PhD, Carnegie Mellon University, Pittsburgh, PA

Discussion/response to the foregoing three presentations.

C. MODELING AND SIMULATION METHODS

1:30 PM - 3:00 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Session Chairs:

• James Stahl, MD, CM, MPH
• Margaret L. Brandeau, PhD

Session Summary:

1:30 PM - 1:45 PM
C-1. DEVELOPING A COMPLEX AGENT NETWORK MODEL TO PREDICT HIV AND HCV INCIDENCE IN CANADA

1:45 PM - 2:00 PM
C-2. GETTING THE BEST OF BOTH WORLDS: AN APPROACH FOR MAXIMISING INTERNAL AND EXTERNAL VALIDITY IN COST-EFFECTIVENESS STUDIES

2:00 PM - 2:15 PM
C-3. ANALYTICAL SOLUTION METHODS FOR CONTINUOUS-TIME MARKOV AND SEMI-MARKOV MODELS
C-1. DEVELOPING A COMPLEX AGENT NETWORK MODEL TO PREDICT HIV AND HCV INCIDENCE IN CANADA

1:30 PM - 1:45 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: MODELING AND SIMULATION METHODS

William W. L. Wong, Ph.D.\(^1\), Hla-Hla Thein, MD, MPH, PhD\(^2\), Ahmed M. Bayoumi, MD, MSc\(^3\) and Murray D. Krahn, MD, MSc\(^1\), (1)University of Toronto, Toronto, ON, Canada, (2)Dalla Lana School of Public Health, Toronto, ON, Canada, (3)Centre for Research on Inner City Health, the Keenan Research Centre in the Li Ka Shing Knowledge Institute, Toronto, ON, Canada

Purpose: Population contact networks, such as sexual and drug injection networks, play an important role in the dynamics of Human Immunodeficiency Virus (HIV) and hepatitis C virus (HCV) transmission. We built a complex network model that includes heterosexual, homosexual men, and drug injection networks to provide better understanding of the dynamics of HIV and HCV transmission. This network model facilitates the forecast of HIV and HCV epidemic growth, and thus enhances the accuracy of future cost-effectiveness analyses for HIV and HCV.

Method: By combining multi-agent systems and complex networks, we developed a complex agent network model that accommodates differential selectivity, behavior, and network properties to explain the HIV and HCV epidemic. In our model, agents represent individuals who can have interactions with other individuals. We simulated the entire Canadian population, stratified by age groups, sex, sexual orientation, and immigrant status. Each individual has his/her own injection and sexual behavior.
Drug injection behavior was characterized by the injection frequency, and the rate of sharing injecting equipment. Sexual behavior was characterized by sexual activity rate, condom usage rate, the number of sexual partners, and the type of partnership (casual or regular). Heterosexual networks, homosexual men networks, and injection networks were created to describe the contact patterns between individual. We estimated parameters from literature-derived estimates of Canadian demographic, epidemiological, sexual and injection behavior data. Historical Canadian HIV and HCV data were used for validation.

**Result:** The simulated number of new HIV and HCV infections were compared with the historical reported cases in Canada. Our initial results showed a similar trend to the reported cases in Canada. In the next 10 years, our model projected that a total of 41,900 individuals would be newly infected with HIV, of whom 30.8% were infected through the heterosexual contact, 59.2% through homosexual contact, and 10.0% through sharing of injection drug paraphernalia. The model also projected that 85,300 individuals would be newly infected with HCV through the drug injection network in the next 10 years.

**Conclusion:** Our network model showed good calibration between historical Canadian HIV and HCV data and the simulation results. This complex network model reflects dynamics of HIV and HCV transmission, which enables forecasting of the epidemiology of HIV and HCV for policy-level decision making in Canada.

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**C-2. GETTING THE BEST OF BOTH WORLDS: AN APPROACH FOR MAXIMISING INTERNAL AND EXTERNAL VALIDITY IN COST-EFFECTIVENESS STUDIES**

1:45 PM - 2:00 PM: Mon. Oct 24, 2011  
Columbus Hall C-F (Hyatt Regency Chicago)  
Part of Session: **MODELING AND SIMULATION METHODS**

**Jasjeet S. Sekhon, PhD, UC-Berkeley, Berkeley, CA, Erin Hartman, MA, University of California, Berkeley, CA and Richard Grieve, PhD, London School of Hygiene and Tropical Medicine, London, United Kingdom**

**Purpose:** Cost-effectiveness analyses (CEA) may use RCTs to maximise internal validity. However, when RCTs include patients and centres atypical of those in routine clinical practice, CEA results may be subject to sample selection bias. To reduce this bias, observational data can be used to reweight the trial-based estimates. We present an approach to assess the assumptions behind any reweighting strategy, illustrated with a case study of high policy-relevance.

**Method:** We decompose sample selection bias into observable or unobservable differences between the RCT and the setting of interest. We consider alternative ways of reweighting the RCT estimates, to the population’s characteristics. The first estimation strategy, reweights according to Inverse Probability of Treatment Weighting (IPW), where ‘treatment’ is inclusion in the RCT. The second strategy uses maximum entropy (MaxEnt) weighting along with matching. Either approach makes
the identifying assumption that selection into the RCT is conditional on observable characteristics. We consider this critical underlying assumption with novel placebo tests. These test the non-equivalence of reweighted outcomes following treatment in the RCT, versus outcomes after treatment in the population. Passing these tests implies that the identifying assumption holds, and there is sufficient power to detect outcome differences across settings. We consider this approach in a UK CEA of Pulmonary Artery Catherization (PAC) using an RCT (n=1,014), and observational data on PAC use in routine practice (n=1,000). Across both settings, 40 baseline covariates were identically recorded. Differences across settings were reported, for example in the proportion admitted to non-teaching hospitals (RCT: 80%; population: 60%). We used IPW and MaxEnt to reweight the RCT estimates. We report cost-effectiveness overall, and for subgroups defined a priori.

**Result:** The overall incremental net benefit (INB) of PAC from the RCT was -£7,900 (95% CI from -£18,500 to £2,600), the corresponding estimates reweighted for the general population were, -£10,000 (-£18,500 to £2000) [IPW] and £1,500 (-£6,700 to £9,900) [MaxEnt]. For non-teaching hospitals, the INBs were £900 (-£12,100 to £14,000) [RCT], £200 (-£9,900 to £10,300) [IPW] and £18,800 (£8,400 to £29,200) [MaxEnt]. IPW failed placebo tests both overall and for the non-teaching hospital subgroup, whereas MaxEnt passed the corresponding tests.

**Conclusion:** This approach can help maximise the external validity of RCT-based CEA. The placebo tests presented are useful for choosing amongst competing weighting strategies.

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**C-3. ANALYTICAL SOLUTION METHODS FOR CONTINUOUS-TIME MARKOV AND SEMI-MARKOV MODELS**

2:00 PM - 2:15 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: MODELING AND SIMULATION METHODS

*Joost van Rosmalen, PhD*, Erasmus MC, University Medical Center, Rotterdam, Netherlands

**Purpose:** To show how continuous-time Markov and semi-Markov models can be analyzed without simulation, based on matrix algebra and stochastic process methods.

**Method:** Markov and semi-Markov decision models are widely used for cost-effectiveness analysis in health-economic evaluation. These models are often evaluated in discrete time using cohort analysis or in continuous time using microsimulation. However, both approaches have limitations. Cohort analysis is based on the assumption that at most 1 event can occur per cycle and requires ad-hoc methods to avoid biased cost-effectiveness estimates. Microsimulation introduces simulation error and can be computationally intensive, especially when used for model calibration and probabilistic sensitivity analysis. We use matrix algebra and stochastic process methods to derive analytical solutions for continuous-time Markov models.
We also show how semi-Markov models can be approximated by Markov models, so that semi-Markov models can also be analyzed without microsimulation.

**Result:** Using Kolmogorov's differential equations, we find analytical solutions for the expected distribution of patients over the health states in Markov chain models, and the expected time spent in each state. These mathematical results enable us to analytically calculate the expected costs and health effects of continuous-time Markov chain models. This method can be interpreted as a continuous-time version of the fundamental matrix solution. This method can also be used to account for age-specific transition rates and discounting, which was not possible using the original fundamental matrix solution. Finally, we show how the concept of tunnel states can be generalized so that semi-Markov models (i.e., with any type of sojourn time distribution) can be approximated by Markov models with any degree of accuracy. Computational tests confirm that this approach is feasible; it is possible to compute the costs and health effects in continuous-time Markov models with hundreds of states within a few seconds.

**Conclusion:** Continuous-time Markov and semi-Markov models are a versatile tool for estimating the health and economic effects of medical interventions. Currently, these models are almost always evaluated using microsimulation. However, analytical solution methods exist and can easily be implemented. Analytical solutions can simplify the optimization methods used for model calibration and can reduce the computation time needed for probabilistic sensitivity analyses.

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**C-4. TRANSFORMATION OF TRANSITION RATES AND PROBABILITIES IN DISCRETE-TIME MARKOV CHAINS: WHAT ABOUT COMPETING RISKS?**

Columbus Hall C-F (Hyatt Regency Chicago)  
Part of Session: Modeling and Simulation Methods

**Jagpreet Chhatwal, PhD, University of Pittsburgh, Graduate School of Public Health, Pittsburgh, PA and Elamin H. Elbasha, Merck Research Laboratories, North Wales, PA**

**Purpose:** The widely used formula \( \hat{\alpha}_i = 1 - (1-p_i)^{s/t} \) for converting a probability \( p_i \) over time interval \( t \) into a transition probability \( \hat{\alpha}_i \) for a Markov model with cycle length \( s \) ignores competing risks. We demonstrate anomalies with this approach and derive formulas that take into account the dynamics of competing risks and compute the bias resulting from using the traditional approach in a liver disease Markov model.

**Methods:** The three-state model with competing risks consists of patients starting at decompensated-cirrhosis (DeCirr), and moving to either hepatocellular carcinoma (HCC) or "Death"—competing risk (Figure 1). Using the relationship between the transition probability and rate matrices, we derived formulas to convert \( t \)-interval probabilities into transition probabilities for the model with a fixed cycle length \( s \). Setting \( s = 1/52.18 \) (1 week) and \( t=1 \) (1 year), and assuming specific values for inputs (Figure 1a), we estimated the cumulative incidence of HCC and "Death", total
discounted (at an annual rate of 0.03) cost and quality-adjusted life years (QALYs) using the corrected formula and the traditional approach.

**Results:** The formulas for converting $t$-interval probabilities into cycle-length $s$ transition probabilities are shown in Figure 1b. The "uncorrected" approach gave $\hat{a}_1=0.0013$, $\hat{a}_2=0.0029$, and $\hat{a}_3=0.0106$, whereas the "corrected" approach yielded $\tilde{a}_1=0.0019$, $\tilde{a}_2=0.0025$, and $\tilde{a}_3=0.0106$. The $n$-step ($n=52.18$) transition probability matrix (TPM) of weekly cycle-length did not yield back the original annual TPM with the "uncorrected" approach. The estimated total cost using the "uncorrected" and "corrected" approach were $45,870 and $53,594, respectively (bias= – 17%), and QALYs were 2.69 and 2.68, respectively (bias=1%) (Table 1).

**Conclusions:** The traditional approach of converting interval probabilities into different cycle lengths ignores competing risk states and results in biased estimates of disease outcomes, cost and QALYs, which can lead to different conclusions. Our method accounts for competing risk and can be generalized to other Markov model structures.

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**C-5. HALF-CYCLE CORRECTION AND SIMPSON’S METHOD TESTED IN REAL HEALTH ECONOMIC MODELS – DOES IT MATTER WHICH METHOD WE USE?**

Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: MODELING AND SIMULATION METHODS

**Torbjørn Wisløff, M.Sc.**¹, Gunhild Hagen, MPhil¹ and Kim Rand-Hendriksen, Cand.Psychol², (1)Norwegian Knowledge Centre for the Health Services, Oslo, Norway, (2)Akershus University Hospital, Lørenskog, Norway

**Purpose:** To test the practical impact of replacing half-cycle correction with Simpson’s method in Markov models of cost-effectiveness.

**Method:** Markov models are frequently used in cost-effectiveness modeling, particularly when modeling chronic diseases. In Markov models, time is handled as a series of discrete cycles, where events of interest are counted either at the beginning or end of each cycle. In real life, these events can occur at any time within each cycle, hence, this is best represented as a continuous probability function. This means we are actually interested in the integral of a continuous function even though events are counted either at the start or end of the cycles. Uncorrected, Markov models systematically overestimate (events at cycle start) or underestimate (events at cycle end) event frequency. The most common adjustment in health economic modeling is half-cycle correction; shifting cycle estimates by half a period. While this method reduces model bias, it has been criticized both at the SMDM meeting in 2009, and in an MDM paper for being a poor approximation to the integration problem. Opponents to half-cycle correction suggest using Simpson’s method, an old mathematical approximation to estimating the integral of a continuous line represented by discrete points. We have used three recently developed health economic models to test whether replacing half-cycle correction with Simpson’s method makes a practical difference. All models are Markov models with several events and health states modeling cost-utility in a lifetime perspective. We ran the three models for a number of different scenarios and interventions.

**Result:** Results varied from -17.2% to 0.19% in terms of incremental costs for Simpson’s method compared to half-cycle correction. In terms of differences in quality-adjusted life-years, results varied between -0.75% and 0.67%. Differences in net health benefit varied between -0.06% and 0.21%, while differences in incremental net health benefit varied between -1.56% and 12.7%. INHB did not change from positive to negative or vice versa in any comparisons.

**Conclusion:** In our analyses, cost differences varied substantially between half-cycle correction and Simpson’s method. In terms of quality-adjusted life-years, differences were small in our models. Conclusions did not change in any of our analyses, however changes in incremental net health benefit was not negligible, suggesting that conclusions could be altered under specific circumstances.

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**C-6. ACCOUNTING FOR UNCERTAINTY IN THE AFFECTED POPULATION USED IN VALUE OF INFORMATION ANALYSES: AN APPLICATION IN ADVANCED BILIARY TRACT CANCER**

2:45 PM - 3:00 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Purpose: To demonstrate the impact and utility of accounting for technology diffusion and uncertainty in calculating the affected population for value of information analysis through a case study in advanced biliary tract cancer.

Method: We modified a previously published decision-analytic model to estimate the expected value of perfect information (EVPI) for two treatment strategies in advanced biliary tract cancer: 1) gemcitabine and cisplatin 2) standard care, with all patients receiving gemcitabine alone. The model utilized standard methods to calculate the per-patient EVPI, but incorporated a stochastic method for calculating the population EVPI, representing the uncertainty in the estimated technology lifetime, disease incidence, and technology diffusion rate. Model parameters and uncertainty ranges were derived from the ABC-02 Trial, published literature, and government sources. We used SEER incidence estimates, a 5 to 15% annual diffusion rate, a 5 to 15-year range for technology use, and a willingness-to-pay threshold of $150,000/QALY. We compared three population EVPI estimates, 1) instant technology diffusion (base-case), 2) gradual deterministic diffusion, and 3) gradual diffusion with uncertainty in affected population parameters.

Result: The gemcitabine+cisplatin strategy produced greater net-benefit than standard care in 89% of simulations and the average consequence of selecting the wrong strategy was $7,900. In the base case, the population EVPI for an affected population of 67,000 over a 10-year horizon was $58.2 M. Incorporating a gradual deterministic rate of diffusion changed the estimate to $29.6 M. Finally, incorporating uncertainty provided a credible interval to the population EVPI ($29.6 M; CI: $11.1 to $48.8 M).

Conclusion: This case study demonstrates the potential impact and utility of incorporating a stochastic method for calculating the affected population in value of research analyses relative to the current deterministic standard and its assumptions regarding technology diffusion. This approach builds on standard methods by representing real world uncertainty about the technology lifetime, incidence estimates, and rate of technology diffusion. This approach may be particularly useful when different study designs may lead to different rates of technology diffusion or when there is substantial variation in annual incidence estimates over the lifetime of the technology (e.g. when changing screening/diagnostic practices may lead to variable disease incidence). These methods can also be applied to other value of information analyses (e.g. value of sample information), and can increase the informational yield of such estimations.
J. Jaime Caro, MDCM, FRCPC, FACP, United BioSource Corporation, Lexington, MA

This ISPOR-SMDM Joint Modeling Good Research Practices Task Force will provide a guidance for: a) delineating the approach and design of modeling studies and the identification and preparation of required data, b) selecting a modeling technique, c) implementing and validating the model, d) addressing uncertainty around model results, e) reporting the modeling study results to assure transparency, and f) using model-based study results to inform decision-making. Since there are multiple issues to be addressed by this Modeling Task Force, and to assure each issue is adequately addressed including defining preferred practices for different modeling techniques.

The goal is to ensure that good research practices on modeling techniques remain useful for all current modeling techniques as well as to foster the use of model-based results to inform health care decisions, a Modeling Good Research Practices Task Force was created to address (1) advances in modeling, (2) approaches to evaluating variability in models, and (3) transparency in reporting of models.
Session Summary:

4:30 PM - 4:45 PM

**D-1. TOWARD MINIMUM STANDARDS FOR THE CERTIFICATION OF PATIENT DECISION AIDS: A CORRELATION ANALYSIS AND MODIFIED DELPHI CONSENSUS PROCESS**

4:45 PM - 5:00 PM

**D-2. WHO IS GUIDING DECISIONS ABOUT WHETHER TO PERFORM PEDIATRIC GASTRIC FUNDOPLICATION?**

5:00 PM - 5:15 PM

**D-3. BELIEFS ABOUT COMMUNICATING WITH A PHYSICIAN ABOUT MEDICAL DECISIONS: DISTINGUISHING BETWEEN EXCHANGING INFORMATION AND MAKING A CHOICE**

5:15 PM - 5:30 PM

**D-4. IMPLEMENTING SHARED DECISION MAKING IN A MULTICULTURAL PRACTICE: A COLLABORATIVE PRIMARY CARE-HEALTH EDUCATOR APPROACH**

5:30 PM - 5:45 PM

**D-5. FACILITATORS AND BARRIERS TO IMPLEMENTING SHARED DECISION MAKING IN A PRIMARY CARE DEMONSTRATION**

5:45 PM - 6:00 PM

**D-6. EVALUATING ASSOCIATIONS BETWEEN PATIENT PREFERENCES FOR COLORECTAL CANCER SCREENING TESTS AND THE CONTENT OF PATIENT-PHYSICIAN DISCUSSIONS**

Abstracts:
D-1. TOWARD MINIMUM STANDARDS FOR THE CERTIFICATION OF PATIENT DECISION AIDS: A CORRELATION ANALYSIS AND MODIFIED DELPHI CONSENSUS PROCESS

4:30 PM - 4:45 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)

Part of Session: SHARED DECISION MAKING AND PATIENT-PHYSICIAN COMMUNICATION

Natalie Joseph-Williams1, Robert Newcombe1, Mary Politi, Ph.D.2, Marie Anne Durand1, Stephanie Sivell, BA, MPhil1, Dawn Stacey, PhD3, Annette M. O'Connor, PhD4, Robert J. Volk, PhD5, Adrian Edwards, MB, PhD1, Carol Bennett, MSc6, Michael Pignone, MD, MPH7, Richard Thomson, MD8 and Glyn Elwyn, BA, MB, BCh, MSc, PhD, FRCGP1, (1)Cardiff University, Cardiff, United Kingdom, (2)Washington University in St. Louis, St. Louis, MO, (3)Ottawa Health Research Institute, Ottawa, ON, Canada, (4)University of Ottawa, Ottawa, ON, Canada, (5)The University of Texas MD Anderson Cancer Center, Houston, TX, (6)Ottawa Hospital Research Institute, Ottawa, ON, Canada, (7)University of North Carolina at Chapel Hill, Chapel Hill, NC, (8)University of Newcastle upon Tyne, Newcastle upon Tyne, United Kingdom

Purpose: IPDAS developed an instrument (IPDASi) to assess the quality of patient decision aids (PDAs). There have been calls in the US for these tools to be certified. The aims were to: (1) correlate IPDASi scores with outcome measurements in RCTs (included in Cochrane systematic review of PDAs); (2) conduct a Delphi consensus process for expert agreement on minimum standards for PDAs, based on IPDASi items.

Method: Aim 1: The PDAs were included if the RCT measured at least one of the following outcomes: knowledge, accurate risk perceptions, preference congruence with choice (attributes of decision), participation in decision-making or satisfaction with decision-making process (attributes of decision process). IPDASi quality scores were produced (two independent raters per PDA). Correlation analyses were conducted between adjusted mean global IPDASi scores and effect sizes. Aim 2: Two-stage Delphi voting process considered the inclusion of IPDASi items as minimum standards. Item mean scores and qualitative comments were analysed, followed by expert multidisciplinary group discussion.

Result: Aim 1: 31 PDAs were included in the sample, 26 were accessible for evaluation. A significant correlation was found between quality scores and accurate patient risk perceptions (rho = 0.8, p = 0.02). No other correlations were significant, but the positive direction of all but one outcome correlation provides support for the view that PDA quality scores, as judged by IPDASi, is associated with better outcomes in RCTs. Aim 2: 101 people voted in round 1; 87/101 (88%) voted in round 2. The 47 items in IPDASi v3.0 were reduced to 45 items (3 items combined) and were placed in three categories, namely: qualifying criteria (6 items); certification criteria (11 items) and quality criteria (28 items). The following operationalisation was
adopted: 1) qualifying criteria would be assessed on a binary (yes or no) scale; to qualify, i.e. be considered for certification, tools should meet all these 6 criteria; 2) certification criteria would be scored on a 4-point Likert (agreement) scale and tools should score positively to meet a certification threshold (minimum standards); 3) quality criteria would be scored on a 4 point Likert (agreement) scale.

**Conclusion:** To ensure ‘fitness for use’ and for the protection of patients, this study provides minimum standards criteria for PDAs, standards that need to be tested and ratified.

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**D-2. WHO IS GUIDING DECISIONS ABOUT WHETHER TO PERFORM PEDIATRIC GASTRIC FUNDOPPLICATION?**

4:45 PM - 5:00 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: **SHARED DECISION MAKING AND PATIENT-PHYSICIAN COMMUNICATION**

David Fox, MD¹, E. Campagna, MS², J. Barnard, MA², J. Bruny³, D. Partrick³ and A. Kempe, MD, MPH⁴, (1)University of Colorado, Denver, Aurora, CO, (2)Children's Outcomes Research Program, Denver, CO, (3)Children's Hospital, Denver, Denver, CO, (4)Children's Outcome Research Program, Denver, CO

**Purpose:** The decision about whether to perform or not perform a gastric fundoplication has enormous clinical and cost implications. Children who are having a gastrostomy procedure are often considered candidates for fundoplication, yet there is no clinical consensus as to who needs a fundoplication. Our purpose was to examine subjective and objective factors influencing the decision of pediatric surgeons to perform or not perform a gastric fundoplication in children undergoing a gastrostomy procedure.

**Method:** A pre-operative self-administered 34 item questionnaire on objective and subjective decisional influences was completed by the attending pediatric surgeon on two groups of patients: those having a gastrostomy with a fundoplication, and those having a gastrostomy without a fundoplication. All six surgeons who perform fundoplication at a major children’s hospital participated.

**Result:** From July 1, 2009 through June 30, 2010, 169 patients met eligibility criteria and 161 surveys (95%) were completed. The mean age of the patients was 2.9 years (median=0.8 years), 59% were male, 57% had Medicaid, and 62% were neurologically impaired. Of the cohort, 66% were referred as an inpatient, and >50% had at least two pediatric subspecialists involved in their care. For 86% of cases the surgeons reported that the input of another physician had somewhat or a lot of influence on their decision about fundoplication. Specifically, they mentioned the input of several pediatric specialists: Neonatologists (24%), Hospitalists (25%), Pulmonologists (18%), Primary Care Physicians (16%), and Gastroenterologists (9%). The opinion of parents contributed somewhat or a lot to the decision 72% of the time. Among the 89% of the cohort that had an upper GI contrast study, surgeons
stated that the results had a lot of influence 45% of the time. Multivariable logistic regression showed the following factors were associated with the patient receiving a fundoplication, involvement of a pulmonologist (OR 1.7, 95% CI: 1.1-2.6), neonatologist (OR 1.9, 95% CI: 1.3-2.9) and PCP (OR 0.6, 95% CI: 0.4-0.9).

**Conclusion:** Most decisions to perform a fundoplication occur in the inpatient setting and are impacted by a variety of objective and subjective factors, most notably the opinions of other physicians. The high level of input that pediatric subspecialists have on the decision and the patterns of referral to the surgeons have important implications for the development and implementation of a shared decision making tool.

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**D-3. BELIEFS ABOUT Communicating WITH A PHYSICIAN ABOUT MEDICAL DECISIONS: DISTINGUISHING BETWEEN EXCHANGING INFORMATION AND MAKING A CHOICE**

5:00 PM - 5:15 PM: Mon. Oct 24, 2011  
Grand Ballroom EF (Hyatt Regency Chicago)  
Part of Session: **SHARED DECISION MAKING AND PATIENT-PHYSICIAN COMMUNICATION**

Dominick Frosch, PhD\(^1\), Caroline Tietbohl, BA\(^1\), France Legare, MD, PhD, CCFP, F\(^2\) and Glyn Elwyn, MD, PhD\(^3\), (1)Palo Alto Medical Foundation Research Institute, Palo Alto, CA, (2)Laval University, Quebec, QC, Canada, (3)Cardiff University, Cardiff, United Kingdom

**Purpose:** Considerable scholarship has focused on physician communication skills for shared decision making, but little is known about why patients are sometimes reluctant to engage in a collaborative dialogue with physicians.

**Method:** An online panel of respondents (N=1,340; Mean age = 56.5, SD=9.9) read a vignette describing a treatment decision making scenario focused on moderate coronary artery disease. The vignette emphasized that three treatment options exist with equivalent long-term mortality outcomes. Respondents answered theory-based questions, building on Fishbein’s Integrative Model, focused on three key communication behaviors that facilitate shared decision making: (1) asking questions, (2) discussing preferences and (3) disagreeing with a recommendation. The first two are necessary for exchanging information. We asked about “disagreeing with a recommendation” as a potentially necessary assertive behavior if a physician’s recommendation is incongruent with patient preferences. Questions focused on respondents’ intention to engage in these behaviors in response to the scenario, their beliefs about the likely outcomes of doing so, and who would approve or disapprove of these actions. Data were analyzed with analysis of variance.

**Result:** Respondents had significantly lower intentions to disagree with a recommendation not congruent with their preferences (M=3.1, SD=1.5) than to ask questions (M=6.5, SD=.95) or discuss preferences (M=6.5, SD=.92; p<.0001). Intentions to disagree were highest among those indicating a preference for
autonomous decision making (p<.0001). Intentions to ask questions (p<.003) and discuss preferences (p<.0001) were highest among those indicating a preference for shared decision making. Disagreeing was perceived as more likely to result in the physician viewing the patient as “difficult” (p<.0001), harming the therapeutic relationship (p<.0001), and lowering the likelihood of getting the “treatment that results in outcomes I prefer” (p<.0001). Respondents indicated that medical staff would be less likely to approve of asking questions (p<.0001), discussing preferences (p<.0001) or disagreeing with a physician (p<.0001) than spouses, family members or friends.

**Conclusion:** Results from this survey indicate that patients have little difficulty envisioning exchanging information with their physicians, but are much less likely to envision disagreeing with a preference incongruent recommendation. Paradoxically, respondents felt that disagreeing would lower the likelihood of getting their preferred treatment. Combined with the perception that medical staff are less supportive of active patient communication, these results provide evidence of considerable medical-cultural barriers to shared decision making.

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**D-4. IMPLEMENTING SHARED DECISION MAKING IN A MULTICULTURAL PRACTICE: A COLLABORATIVE PRIMARY CARE-HEALTH EDUCATOR APPROACH**

Grand Ballroom EF (Hyatt Regency Chicago)  
Part of Session: SHARED DECISION MAKING AND PATIENT-PHYSICIAN COMMUNICATION

Ruby Spicer¹, Mary Bitterauf¹, Caryn Radziucz², Catherine Fredricks², Jennifer Aronson², Neil Korsen¹ and Kathleen Fairfield², (1)MaineHealth, Portland, ME, (2)Maine Medical Center, Portland, ME

**Purpose:** It is widely recognized that use of decision aids (DAs) and decision support in clinical practice results in greater knowledge, participation in decision making, and decision comfort for patients. To increase patient engagement and effective self-care at MMC Medical Clinic, which serves a vulnerable multicultural, multilingual population (49% Medicaid, 9% Medicare, 16% dual eligible, 16% free care; >30% refugee/ESL), we implemented a collaborative shared decision making (SDM) program.

**Method:** Primary care providers partnered with an onsite Learning Resource Center (LRC) health educator to order DVD-based decision aids (DAs) in an effort to: (1) inform patients regarding screening, treatment, and self-care options for selected conditions; and (2) create a structured SDM process to elicit patient values and preferences regarding these options. Following referral of patients to the LRC, the SDM-trained health educator provided one-on-one encounters for DA viewing and decision support regarding diabetes, prostate and colorectal cancer screening, back pain, and depression. The SDM process included identification of eligible patients; creation of an electronic DA order enabling the health educator to contact consenting
patients; an approximately one-hour DA viewing consult with the educator and
sometimes an interpreter; completion of DA pretests and posttests; and
documentation of the LRC encounter. Pretest and posttest data were gathered
beginning in July 2010, and were used to identify key follow-up issues and assess
patient satisfaction with the SDM process.

Result:

<table>
<thead>
<tr>
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<th>MMC Clinic (n=45 patients)</th>
<th>All SDM pilot practices (n=154 patients)</th>
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<tbody>
<tr>
<td>Less than HS education</td>
<td>27%</td>
<td>12%</td>
</tr>
<tr>
<td>Watched all of DA DVD</td>
<td>87%</td>
<td>62%</td>
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<tr>
<td>DA perceived as “very/extremely useful” for clarifying values</td>
<td>73%</td>
<td>54%</td>
</tr>
<tr>
<td>Change in certainty about health care decisions: before and after SDM</td>
<td>18% → 59%</td>
<td>26% → 47%</td>
</tr>
<tr>
<td>“Very/extremely important” for providers to give DAs to patients</td>
<td>87%</td>
<td>64%</td>
</tr>
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</table>

Conclusion: Our experience shows that primary care providers, health educators,
and interpreters can work together to engage “hard to reach” multicultural, multilingual
populations in shared decision making. Despite challenges to integrating SDM into
routine clinical practice including systematic identification of patients to use DAs,
efficient tracking and sharing of SDM process data, and limited provider time for
quality improvement activities, we recommend that providers who care for
multicultural populations adopt innovative SDM strategies to ensure that patients’
values and preferences are central to health care decision making.

D-5. FACILITATORS AND BARRIERS TO IMPLEMENTING SHARED DECISION MAKING IN A PRIMARY CARE DEMONSTRATION

5:30 PM - 5:45 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: SHARED DECISION MAKING AND PATIENT-PHYSICIAN COMMUNICATION

Mark W. Friedberg, MD, MPP¹, Kristin Van Busum, MPH¹, Richard Wexler, MD²
and Eric C. Schneider, MD, MSc¹, (1)RAND Corporation, Boston, MA, (2)The Foundation for Informed Medical Decision Making, Boston, MA

Purpose: To identify facilitators and barriers to implementing shared decision making (SDM) in primary care.
Method: We conducted 23 semi-structured interviews with leaders and clinicians from nine primary care practice sites participating in a current SDM implementation demonstration. Using a guide developed with input from demonstration conveners, interviewers queried respondents about their sites’ processes for integrating decision aids (DAs) into ongoing clinical operations, focusing on facilitators and barriers to operational tasks such as engaging clinicians, distributing DAs, and tracking patients through subsequent steps of SDM. Researchers inductively analyzed interview responses for recurrent themes.

Result: Facilitators. All respondents reported that SDM was consistent with their sites’ professional cultures, and most identified “champions” who engaged other clinicians in DA use. To facilitate DA distribution, some sites developed protocols that empowered non-physician staff: “The most successful sites…developed workflows that take the physician out of making the decision [about DA distribution].” To identify DA-eligible patients, these sites leveraged existing data (e.g., patient demographic characteristics, for screening decisions) and clinical processes (e.g., specialist referrals, for surgical decisions). When identifying DA-eligible patients required case-by-case physician judgment, single-click DA order entry and DA viewing by physicians facilitated greater distribution. Barriers. Physicians’ lack of prior SDM training was a barrier to participation: “Physicians felt that they were already doing shared decision making [before introducing DAs].” Physician DA ordering, though sometimes necessary for patient identification, limited distribution in multiple sites: “As long as you have the physicians in the middle of [DA ordering] they have too many other things on their plate to reliably ensure this would happen every time…in a 10-15 minute appointment.” Medical record systems (paper or electronic) posed significant barriers to tracking patients through the SDM process. For example, nearly all sites’ records lacked indicators for which patients had received DAs, mechanisms for communicating patient-reported values and preferences, and registry functions to follow patients’ progress towards their decisions (e.g., to determine whether patients had timely post-DA decision making conversations with providers).

Conclusion: Even among highly motivated demonstration sites, there are significant educational, operational, and informatics challenges to implementing SDM in primary care. Empowering non-physicians may enhance distribution reliability for some DAs. However, improving post-DA follow-through may require better mechanisms for tracking patients and facilitating information exchange between patients and clinicians.

D-6. EVALUATING ASSOCIATIONS BETWEEN PATIENT PREFERENCES FOR COLORECTAL CANCER SCREENING TESTS AND THE CONTENT OF PATIENT-PHYSICIAN DISCUSSIONS

5:45 PM - 6:00 PM: Mon. Oct 24, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: SHARED DECISION MAKING AND PATIENT-PHYSICIAN COMMUNICATION
Sarah E. Lillie, MPH, Sarah T. Hawley, PhD, MPH, Nancy Oja-Tebbe, BS, Tracy Wunderlich, MA and Jennifer Elston Lafata, PhD, (1)University of Michigan, Ann Arbor, MI, (2)University of Michigan, Ann Arbor VA Health System, Ann Arbor, MI, (3)Henry Ford Health System, Detroit, MI, (4)Virginia Commonwealth University, Richmond, VA

Purpose: 1) to explore variations in patient-physician conversations about colorectal cancer screening modality preferences and screening modality recommendation by their physician during an annual well visit; 2) to determine whether patients’ intent to follow up on a colorectal cancer screening recommendation is associated with patients’ preferred screening modality and physician recommendations.

Method: Eligible patients were aged 50-80, insured, and due for colorectal cancer screening at a scheduled well visit with an internal or family medicine physician practicing in Southeast Michigan. Study enrollment included a pre- and post-visit interview and office visit audio-recording. Enrolled patients’ (N=415) colorectal cancer screening modality preferences were identified using attribute rankings in the pre-visit interview. Self-reported intent to follow up on screening recommendation was evaluated with a post-visit interview (N=361).

Result: At baseline 48% of patients indicated a preference for colonoscopy, 30% for FOBT, and 22% had no clear preference. Most (69%) expressed a preference for a shared decision-making approach to colorectal cancer screening. However during the visit only 14% of patients expressed a clear colorectal cancer screening test preference to their physician, and this preference was generally for FOBT (70% of those who expressed a preference). In cases where patients expressed preferences for either FOBT or colonoscopy, these preferences were acknowledged by the physician 93% of the time. The most recommended test by physicians was colonoscopy; it was discussed in all visits, and recommended in 99% of visits. A test other than colonoscopy was mentioned in 47% of visits and recommended in 30% of visits; this other test was most often FOBT. When multiple screening modalities were discussed during the appointment, physicians typically (70% of these visits) offered the patients a choice among them. Following their appointment, an overwhelming majority (95%) of patients reported they were likely to follow up on the screening recommendation. Patient modality preferences and physician modality recommendations were not associated with the intent to be screened, possibly due to a ceiling effect.

Conclusion: Patients continue to have preferences for different colorectal cancer screening options. On the other hand, physicians appear to be overwhelmingly recommending colonoscopy screening, despite their willingness to acknowledge patient modality preferences if they are raised during appointments. Further efforts to encourage patients to clarify their preferences may improve colorectal cancer screening decision making.
E. HEALTH ECONOMICS LUSTED FINALISTS

« Previous Session  |  Next Session »

4:30 PM - 6:00 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Session Chairs:

- Heather Taffet Gold, PhD
- Myriam G.M. Hunink, PhD, MD

Session Summary:

4:30 PM - 4:45 PM

**E-1. THE COST-EFFECTIVENESS OF SYMPTOM-BASED TESTING AND ROUTINE SCREENING FOR ACUTE HIV INFECTION IN MEN WHO HAVE SEX WITH MEN IN THE UNITED STATES**

4:45 PM - 5:00 PM

**E-2. THE COST-EFFECTIVENESS OF A SUPERVISED CONSUMPTION SITE IN TORONTO, CANADA**

5:00 PM - 5:15 PM

**E-3. OPTIMAL HIV TESTING BY RISK GROUP**

5:15 PM - 5:30 PM

**E-4. COST-EFFECTIVENESS OF RISK-FACTOR GUIDED AND UNIVERSAL SCREENING FOR CHRONIC HEPATITIS C INFECTION IN THE U.S**

5:30 PM - 5:45 PM

**E-5. THE COST-EFFECTIVENESS OF PREEXPOSURE PROPHYLAXIS FOR HIV PREVENTION IN MEN WHO HAVE SEX WITH MEN IN THE UNITED STATES**

5:45 PM - 6:00 PM
Abstracts:

E-1. THE COST-EFFECTIVENESS OF SYMPTOM-BASED TESTING AND ROUTINE SCREENING FOR ACUTE HIV INFECTION IN MEN WHO HAVE SEX WITH MEN IN THE UNITED STATES

4:30 PM - 4:45 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS

Jessie L. Juusola, MS1, Margaret L. Brandeau, PhD1, Elisa F. Long, PhD2, Douglas K. Owens, MD, MS3 and Eran Bendavid, MD1, (1)Stanford University, Stanford, CA, (2)Yale University, New Haven, CT, (3)Veterans Affairs Palo Alto Health Care System and Stanford University, Stanford, CA

Purpose: Acute HIV infection often causes influenza-like illness (ILI) and is associated with high infectivity. Antiretroviral therapy (ART) substantially decreases infectivity and could reduce transmission if people with acute HIV infection could be identified promptly. We estimated the effectiveness and cost-effectiveness of strategies to identify and treat acute HIV infection in men who have sex with men (MSM) in the US.

Method: We developed a dynamic model of the HIV epidemic among MSM aged 13-64 in the US. We estimated the number of new infections, quality-adjusted life-years (QALYs), and costs for three testing approaches: viral load (VL) testing for individuals with ILI, expanded screening with antibody testing, and expanded screening with antibody and VL testing. We included treatment with ART for individuals identified as acutely infected.

Result: At the present rate of HIV-antibody testing, we estimated that 538,000 new infections will occur among MSM over the next 20 years. Expanding antibody screening coverage to 90% of MSM annually reduces new infections by 2.8% and costs $12,582 per QALY gained. Symptom-based VL testing is more expensive than expanded annual antibody testing, but is more effective and costs $22,786 per QALY gained. Combining expanded annual antibody screening with symptom-based VL testing prevents twice as many infections compared to expanded antibody screening alone, at a cost of $29,923 per QALY gained. Adding VL testing to all annual HIV antibody tests costs more than $100,000 per QALY gained.

Conclusion: Among MSM, use of HIV VL testing in persons with ILI prevents more infections than does expansion of annual antibody screening alone and is inexpensive relative to other screening interventions. Clinicians should consider VL testing in MSM with ILI, in addition to encouraging annual HIV antibody screening.
E-2. THE COST-EFFECTIVENESS OF A SUPERVISED CONSUMPTION SITE IN TORONTO, CANADA

4:45 PM - 5:00 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS

Eva Enns, MS1, Gregory S. Zaric, Ph.D2, Jennifer A. Jairam, MSc3, Gillian Kolla, MPH4, Carol Strike, Ph.D, MSc4 and Ahmed M. Bayoumi, MD, MSc5, (1)Stanford University, Stanford, CA, (2)University of Western Ontario, London, ON, Canada, (3)St. Michael’s Hospital, Toronto, ON, Canada, (4)University of Toronto, Toronto, ON, Canada, (5)Centre for Research on Inner City Health, the Keenan Research Centre in the Li Ka Shing Knowledge Institute, Toronto, ON, Canada

Purpose: A supervised consumption site is a legally sanctioned facility where people can consume illicit drugs under the supervision of trained staff, with the objectives of reducing the spread of blood borne infections, limiting other harms associated with drug use, and promoting safer sex practices. We evaluated the cost effectiveness of establishing one or more sites in Toronto, Canada.

Method: We developed a dynamic compartmental model of the Toronto population, accounting for the spread of Human Immunodeficiency Virus (HIV) and Hepatitis C Virus (HCV) among non drug-users, crack cocaine smokers, and injecting drug users. We estimated model parameters from administrative health databases, a survey of Toronto drug users, and published literature. The model was calibrated to known epidemiological data. For the base case, we assumed that the site would have a similar impact on needle sharing behaviors (70% reduction) as was observed at a site in Vancouver, Canada. Outcomes were direct healthcare costs, quality adjusted life years (QALYs), and HIV and HCV infections averted over 10 years. Costs and benefits were discounted at 3% per year. We evaluated the cost effectiveness of multiple sites by estimating the incremental costs and QALYs accrued with each additional site. We assumed that sites would be located in the highest drug using neighborhoods and estimated site usage from drug users’ self-reported maximum distance that they would be willing to travel to a site.

Result: If a single site were established in Toronto, we estimated that 9% of drug users would inject in the site for a cost-effectiveness ratio of $13,800/QALY gained compared to no site. Compared to one site, establishing two sites would increase usage to 17% and was associated with a gain of 320 QALYs and an incremental cost of $4.97 million, resulting in an incremental cost-effectiveness ratio of $17,200/QALY. At a willingness to pay threshold of $50,000/QALY, it would be cost-effective to establish up to three sites (incremental cost-effectiveness ratio of $45,800/QALY).

Conclusion: The establishment of supervised consumption sites in Toronto, Canada likely represents good value for money. Given the dispersed nature of drug use in Toronto, it may be cost-effective to establish three supervised consumption sites, depending on actual site usage.
E-3. OPTIMAL HIV TESTING BY RISK GROUP

5:00 PM - 5:15 PM: Mon. Oct 24, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS

Aaron Lucas, MS, BA and Benjamin Armbruster, PhD, BS, Northwestern University, Evanston, IL

Purpose: The CDC currently recommends one-time and annual HIV testing regimens for low-risk and high-risk individuals respectively. Since these recommendations were released in 2006, early initiation of highly active antiretroviral therapy (HAART) has become more common. In light of these developments we re-analyze the optimal HIV testing regimen.

Method: We build a simple mathematical model to find the optimal testing frequency for various risk groups, using annual incidence rates as proxies for risk. We focus on high-risk (1% annual incidence), moderate-risk (0.1% annual incidence) and low-risk (0.01% annual incidence) individuals. The key parameter in our model is the incremental net monetary loss (INML) of delaying detection of an HIV infection by one year. This parameter incorporates both monetary and health care costs. We calculate the optimal testing frequency for three values for INML, $4,000, $1,000, and $150. We estimate an INML of $4,000 from a scenario of early HAART initiation and consider an INML of $1,000 to be a more conservative value.

Result: With an INML of $4,000, the optimal time between tests is 4 years for low-risk groups, 1.2 years for moderate-risk groups, and 0.4 years for high-risk groups. For an INML of $1,000, the optimal time between tests is 8 years, 2.4 years, and 0.8 years for low, moderate, and high-risk groups. The current CDC guidelines are close to the frequencies that would be optimal with an INML equal to $150, an implausibly low value. For an INML of $150, the optimal time between tests is 20 years for low-risk groups and 2 years for high-risk groups.

Conclusion: With a reasonable INML, our model suggests that HIV testing for low-risk individuals should be more frequent than the one-time testing currently recommended by the CDC.

E-4. COST-EFFECTIVENESS OF RISK-FACTOR GUIDED AND UNIVERSAL SCREENING FOR CHRONIC HEPATITIS C INFECTION IN THE U.S

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS

Shan Liu, S.M., Lauren E. Cipriano, BSc, BA, PhD, Candidate and Jeremy D. Goldhaber-Fiebert, PhD, Stanford University, Stanford, CA

Purpose: Over 3 million Americans are infected with chronic hepatitis C (HCV), a serious liver disease. Current U.S. guidelines recommend no screening in the general
population. There is disagreement among advisory bodies regarding screening of high-risk individuals. We assessed the cost-effectiveness of universal and risk-factor guided HCV screening for asymptomatic U.S. adults (40-60 years old) at a routine medical visit.

**Methods:** We developed a decision-analytic Markov model that included the natural history of chronic HCV (genotype 1, 2, or 3) and advanced liver disease. We assessed the lifetime costs (2010 USD), quality adjusted life-years (QALYs) gained, and incremental cost-effectiveness ratios (ICERs) of three screening strategies: no screening, risk-factor guided screening, and universal screening. Risk factors included combinations of history of drug use, blood transfusion prior to 1992, and sexual behaviors. Analyses of the (1999-2008) National Health and Nutrition Examination Survey data provided gender- and age-specific HCV and risk factor prevalence estimates among HCV negative and positive individuals. Those individuals identified via screening who are HCV positive and eligible for treatment receive either standard therapy (peginterferon alfa and ribavirin) in the base case or standard therapy in combination with a recently-developed protease inhibitor as a scenario analysis.

**Results:** For men, universal screening has an ICER of $42,900/QALY compared to no screening. In order for risk-factor guided screening to be cost-effective, ≥80% of high-risk individuals must truthfully report their status. Even if all high-risk individuals reported truthfully, universal screening is still cost-effective ($47,400/QALY). For women, universal screening has an ICER of $69,100/QALY compared to no screening. Risk-based screening has an ICER approaching $100,000/QALY even if 80% of high-risk individuals truthfully reported. Newer treatments improve incremental cost-effectiveness ratios relative to standard therapy. Screening is less cost-effective for individuals above age 50 because HCV prevalence peaks around 50 years. Low treatment acceptance, disutility of knowing one’s HCV status, and high treatment costs erode screening cost-effectiveness.

**Conclusions:** Universal screening is likely cost-effective for both men and women at a willingness to pay threshold of $100,000/QALY. The efficiency of risk-factor guided screening depends strongly on efficiently identifying most high-risk individuals. These findings suggest that existing U.S. HCV screening guidelines should be reconsidered.

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**E-5. THE COST-EFFECTIVENESS OF PREEXPOSURE PROPHYLAXIS FOR HIV PREVENTION IN MEN WHO HAVE SEX WITH MEN IN THE UNITED STATES**

*5:30 PM - 5:45 PM: Mon. Oct 24, 2011*  
*Grand Ballroom CD (Hyatt Regency Chicago)*  
*Part of Session:* **HEALTH ECONOMICS LUSTED FINALISTS**

**Jessie L. Juusola, MS¹, Margaret L. Brandeau, PhD¹, Douglas K. Owens, MD, MS² and Eran Bendavid, MD¹**, (1)Stanford University, Stanford, CA, (2)Veterans Affairs Palo Alto Health Care System and Stanford University, Stanford, CA
**Purpose:** In a recent randomized controlled trial, daily oral preexposure chemoprophylaxis (PrEP) has been shown to be very effective for HIV prevention in men who have sex with men (MSM), and the US Centers for Disease Control and Prevention (CDC) recently provided interim guidance for its use among MSM who are at high risk for sexual acquisition of HIV. Previous studies failed to reach a consistent estimate of its cost-effectiveness.

**Method:** We used an epidemic modeling framework combined with detailed economic analysis to estimate costs and health outcomes for various PrEP strategies. We developed a dynamic model of the HIV epidemic among MSM aged 13-64 in the US, with annual HIV incidence of 0.8% in the base case, representing an average across the US. We assumed in the base case that PrEP reduces HIV infection risk by 73%, as seen among MSM reporting high adherence to PrEP. We estimated the number of new infections, quality-adjusted life-years (QALYs), costs, and incremental cost-effectiveness ratio for each strategy.

**Result:** If PrEP is initiated in 20% of the MSM population in the US, we estimate a reduction in new HIV infections of 21% and a gain of 893,000 QALYs over 20 years at a cost of $103,000 per QALY, given an effectiveness of 73%. Initiating PrEP in a larger proportion of the MSM population averts more infections but at increasing cost per QALY gained (more than $120,000 per QALY gained when at least 60% of the population is placed on PrEP). If PrEP is 44% effective in reducing infection risk, new HIV infections are reduced by 13% and PrEP costs $168,000 per QALY gained. PrEP has a more favorable incremental cost-effectiveness ratio in sub-groups of MSM with higher incidence, costing less than $50,000 per QALY gained when annual incidence is greater than 1.5%.

**Conclusion:** Use of PrEP for HIV prevention in the general MSM population is modestly expensive, but PrEP may be cost-effective by conventional standards in high-risk sub-groups of MSM.

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**E-6. SOCIAL INTERACTION MODULES IN EPIDEMIC MODELS FOR THE SIMULATION OF INFECTIOUS DISEASES AND EVALUATION OF INTERVENTIONS**

5:45 PM - 6:00 PM: Mon. Oct 24, 2011  
Grand Ballroom CD (Hyatt Regency Chicago)  
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS

**Christoph Urach**¹, Günther Zauner², Niki Popper², Gottfried Endel³, Irmgard Schiller-Frühwirth³ and Felix Breitenecker¹, (1)Vienna University of Technology, Vienna, Austria, (2)Dwh Simulation Services, Vienna, Austria, (3)Main Association of Austrian Social Security Institutions, Vienna, Austria

**Purpose:** Calculating cases of illnesses caused by droplet infections and evaluating the influence of interventions requires dynamic simulation models. The aim of the work is to develop a module to simulate social interaction in epidemic disease propagation and show that models using such complex structures can provide
different and more accurate results than calculations neglecting social networks.

**Method:** Data from EU-project POLYMOD (SP22-CT-2004-502084) about contacts between people and their location is thoroughly analyzed. We use agent-based modeling to create the social interaction sub model due to the very inhomogeneous contact structure as well as the necessity to create a flexible, extensible module. Data from Statistik Austria and structural knowledge about places is used to create different work places, schools, households and places for leisure activities. Each place type has its own structure. For example the place type school defines a structure which consist of several classes with pupils and teachers which change classes according to their movement rules. The social interaction model uses many realizations of the place type school with different parameters for school and class sizes as well as the age structure of the pupils according to data from Statistik Austria. The spread of the disease happens through contacts between infected and susceptible people who are at the same place at the same time.

**Result:** Social networks are established through places where people meet regularly. The model does not only allow simulating the quickness of the spread of diseases but also locate places where many potential infectious contacts occur. It also helps identifying key people who are responsible for many infections as well as simulating the outcome of interventions. Actual this social module is used in a model for influenza. At some places and especially in schools many infections occur. Simulating scenarios where teachers are vaccinated or schools are closed show that the pace of the epidemic can be slowed down.

**Conclusion:** Spread of diseases through contacts between individuals can be more properly assessed when simulating contact places. Especially the evaluation and simulation of interventions which target only certain population groups or locations and therefore affect some people more than others benefit from social interaction models. Due to the modular design the contact model can be adapted and used for other droplet infections.

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**F. BEHAVIORAL ECONOMIC AND DECISION PSYCHOLOGY APPROACHES TO CHOICE**

4:30 PM - 6:00 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Session Chairs:

- Alan Schwartz, PhD
- Angela Fagerlin, PhD
F-1. TRADING OFF LIFE STYLE OPTIONS TO REDUCE THE RISK OF CHD IN NORTHERN IRELAND

F-2. IGNORANCE IS BLISS: WHY DO PATIENTS AT RISK FOR HUNTINGTON DISEASE AVOID GENETIC TESTING?

F-3. METABOLIC MECHANISMS OF INTERTEMPORAL CHOICE: BLOOD GLUCOSE AND DELAY DISCOUNTING

F-4. A RANDOMIZED TRIAL OF DEFAULT OPTIONS IN ADVANCE DIRECTIVES FOR PATIENTS WITH TERMINAL LUNG DISEASES

F-5. “NUDGING” PATIENTS TOWARDS ACCEPTING STRONG RECOMMENDATIONS

F-6. CAN THE RESULTS OF LABORATORY BASED MESSAGE FRAMING EXPERIMENTS BE GENERALIZED TO PATIENTS?

F-1. TRADING OFF LIFE STYLE OPTIONS TO REDUCE THE RISK OF CHD IN NORTHERN IRELAND
4:30 PM - 4:45 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Alberto Longo, PhD, Jose Grisolia and W. George Hutchinson, Professor, Queen's University Belfast, Belfast, Northern Ireland

Purpose: To assess the Willingness To Pay (WTP) to reduce Coronary Heart Disease (CHD) risk and to assess the Value of a Statistical Life (VSL) for CHD risk reductions from changing dietary habits and amount of physical activity in the Northern Ireland.

Method: A stratified sample of 519 persons representative of the Northern Ireland population aged 40-65 were administered with a Choice Experiments (CE) questionnaire through computer assisted personal interviews, conducted in the house of the respondents, during January – March 2011. Respondents were queried about their medical history, eating habits, and levels of physical activity to present them with their own CHD risk in the next ten years. Respondents were then shown ten CE questions where they were asked to trade off their current lifestyle with hypothetical lifestyle options, described by reduction in unhealthy food items, increase in the consumption of fruit and vegetables, increase in the amount of physical activity, reduction in the risk of a heart attack, and increase in weekly expenditures. We use Mixed logit models to analyze the CE data.

Result: Respondents are on average willing to pay £0.03/minute per week for increasing their amount of Physical Activity, which is equal to £5.18 to reach the recommended amount of 30 minutes of Physical Activity 5 times/week. Respondents need to be compensated, as they have a WTP equal to £-0.01/gram of fat per week, for reducing fat content from diet and replacing fatty items with fruit and vegetables. Respondents are also willing to pay £0.81 per week for reducing their own CHD risk by 1% over the next 10 years. When controlling for income, BMI, and health status, we find that respondents with higher BMI levels are willing to pay more for increasing their amount of physical activity, and need to receive higher compensations for reducing fat content from their diets. Considering a 3.5% discount rate, the VSL is equal to £610,944.

Conclusion: A policy to reduce obesity should invest more public money in programs that promote physical activity, rather than making unhealthy food less attractive. Our results show that people with high BMI levels are more likely to choose a lifestyle option characterized by increased levels of physical activity, rather than by a food basked that entails a sacrifice in terms of reduced fat content.
Lorens A. Helmchen, Ph.D., George Mason University, Fairfax, VA and Avraham Stoler, Ph.D., De Paul University, Chicago, IL

**Purpose:** To examine why so few individuals at risk of Huntington disease (HD) seek genetic testing and why the propensity to test increases with the belief of carrying the gene.

**Methods:** HD is an inherited disorder generally characterized by the adult onset of impaired movement and cognitive decline that commonly leads to institutional care and eventually death within 20 years. A genetic test that can confirm or rule out with near-certainty whether an individual will develop HD is inexpensive and widely available. As the disease has no cure, the test does not help improve treatment but it can guide individuals in their decisions about education, marriage, fertility, savings, and retirement. Given the disease’s substantial mortality and morbidity impact, neo-classical models predict that individuals at risk of HD value genetic testing highly, yet fewer than 10% opt for the test. Moreover, the propensity to test has been observed to increase with individuals' belief that they will develop HD, contradicting neo-classical predictions. Using survey data from 64 untested individuals at risk of HD (mean age: 44 years; 42% male; 84% white; mean years of education: 14.5), we test whether respondents' stated advantages and disadvantages of testing for HD reveal an asymmetry between the perceived loss in utility of confirming the eventual onset of HD and the perceived utility gain of ruling it out. We also test whether the stated advantages and disadvantages of testing vary with respondents' experience of symptoms, which inform their beliefs about HD.

**Results:** 53% of respondents feared “depression after confirming HD”, while only 5% of respondents explicitly mentioned the possibility of “feeling much better” after ruling it out. Moreover, after controlling for respondent demographics, symptomatic respondents were substantially and significantly less likely than non-symptomatic respondents to fear depression after confirming HD (-36 percentage points, p=0.006), while respondents rarely considered the possibility of “feeling much better” as an advantage of testing regardless of symptom onset (-4 percentage points, p=0.439). We show that a simple modification of the neo-classical model in which individuals assign greater weight to losses relative to gains can account for these survey response patterns.

**Conclusion:** Survey responses of individuals at risk of HD are consistent with Prospect Theory, in which subjects systematically overweight the losses relative to the gains of genetic testing.

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F-3. METABOLIC MECHANISMS OF INTERTEMPORAL CHOICE: BLOOD GLUCOSE AND DELAY DISCOUNTING

5:00 PM - 5:15 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)

Part of Session: BEHAVIORAL ECONOMIC AND DECISION PSYCHOLOGY APPROACHES TO CHOICE
X.T. Wang, Ph.D.¹, Shu Li, Ph.D.² and Lilin Rao², (1)University of South Dakota, Vermillion, SD, (2)Chinese Academy of Sciences, Beijing, China

Purpose: In two studies, we examined metabolic mechanisms of intertemporal choice within a synthetic framework of life-history theory and risk sensitive foraging theory. In a previous study (Wang & Dvorak, 2010) we identified a novel link between blood glucose (GB) levels and delay (future) discounting. People discount the future when they prefer a smaller and sooner (SS) reward to a larger but later (LL) reward when making intertemporal choices. We found that a sugar drink reduced delay discounting, making the LL options more attractive whereas a diet drink increased delay discounting, making the SS options more preferable. Based on these findings, we predict that when the body energy budget is low, the delay discounting rate would increase to get immediate supply, and vice versa.

Method: In Study 1, we examined the effects of varying BG levels on delay discounting in natural conditions measured by subjective ratings of hunger and actual temporal distance from the last meal. In Study 2, we checked the BG levels of the participants before making a hypothetical investment decision of allocating a certain amount of tax return for immediate use vs. short-term or/and long-term saving. We also examined the issue of resource allocation. The participants were asked to answer questions about contents and intension of a conversion between a man and a woman portrayed in a photo.

Result: The results from Study 1 showed that the temporal distance but not subjective hunger perception was significantly and positively correlated with delay discounting. Results from Study 2 showed that the participants with higher BG levels were more likely to save the money for future use. The participants who were low in the BG levels were more likely to interpret the conversation in terms of sexual nature.

Conclusion: Fluctuating blood glucose levels continuously inform the brain about body energy budget, and allow the brain to regulate intertemporal choice adaptively by adjusting delay discounting rate and by making trade-offs between survival-related calorie intake and reproduction-related mating processes.

F-4. A RANDOMIZED TRIAL OF DEFAULT OPTIONS IN ADVANCE DIRECTIVES FOR PATIENTS WITH TERMINAL LUNG DISEASES

Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: BEHAVIORAL ECONOMIC AND DECISION PSYCHOLOGY APPROACHES TO CHOICE

Scott D. Halpern, MD, PhD, MBE¹, Kevin Volpp, MD, PhD¹, George Lowenstein, PhD², Elizabeth Cooney, MPH¹, Tatiana Silva, MPA¹, Robert M. Arnold, MD³, Derek C. Angus, MD, MPH, FRCp³ and Cindy L. Bryce, PhD³, (1)University of Pennsylvania School of Medicine, Philadelphia, PA, (2)Carnegie Mellon University, Pittsburgh, PA, (3)University of Pittsburgh School of Medicine, Pittsburgh, PA
Purpose: To examine how default options affect chronically ill patients’ goals of care and elections to receive specific interventions when completing real advance directives (ADs).

Methods: Randomized trial of patients with non-curable lung diseases recruited from pulmonary and oncology clinics. Patients were assigned with equal probabilities to complete (1) an opt-out AD (modeled on the Allegheny County Medical Society’s advocated form) in which the default goal of care prioritized extending life “even if that means I may have more pain and suffering,” and patients could opt out individually from 5 interventions (e.g., mechanical ventilation); (2) an opt-in AD in which the default goal of care prioritized comfort “even if that means not living as long” and patients could opt into 5 interventions; or (3) a neutral AD in which patients not making active choices effectively were choosing not to specify a plan of care or intervention preference.

Results: Among 130 patients enrolled, 38 (29%) completed an AD that was signed by their surrogates and incorporated into their medical records. Non-completion rates were similar across the 3 arms (all p > 0.5), and intention-to-treat analyses produced results similar to the per-protocol analyses reported here. Patients completing opt-in ADs (78%) were the most likely to select the comfort-oriented plan of care, followed by patients completing neutral ADs (57%) and opt-out ADs (20%) (p < 0.001 for trend). Patients completing opt-in rather than opt-out AD’s were more likely to choose to forgo ICU admission, dialysis, and feeding tube insertion (all p < 0.05); corresponding but non-significant findings were noted for mechanical ventilation (p = 0.074) and cardiopulmonary resuscitation (p = 0.088). Patients completing neutral ADs had probabilities of forgoing each service that were intermediate between those for patients completing opt-in and opt-out ADs.

Conclusions: Building on prior research in hypothetical settings, this study provides the first randomized evidence that default options influence real healthcare decisions. Future research is needed to identify methods for increasing AD completion and to quantify how altering the choices patients make in ADs influence their receipt of wanted and unwanted healthcare services, costs of care, and satisfaction with care.

F-5. “NUDGING” PATIENTS TOWARDS ACCEPTING STRONG RECOMMENDATIONS

5:30 PM - 5:45 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: BEHAVIORAL ECONOMIC AND DECISION PSYCHOLOGY APPROACHES TO CHOICE

Liana Fraenkel, MD, MPH, Yale School of Medicine, New Haven, CT, Ellen Peters, Ph.D., Decision Research, Eugene, OR and Valerie Reyna, PhD, Cornell University, Ithaca, NY

Purpose: American College of Rheumatology guidelines “strongly recommend” aggressive care with disease modifying anti-rheumatic drugs (DMARDs) in order to
achieve and maintain tight control in rheumatoid arthritis (RA). Despite the widespread endorsement of this approach, data suggest that many patients are not effectively treated. There are currently no proven mechanisms to effectively inform patients and enable them to process the complex information involving decisions related to escalating care. The objective of this study is to develop a decision tool to effectively inform and "nudge" RA patients with active disease to accept additional therapy.

**Methods:** We first performed a systematic review to generate the outcome data and risk estimates required for the tool. A Delphi panel of experts was used to determine which AEs should be represented to all subjects to ensure informed consent. Additional information can be accessed through links for those desiring additional information. Probabilistic information is presented using theoretically motivated manipulations; e.g.: bar graphs to emphasize relative benefits and pie charts to emphasize the denominator. Participants perform a Best-Worst scaling exercise after viewing the informational content to clarify their priorities. We conducted a pre-post test pilot study to assess the feasibility, acceptability, and preliminary evidence of the tool’s efficacy in improving informed choice.

**Results:** We interviewed 104 subjects; mean age (SD) = 62 (12); 84% female, 86% White; median duration of RA = 13 years (range 1-61). Knowledge (sum of correct responses to 20 questions) and willingness to take a biologic (11-point numeric rating scale) significantly improved after viewing the tool (mean differences 3.1 and 1.4 respectively, both p < 0.0001). Decisional conflict (informed and value subscales) also significantly decreased (mean differences 20.4 and 20.7, both p<0.001). Increased willingness to take a biologic was greater among younger adults and those with a college education. Improvement in knowledge was seen across ages and educational backgrounds. Over 90% of participants ratings; related to the quality and quantity of information were very good or excellent. 89% found the tool to be very helpful and all would recommend it for patients with RA.

**Conclusion:** A tool designed based on the principles of Fuzzy Trace theory to nudge patients towards accepting "strong recommendations" increased knowledge, decreased decisional conflict, and increased patient willingness to escalate care in a pre-post test setting.

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**F-6. CAN THE RESULTS OF LABORATORY BASED MESSAGE FRAMING EXPERIMENTS BE GENERALIZED TO PATIENTS?**

5:45 PM - 6:00 PM: Mon. Oct 24, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: **BEHAVIORAL ECONOMIC AND DECISION PSYCHOLOGY APPROACHES TO CHOICE**

**Richard W. Martin, MD, MA**¹, Patience J. Gallagher, B.S.² and Donald J. Tellinghuisen, PhD², (1)Michigan State University, Grand Rapids, MI, (2)Calvin College, Grand Rapids, MI
**Purpose:** To explore the validity of generalizing the results from first year psychology students in message framing laboratory experiments to patient decision aid design.

**Method:** 91 first year psychology students and 91 rheumatoid arthritis (RA) patients participated in a prospective randomized, single blind, factorial experimental design evaluating the effect of four information formats on: satisfaction with risk communication and verbatim and gist recall of a hypothetical drug's ability to slow the rate of progression of structural joint damage (SJD). The study was conducted in 2 different settings using similar experimental procedures. College students enrolled in an introductory psychology class were evaluated in a traditional experimental laboratory setting. Patients were evaluated in a conference room adjacent to the clinic waiting room following a routinely scheduled clinic visit.

**Result:** Demographics of students and patients were respectively: Mean age 19.4 years (18-25) vs. 61.7 years (18-86), female gender 50.5 vs. 60.0%, minority ethnicity 1.1 vs. 5.4%. Less than high school graduate 0 vs. 10.0%, low or marginal health literacy N/A vs. 4.4%. Patients had a mean duration of disease of 9.6 year (range < 1 -30) and previous had used a mean of 3 disease modifying drugs (range 1-8). A two-way ANOVA performed on mean satisfaction with risk communication scores did not disclose a significant effect of participant type \[ F (1, 174) = .109, \ p = .742, \ p^2 = .001 \]. Participants across conditions overestimated the rate of progression by 19 percentage points (M response of 34.4%, SD 29.7). The two-way ANOVA of mean verbatim recall indicated a significant effect of information format, \[ F (3, 174) =2.774, \ p<0.023, \ p^2 = .053 \]. The main effect of participant type however was not significant, \[ F (1, 174) = .003, \ p = .955, \ p^2 > .001 \].

**Conclusion:** Graphic elements improved the understanding of disease progression in participants unfamiliar with the disease as well as in RA patients. Our results indicate that testing decision aid components with non-patients may provide data generalizable to patient populations from more convenient samples than patients. We demonstrate that it is not only feasible to conduct message framing experiments with patients in a clinical setting, but that they were very interested in contributing to the development of medication patient decision aids.

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**Tuesday, October 25, 2011**

**BD3. INVITED SESSION: TBD 3**

« Previous Session  |  Next Session »

*10:00 AM - 11:30 AM: Tue. Oct 25, 2011*  
*Columbus Hall AB (Hyatt Regency Chicago)*
G. VALUES, PREFERENCE ELICITATION AND UTILITY ASSESSMENT

Session Chairs:

• Anne M. Stiggelbout, PhD
• Margaret M. Byrne, PhD

Session Summary:

10:00 AM - 10:15 AM

G-1. EFFECT OF CHRONIC CONDITIONS ON THE VALUATION OF HYPOTHETICAL EQ-5D HEALTH STATES

10:15 AM - 10:30 AM

G-2. COMPARATIVE PERFORMANCE OF CONJOINT ANALYSIS, TIME TRADE OFF, AND RATING SCALE METHODS OF PREFERENCE ASSESSMENT: PILOT DATA FROM A STUDY OF MEN AT RISK FOR PROSTATE CANCER

10:30 AM - 10:45 AM

G-3. PREDICTING UTILITY SCORES FOR PROSTATE CANCER: MAPPING THE PROSTATE CANCER INDEX TO THE PATIENT ORIENTED PROSTATE UTILITY SCALE (PORPUS)

10:45 AM - 11:00 AM

G-4. SPILLOVER DISUTILITY OF CHRONIC CONDITIONS IN US: MENTAL DISORDERS HAVE GREATEST EFFECT ON FAMILY MEMBERS

11:00 AM - 11:15 AM

G-5. PREFERENCES FOR BREAST CANCER CHEMOPREVENTION
11:15 AM - 11:30 AM

**G-6. ATTRIBUTE PROCESSING IN CHOICE EXPERIMENTS: A METHODOLOGICAL EXPLORATION**

Abstracts:

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**G-1. EFFECT OF CHRONIC CONDITIONS ON THE VALUATION OF HYPOTHETICAL EQ-5D HEALTH STATES**

10:00 AM - 10:15 AM: Tue. Oct 25, 2011

*Grand Ballroom EF (Hyatt Regency Chicago)*

*Part of Session: VALUES, PREFERENCE ELICITATION AND UTILITY ASSESSMENT*

**Rima Tawk, PhD, James W. Shaw, PhD and A. Simon Pickard, PhD, University of Illinois at Chicago, Chicago, IL**

**Purpose:** There is evidence that patient preferences are systematically higher than societal preferences for a patient’s self-reported health state, possibly due to adaption to chronic illness by patients. It is less clear whether stated preferences for hypothetical health states differ between persons with and without specific conditions. The aim of this study was to determine if presence of specific chronic conditions affected the values estimated for hypothetical EQ-5D health states.

**Methods:** Data were taken from the US Valuation of EQ-5D Health States. Study participants (N = 3,773) comprised a probability sample of the US adult population in 2002. Each participant valued 12 of a subset of 45 of the 243 EQ-5D health states in a TTO exercise and reported on the presence or absence of 18 chronic conditions. A novel conceptual model was developed to explain the direct and indirect effects of illness experience on values for hypothetical health states. The analyses focused on six conditions: arthritis, diabetes, depression, congestive heart failure, cancer, and allergic rhinitis. Multivariable linear regression was used to estimate differences in health state preferences among persons with a given condition alone, that condition plus one or more other conditions, one or more other conditions, or no chronic conditions while controlling for the satisfaction attributed to own health, other interpersonal differences, and the perceived severity of the valued states. All analyses accounted for the complex sampling design of the US EQ-5D valuation study.

**Results:** There were no statistically significant differences in mean health state preferences among the four condition-related strata for any of the six chronic conditions. No trend towards adaptation was suggested among those with specific conditions as the direction of the relationship was inconsistent. The strongest predictors of health state preferences were race/ethnicity, age, and marital status.
Conclusions: Results suggest self-reported chronic conditions have a trivial impact on preferences for hypothetical health states while race/ethnicity has a strong effect, consistent with results of a previous study. These results have important implications for researchers who seek to use patient preferences to generate preference-weighting algorithms for condition-specific health state classifiers. However, due to data limitations, including reliance on self-reported data and lack of data on severity/treatment of disease, further investigation is needed.

G-2. COMPARATIVE PERFORMANCE OF CONJOINT ANALYSIS, TIME TRADE OFF, AND RATING SCALE METHODS OF PREFERENCE ASSESSMENT: PILOT DATA FROM A STUDY OF MEN AT RISK FOR PROSTATE CANCER

10:15 AM - 10:30 AM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: VALUES, PREFERENCE ELICITATION AND UTILITY ASSESSMENT

Christopher S. Saigal, MD, MPH, Ely Dahan, PhD, Kate Crespi, PhD, Sylvia Lambrechts, MPH, MA, Elizabeth Garcia, BS and Robert M. Kaplan, PhD
(1)UCLA, Los Angeles, CA, (2)University of California Los Angeles, Los Angeles, CA

Purpose: Existing “gold standard” preference assessment methods may suffer from problems with validity and reliability. Conjoint analysis, a method of consumer preference measurement, may have superior comparative performance characteristics. We aimed to conduct a randomized comparison of methods in men at risk for prostate cancer.

Method: Men who had undergone treatment for localized prostate cancer were interviewed individually to identify attributes of prostate cancer treatment that were critical to patients. Using these attributes, we developed 3 preference assessment applications: rating scale (RS), time trade-off, (TTO) or conjoint analysis-based (CA). These applications were first piloted in men who had been treated for prostate cancer. We then randomized men who had undergone prostate biopsy with negative results to preference assessment with the CA and either TTO or RS applications. Validity of preference measurement was compared by assessing the ability of the utility functions derived from each application to successfully predict the patient’s preference for novel multi-attribute health states that he had not yet seen or rated. We compared the internal consistency and predictive validity of each method at the individual level as well as the perceived difficulty and effectiveness of each task. We compared the most important treatment attributes identified by each method.

Result: 17 subjects have been randomized to date. Average age was 64 years, range 55 – 71, 29% were Caucasian, 47% were African-American, 25% other. Educational attainment was 12% High School, 53% some college, 35% college graduate. The CA and RS methods had high internal consistency compared with TTO (average r2 of 85% (CA), 86% (RS) and 44% (TTO). Utility functions derived from CA and RS were superior at prediction of preference for novel multi-attribute health states compared with that of TTO. The most important three attributes to
patients as determined using CA were effect on urinary function, sexual function and surgery avoidance. These differed from those identified using RS and TTO in the inclusion of surgery avoidance instead of bowel function. Patients felt CA was the most difficult method, but also the most effective at expressing their values.

**Conclusion:** Conjoint analysis is a feasible method of preference assessment in men at risk for prostate cancer, and is viewed as effective by such patients. Both RS and CA outperform TTO based on preliminary results.

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**G-3. PREDICTING UTILITY SCORES FOR PROSTATE CANCER: MAPPING THE PROSTATE CANCER INDEX TO THE PATIENT ORIENTED PROSTATE UTILITY SCALE (PORPUS)**

10:30 AM - 10:45 AM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: **VALUES, PREFERENCE ELICITATION AND UTILITY ASSESSMENT**

**Murray D. Krahn, MD, MSc**, University of Toronto, Toronto, ON, Canada, Karen E. Bremner, BSc, University Health Network, Toronto, ON, Canada, Nicholas Mitsakakis, MSc, PHD, Toronto Health Economics and Technology Assessment Collaborative, Toronto, ON, Canada and Leslie S. Wilson, PhD, University of California San Francisco, San Francisco, CA

**Purpose:** The Patient Oriented Prostate Utility Scale (PORPUS-U) is a 10-item disease-specific multiattribute utility instrument with utility weights from prostate cancer patients. The Prostate Cancer Index (PCI) is a descriptive quality of life instrument producing function and bother scores ranging from 0 (poor outcome) to 100 (good outcome) for urinary, sexual, and bowel problems. The study objective was to develop a function to predict utility scores from PCI scores.

**Method:** We used patient-level data from previous studies in which the PCI and PORPUS were administered concurrently. Study 1 included 248 prostate cancer patients from an outpatient clinic interviewed on 3 occasions within 18 months. Study 2 included 676 community-dwelling prostate cancer patients who completed the questionnaires by mail. The derivation sample (Study 2) was used to fit three linear regression models, chosen based on previous work. Study 1 data were used to validate the models. PCI scores were divided by 100 to range from 0 to 1. One model used the original PORPUS-U scores, and two used log-transformed PORPUS-U scores, one with a hierarchy constraint and one without. Also, all models were run with and without patient age. Model selection was performed with PORPUS-U score as the dependent variable and PCI score as the covariate, using stepwise selection and 5-fold cross validation. The predictive ability of the models was assessed.

**Result:** The best-fitting model used the log-transformed PORPUS-U with no hierarchy constraint. Inclusion of age did not improve the model. Scores were untransformed for validation, and Dunn’s smearing estimator applied to correct potential bias in the estimate. The r-squared was 0.72. The RMSE ranged from 0.041
We compared the observed PORPUS-U scores to scores predicted from PCI responses. The mean predicted and observed scores were similar (eg., 0.966 vs 0.956). The mean predicted scores were also similar across quartiles of observed scores but slightly overestimated the lowest 5% of observed PORPUS-U scores.

**Conclusion:** We developed an algorithm to predict PORPUS-U utility scores from PCI scores. This facilitates the estimation of patient-derived utilities for clinical and health economic studies from the many published studies using the PCI. This is also, to our knowledge, the only attempt to map a disease-specific quality of life instrument to a disease-specific utility measure.

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**G-4. SPILLOVER DISUTILITY OF CHRONIC CONDITIONS IN US: MENTAL DISORDERS HAVE GREATEST EFFECT ON FAMILY MEMBERS**

10:45 AM - 11:00 AM: Tue. Oct 25, 2011  
Grand Ballroom EF (Hyatt Regency Chicago)  
Part of Session: VALUES, PREFERENCE ELICITATION AND UTILITY ASSESSMENT

**Eve Wittenberg, PhD, MPP, Heller School for Social Policy and Mgmt., Waltham, MA and Lisa Prosser, PhD, University of Michigan, Ann Arbor, MI**

**Purpose:** Caregivers report diminished quality of life and negative physical effects of caring for ill individuals. This study measured the spillover disutility of chronic conditions on household members in the US.

**Method:** Medical Expenditures Panel Survey (MEPS) data from 2000-2003 were analyzed to identify the independent effect of the presence of individuals with categories of chronic conditions (by ICD 9 codes) on household members’ utility scores. Bivariate regressions of categories of conditions on adults’ utility scores were conducted to identify those which significantly affected utility for inclusion in the multivariable model. A two-stage, multivariable regression model was built to predict EuroQol-5D index weights (EQ-5D) based on the presence of mental health and non-mental health chronic conditions within the household while controlling for other known predictors of utility (including own health status).

**Result:** In bivariate analyses, mental disorders was the only category of household chronic conditions that significantly affected adults’ utility scores, so multivariable models included mental and non-mental disorders as categories of conditions. In the first-stage, logistic model, the presence of at least one child in the household with a chronic mental health condition decreased the odds of a co-habiting adult reporting perfect health by 28% (OR for EQ-5D score of 1.0=0.72, 95%CI=0.62,0.82); the presence of an adult in the household with a chronic mental health condition decreased the odds of other adults reporting perfect health by 34% (OR=0.66, 95%CI=0.59,0.73). In the second-stage, linear model, among adults reporting less-than-perfect health (EQ-5D score<1.0), the presence of a child or adult with a mental health condition in the household reduced their EQ-5D score by 0.02 (95%CI =-0.03,-
In comparison, chronic non-mental health conditions among children and adults in the household reduced co-habiting adults’ odds of reporting perfect health by 12-13% (95%CI for child= 0.81,0.94, for adult=0.82,0.92), and among those reporting less-than-perfect health, a child with non-mental health condition had no spillover effect on adults and an adult reduced others' EQ-5D score by 0.01 (95%CI=-0.01,0).

**Conclusion:** In a US national sample, all health conditions produced spillover disutility on household members, but mental disorders more substantially affected parents, spouses and other adults in the household. Benefits of mental health interventions may be more accurately captured by including the spillover effects of these conditions on family members.

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**G-5. PREFERENCES FOR BREAST CANCER CHEMOPREVENTION**

11:00 AM - 11:15 AM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: VALUES, PREFERENCE ELICITATION AND UTILITY ASSESSMENT

Sarah T. Hawley, PhD, MPH¹, Holly Witteman, PhD², Andrea Fuhrel-Forbis², Christine Holmberg, DPhil, MPH, MA³, Peter A. Ubel, MD⁴ and Angela Fagerlin, PhD⁵, (1)University of Michigan, Ann Arbor VA Health System, Ann Arbor, MI, (2)University of Michigan, Ann Arbor, MI, (3)Berlin School of Public Health, Berlin, Germany, (4)Duke University, Durham, NC, (5)Internal Medicine, Ann Arbor, MI

**Purpose:** To assess women’s preferences for breast cancer chemoprevention (i.e., tamoxifen or raloxifene) using conjoint analysis.

**Methods:** Eight attributes related to taking a pill to prevent breast cancer were identified and assigned levels (lifetime risk of breast cancer, length of time the pill must be taken, breast cancer risk reduction, risk of endometrial cancer, risk of blood clots, risk of hormone symptoms, risk reduction of bone fractures, and availability of a biomarker). The SAS conjoint analysis program was used to develop a balanced and efficient design consisting of 36 scenarios. Each scenario presented a hypothetical pill description, including each of the 8 attributes with different levels, and asked respondents to indicate how likely they would be to take that pill on a scale of 0 (not at all likely) to 9 (very likely). A randomized block design was used to equally divide the 36 scenarios. An Internet sample of women aged 40-74 was invited to complete one set of 18 scenarios plus a dominant scenario. The responses were combined and conjoint analysis was used to generate attribute importance scores and part-worth utilities of each level.

**Results:** The 1365 respondents had a mean age of 57 and 78% were white. The mean value for likelihood of taking the pill was 5.5 (SD 3.2) for the dominant scenario and ranged from 2.1 (SD 2.4)-5.7 (SD 2.4) for other scenarios. The order of attribute importance was lifetime risk (17.4%), time (17%), risk of blood clots (12.3%), risk of endometrial cancer (12%), breast cancer risk reduction (11.2%), biomarker availability

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(10.9%), reduction in bone fracture risk (9.7%) and risk of hormone symptoms (9.7%). Part-worth utility values indicated that women preferred a pill with the following features: 90% breast cancer risk reduction, had a biomarker, no additional risks for all side effects, and could be taken for 1 year.

Conclusions: There was low interest in taking a pill as a means of preventing breast cancer in this Internet sample even when the pill had high benefits and low risks. The similarity of attribute importance values suggests that all were somewhat important, with lifetime risk of breast cancer and serious, but rare, side effects being most important. Further research evaluating associations between preferences and chemoprevention adherence in high risk patients is needed.

G-6. ATTRIBUTE PROCESSING IN CHOICE EXPERIMENTS: A METHODOLOGICAL EXPLORATION
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: VALUES, PREFERENCE ELICITATION AND UTILITY ASSESSMENT

Kirsten Howard, PhD and Glenn P. Salkeld, PhD, The University of Sydney, Sydney, Australia

Purpose: In analysing DCE, we typically assume that individual respondents evaluate each and every attribute offered in each alternative, and choose their most preferred. This study explores the effect of respondent attribute processing, using 'attribute importance', on parameter estimation, model fit and marginal rates of substitution (MRS), in colorectal cancer screening.

Methods: The survey, a fractional factorial design of a two-alternative, unlabeled experiment, was mailed to a sample of 1920 subjects in NSW, Australia. Attributes included: test accuracy for cancer and for large polyps, false positive rate, cost, dietary & medication restrictions and sample collection. The importance of each attributes was assessed using a Likert scale, where 1= very important and 5 = not important at all, dichotomised for analysis (1-2 = important, 3-5= not important/neutral). Two analyses were conducted where it was assumed that 1) all attributes are attended to and influence choices (usual analysis practice); and 2) attributes were stratified by their importance on the Likert scale, using interaction terms to indicate whether attributes were important, or not. Mixed logit models were used to estimate preferences.

Results: 1152 from 1920 surveys (60%) were returned. Both choice models significantly predicted respondent test preferences. In comparing models, Model 2 was significantly better than Model 1 (chi-square equal to 485.4 (with 6 degrees of freedom, p<0.00001). There was also an improvement in McFadden's pseudo R² with Model 2; the reduction in AIC moving from Model 1 to Model 2 indicated that this improvement remained even after penalising for the loss of parsimonious specification. Respondents who reported the attribute was important to them had
significantly higher parameter estimates compared to those who considered the attribute not important or neutral. This was consistent across all attributes, and also resulted in significant differences in MRS and WTP.

**Conclusions:** Rather than assuming all attributes are equally attended to by respondents, our analysis suggests that taking account of respondent-reported attribute importance (as a proxy for attribute processing) may result in models that better explain respondent’s choice behaviour and preferences. This issue and other attribute processing strategies should be further explored in different settings and data sets.

**H. COST-EFFECTIVENESS ANALYSIS AND ECONOMIC EVALUATION**

10:00 AM - 11:30 AM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)

**Session Chairs:**
- Matt Stevenson, PhD
- Allison B. Rosen, MD, ScD

**Session Summary:**

10:00 AM - 10:15 AM

**H-1. COST-EFFECTIVENESS OF PRIMARY HUMAN PAPILLOMAVIRUS (HPV) TESTING IN NORWAY**

10:15 AM - 10:30 AM

**H-2. COST-EFFECTIVENESS OF USING TRANEXAMIC ACID INFUSION IN TRAUMA PATIENTS WITH SIGNIFICANT HEMORRHAGE**

10:30 AM - 10:45 AM

**H-3. COST-EFFECTIVENESS OF OMALIZUMAB FOR THE TREATMENT OF ADULTS WITH MODERATE TO SEVERE PERSISTENT ASTHMA: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL IN JAPAN**
H-1. COST-EFFECTIVENESS OF PRIMARY HUMAN PAPILLOMAVIRUS (HPV) TESTING IN NORWAY

10:00 AM - 10:15 AM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: COST-EFFECTIVENESS ANALYSIS AND ECONOMIC EVALUATION

Emily Burger, MPhil¹, Jesse D. Ortendahl, BS², Stephen Sy, BS², Ivar Sønbø Kristiansen, MD, PhD, MPH¹ and Jane J. Kim, PhD², (1)University of Oslo, Oslo, Norway, (2)Harvard School of Public Health, Boston, MA

Purpose: Since 1991, the Norwegian Coordinated Cervical Cancer Screening Program has invited women to cytology-based screening every three years. Although a reduction in cervical cancer has been observed, it remains among the top three most frequent cancers for women aged 25-49 and may be further reduced by new screening technologies. In addition, vaccination against human papillomavirus, the necessary cause of cervical cancer, may impact optimal screening strategies. We evaluated the cost-effectiveness of alternative primary screening strategies for vaccinated and unvaccinated women to inform policy recommendations in Norway.

Method: We used likelihood-based methods to calibrate a first-order Monte Carlo simulation model to reflect the natural history of HPV-induced cervical cancer in Norway. The current screening strategy involving cytology only was compared to a strategy involving cytology at younger ages, followed by a switch to primary HPV-based screening, an option being actively considered by the Norwegian government. Pre-switch screening strategies included varying the management protocols for mildly abnormal results. Post-switch screening strategies included varying the age at which women switch to primary HPV testing (31 or 34 years), screening interval (3-6 years),...
and triage strategies for women with HPV-positive results. All costs were considered from the societal perspective. Additional sensitivity analysis included varying screening laboratory costs to reflect potential discrepancies between published reimbursement rates and true economic costs.

**Result:** Current cytology-only screening was less effective and more costly than proposed strategies that involve switching to primary HPV testing in older ages. For unvaccinated women, switching at age 31 to primary HPV testing every 4 years with cytology as a triage for HPV-positive results was most cost effective at 460,000NOK/YLS (≈$72,000/YLS) given a Norwegian cost-effectiveness threshold of approximately 500,000NOK/YLS (≈$78,000/YLS). For vaccinated women, the preferred screening strategy was the same, but with intervals widened to every 6-years after the switch age of 31. Strategies involving immediate diagnostic referral of young women with mildly abnormal cytology results were not cost-effective. By using published reimbursement rates for laboratory costs that were lower than our base-case estimates, we found that the optimal strategy for vaccinated women allowed for more intensive follow-up of HPV-positive women.

**Conclusion:** Strategies involving a switch to HPV testing for primary screening in older women is expected to be cost-effective, compared with current screening recommendations in Norway.

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**H-2. COST-EFFECTIVENESS OF USING TRANEXAMIC ACID INFUSION IN TRAUMA PATIENTS WITH SIGNIFICANT HEMORRHAGE**

10:15 AM - 10:30 AM: Tue. Oct 25, 2011  
Grand Ballroom CD (Hyatt Regency Chicago)  
**Part of Session:** COST-EFFECTIVENESS ANALYSIS AND ECONOMIC EVALUATION  

**María Clara Mendoza Arango, MD, Shihchen Kuo, RPh, MSCP, Carlos H. Morales Uribe, MD, MS, Juan C. Puyana, MD and Kenneth J. Smith, MD, MS, (1)University of Pittsburgh, Pittsburgh, PA, (2)University of Antioquia, Medellin, Colombia**

**Purpose:** Tranexamic acid (TXA) is an antifibrinolytic agent that decreased mortality in trauma patients with increased bleeding risk. We sought to determine cost effectiveness of general implementation of this pharmacological strategy in trauma patients with significant bleeding.

**Methods:** We developed a decision-analytical model to compare implementation of TXA infusion with no TXA infusion in trauma patients, modeling the clinical and economic consequences of these strategies in patients with significant bleeding risk early in their post-trauma care. Events included in the model were death, bleeding, vascular occlusion, drug-related adverse events and post-injury health status. Intervention costs fluctuations were modeled from the least expensive generic drug to the most expensive therapeutic brand; other costs were assumed to be equal between strategies, potentially biasing against TXA. Probabilities mainly came from
the CRASH-2 study, a large placebo controlled trial of the effects of early administration of a short course of TXA on death, vascular occlusive events, and the receipt of blood transfusion. This trial recruited 20,211 patients from 274 hospitals in 40 countries. Health state utilities were obtained from medical literature, reflecting the effect of possible adverse events due to antifibrinolytic treatment. The time horizon for the model was one year. Sensitivity analyses were performed to identify variables whose variation impacted base case model results.

**Results:** In the base case analysis, TXA gained 0.0381 more quality-adjusted life-years (QALYs) at an added cost of $160, or $4,199/QALY. In sensitivity analyses, TXA cost $2,205/QALY when drug costs were at the lower limit ($84, base case $160) and cost $32,018/QALY at the upper limit ($1,220). Results were also sensitive to variation of adverse events risk related to TXA, with the incremental cost-effectiveness ratio increasing to $65,570/QALY when this risk was fixed at 80% (base case 5%).

**Conclusions:** Our results favor TXA therapy in trauma patients over no TXA. The economic benefit of TXA is substantial in an analysis biasing against its use. Based on favorable clinical trial and economic analysis data, adoption of TXA in trauma treatment protocols should be recommended. *Funded by FIC NIH grant D43 TW007560 01*

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**H-3. COST-EFFECTIVENESS OF OMALIZUMAB FOR THE TREATMENT OF ADULTS WITH MODERATE TO SEVERE PERSISTENT ASTHMA: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL IN JAPAN**

10:30 AM - 10:45 AM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: **COST-EFFECTIVENESS ANALYSIS AND ECONOMIC EVALUATION**

*Toshitaka Morishima, MD, Hiroshi Ikai, MD, PhD and Yuichi Imanaka, MD, PhD, Kyoto University Graduate School of Medicine, Kyoto, Japan*

**Purpose:** Omalizumab, a recombinant humanized monoclonal anti-IgE antibody, reduces risk of exacerbations and improves health-related quality of life (HRQoL) among patients with moderate to severe persistent asthma. Several economic evaluations of omalizumab have been reported previously. Our objective was to evaluate cost-effectiveness of omalizumab, using results of a randomized controlled trial which enrolled Asian population for the first time and was conducted in Japan.

**Method:** We developed a Markov model comparing omalizumab plus standard therapy with standard therapy alone, on the basis of efficacy data from the randomized placebo-controlled double-blind trial and cost data of Japan. Our model had a lifetime horizon in which five-year omalizumab plus standard therapy was followed by standard therapy alone. The study cohort matched the clinical trial population with an average age of 50 and 50% men. Omalizumab provides different benefits for patients with persistent asthma, although no predictive factor for response
has been found. Non-responders who represented little effect of omalizumab reverted back to standard therapy after 16-week omalizumab therapy. We assumed that patients could transition every week among symptom-free state, day-to-day state, and exacerbation state, and that patients in asthma-related hospitalization state were at risk of dying from asthma exacerbation. We derived preference-based utility values from another study examining relationship between asthma control level and HRQoL because the clinical trial in Japan failed to measure HRQoL convertible into utilities. Costs from a societal perspective included estimates for drugs, medical resource uses, and lost productivity.

**Result:** The mean lifetime discounted costs and quality-adjusted life years (QALYs) were $118,000 and 16.097 for omalizumab plus standard therapy, and $47,000 and 16.003 for standard therapy alone. The incremental cost-effectiveness ratio (ICER) was $751,000/QALY. One-way sensitivity analyses indicated that the results were sensitive to asthma-related mortality, exacerbation rates, symptom-free rates, and omalizumab price.

**Conclusion:** The result of the base case analysis suggested that omalizumab was not cost-effective given a willingness to pay of $54,000 in Japan. However, omalizumab possesses a unique mechanism and is required for the treatment of persistent asthma. The cost-effectiveness of omalizumab would be improved if the price of omalizumab is cut down and omalizumab therapy is confined to patients with higher asthma mortality or exacerbation risk.

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**H-4. COST-EFFECTIVENESS OF SCREENING STRATEGIES FOR PEDIATRIC DYSGLYCEMIA**

10:45 AM - 11:00 AM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: COST-EFFECTIVENESS ANALYSIS AND ECONOMIC EVALUATION

**Joyce Lee, MD, MPH and Achamyeleh Gebremariam, MS, University of Michigan, Ann Arbor, MI**

**Purpose:** To evaluate the effectiveness and cost-effectiveness of four screening strategies for identifying overweight and obese adolescents with dysglycemia (prediabetes or diabetes) from a single-payer and societal perspective.

**Method:** We assumed that 2.5 million US children qualify for screening, with a 15% prevalence of dysglycemia (n=375,000 children). Test performance was based on a clinical study of nonfasting test performance. We calculated direct costs (testing costs) using Medicare reimbursement rates, and indirect costs (patient time costs) using data from the Bureau of Labor Statistics. Costs were expressed in $US2010. The 4 strategies considered included: (1)2-hour oral glucose tolerance test (2-hr OGTT)(positive greater than or equal to 140 mg/dl) only, or nonfasting initial screening tests [(2)HbA1c greater than or equal to 5.7%]; (3)random glucose(positive greater than or equal to 100 mg/dl); or (4)1-hour glucose tolerance test(1-hr OGTT)
(positive greater than or equal to 110 mg/dl)), followed by a 2-hr OGTT only if the initial test is positive. Outcomes included the proportion of cases identified, total screening costs, and cost per case identified. We also conducted sensitivity analyses assuming a 50% lower adherence for the 2-hr OGTT only strategy, and increases or decreases in the prevalence of dysglycemia(±25%).

**Result:** Compared with the other strategies, HbA1c was associated with a lower number of true positives, a higher number of missed cases, and higher total costs and a higher cost per case detected (direct and direct combined with indirect). This is highlighted in the figure which shows the "efficiency frontier", plotting effectiveness (% of cases of dysglycemia missed) against efficiency (cost per case). An ideal test is located near the origin. Although the 2-hr OGTT only strategy had high effectiveness and a lower cost per case identified, when we assumed only 50% adherence, screening effectiveness dropped to 50% with lower overall costs, but the same cost per case identified. At higher and lower estimates of prevalence, test effectiveness and overall costs did not change, but the cost per case increased or decreased by 25%.

**Conclusion:** HbA1c was an inferior test compared with the other test strategies. 1-hr OGTT and random glucose were intermediate regarding efficiency and effectiveness, and therefore may be viable strategies for dysglycemia screening in adolescents.
H-5. A PORTFOLIO APPROACH TO HIV CONTROL IN SOUTH AFRICA

11:00 AM - 11:15 AM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: COST-EFFECTIVENESS ANALYSIS AND ECONOMIC EVALUATION

Elisa F. Long, PhD, Yale University, New Haven, CT and Robert R. Stavert, MD, MBA, Yale School of Medicine, New Haven, CT

Purpose: With more than 400,000 annual new HIV infections in South Africa, scaling up prevention is an urgent priority. Many experts believe a portfolio of interventions is the best strategy for controlling the epidemic. We aimed to evaluate the cost-effectiveness of HIV intervention portfolios in South Africa, to maximize health benefits given limited resources.

Methods: We developed a dynamic HIV transmission model to evaluate combinations of HIV screening, antiretroviral therapy (2010 guidelines), male circumcision, vaccination, and vaginal microbicide use. The model includes disease transmission, progression, morbidity, and mortality among adults aged 15-49 in South Africa. Initial conditions were based on demographic, epidemiologic, and behavioral data, and parameters were adjusted using trial data on intervention efficacy. Three trials in sub-Saharan Africa indicated that male circumcision reduced transmission in heterosexual men by 48-60%; a 2009 Thailand trial found a vaccine regimen conferring 31% protection; a 2010 South Africa vaginal tenofovir microbicide trial indicated a 39% transmission reduction in women. Calculated outcomes include incidence, prevalence, quality-adjusted life years (QALYs), and cost-effectiveness. We extended our deterministic results to include a Monte Carlo simulation and probabilistic cost-effectiveness analysis to account for uncertainty in each intervention’s efficacy.

Results: Under the status quo, 1.43 million (men) and 1.64 million (women) new infections occur over 10 years. Increased male circumcision is cost-saving, reducing infections by 19% (men) and 7% (women). Broad use of a vaginal microbicide reduces incidence by 30% (women) and 11% (men) due to reduced secondary transmission, for $750/QALY assuming an annual microbicide cost of $100. Extensive vaccination reduces cases by 26%, for $880/QALY assuming $500 per vaccination series. A program offering circumcision, microbicides, and vaccination has diminishing returns, preventing 43% of cases. Alternatively, increased screening and antiretroviral therapy reduces incidence by 45%, for $800/QALY. A portfolio with all five interventions averts 69% of infections, and is cost-effective at $1,860/QALY. Monte Carlo simulation results suggest that such a strategy costs <$5,000/QALY in 87% of trials, and <$10,000/QALY in 94% of trials.

Conclusions: A comprehensive portfolio of expanded HIV screening, antiretroviral therapy, male circumcision, vaccination, and microbicide use prevents the greatest number of infections and is cost-effective. Male circumcision is cost-saving, but
differentially benefits men. Given resource constraints, the model can help identify the optimal portfolio of interventions.

**H-6. USE OF DEDICATED WINGS TO MAXIMIZE INSTITUTIONAL OBJECTIVES UNDER STRAINED BED CAPACITY**

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: **COST-EFFECTIVENESS ANALYSIS AND ECONOMIC EVALUATION**

**Thomas J. Best, MSc, Burhaneddin Sandikci, PhD, David O. Meltzer, MD, PhD and Donald D. Eisenstein, PhD, The University of Chicago, Chicago, IL**

**Purpose:** Many teaching hospitals with strained inpatient bed capacity struggle to maintain a mix of patients that satisfies their teaching, research, and financial needs. Even an increase in bed capacity is unlikely to address the patient mix problem. We investigate one such hospital that received special dispensation from the government to partition its inpatient beds into wings. Each wing is allocated a fixed number of beds and is restricted to a fixed set of clinical specialties. An admission request is granted only if a bed is available in the appropriate wing. We develop a modeling framework to investigate how best to form wings so as to optimize some function of patient mix.
Method: A dynamic programming (DP) model is formulated to optimize the wing configurations from the perspective of the hospital administrator. The model assumes a heterogeneous patient population that demands hospital services in a stochastic manner. The model maximizes the average DRG (Diagnosis Related Grouping) relative weights of admitted patients. Parameters are calibrated with data from the hospital and from national databases. In addition, we model length-of-stays as decreasing when a wing becomes more heavily demanded. This model of length-of-stays is supported with empirical evidence. The associated DP is too large to solve using standard methods. However, we are able to exploit special structures of the model that enables us to obtain near optimal solutions very quickly.

Result: If the total demand for hospital beds per day is, on average, sufficiently less than bed capacity, then the optimal solution is to avoid forming specialized wings. As average total demand for beds increases it becomes more advantageous to form multiple wings. In particular, our model shows that forming wings when the hospital services are heavily demanded will increase the average DRG relative weight, decrease the average overall occupancy, yet increase the number of patients admitted. The increase in patient flow is due to a decrease in length-of-stays for highly utilized wings.

Conclusion: Forming wings can be an effective strategy to deal with strained bed capacity. Our dynamic programming model informs hospital administrators about how to form wings that achieve a patient mix that better matches the mission of the hospital. The solutions are fast to obtain and easy to communicate.

I. INNOVATIVE METHODS LUSTED FINALISTS

« Previous Session  |  Next Session »

10:00 AM - 11:30 AM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Session Chairs:

• Jeremy D. Goldhaber-Fiebert, PhD
• A. David Paltiel, PhD

Session Summary:

10:00 AM - 10:15 AM

I-1. APPLYING DOUBLY ROBUST METHODS IN THE CONTEXT OF COST-EFFECTIVENESS ANALYSIS
10:15 AM - 10:30 AM

**I-2. DECISIONS, DECISIONS: CAN DIRECT-SEARCH OPTIMIZATION OF CONTINUOUS DECISION VARIABLES RESULT IN SUBSTANTIAL WELFARE GAINS COMPARED TO USUAL METHODS?**

10:30 AM - 10:45 AM

**I-3. APPLYING THE PAYOFF TIME FRAMEWORK TO CAROTID DISEASE MANAGEMENT**

10:45 AM - 11:00 AM

**I-4. EVALUATING THE ROLE OF ASPIRIN FOR CARDIOVASCULAR RISK MANAGEMENT FOR PATIENTS WITH TYPE 2 DIABETES**

11:00 AM - 11:15 AM

**I-5. USING AGENT-BASED SIMULATION TO EVALUATE POLICIES FOR CLOSTRIDIUM DIFFICILE INFECTION CONTROL IN A HOSPITAL**

11:15 AM - 11:30 AM

**I-6. EXPECTED UTILITY MODEL USED TO COMPARE THE VALUE OF SCREENING VERSUS DIAGNOSTIC MAMMOGRAPHY**

Abstracts:

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**I-1. APPLYING DOUBLY ROBUST METHODS IN THE CONTEXT OF COST-EFFECTIVENESS ANALYSIS**

10:00 AM - 10:15 AM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: **INNOVATIVE METHODS LUSTED FINALISTS**

Noemi Kreif\(^1\), Richard Grieve, PhD\(^1\), Rosalba Radice, PhD\(^1\), Susan Gruber\(^2\) and Jasjeet S. Sekhon, PhD\(^2\), (1)London School of Hygiene and Tropical Medicine, London, United Kingdom, (2)UC-Berkeley, Berkeley, CA

**Purpose:** For cost-effectiveness analyses (CEA) that use observational data the key methodological challenge is to minimize selection bias. Propensity score (Pscore) methods can reduce selection bias due to observable differences between treatment
groups; but the true Pscore model is generally unknown. Doubly robust (DR) methods exploit information in the Pscore and the response models, and provide unbiased estimates if either model is correctly specified. These methods hold promise for CEA, where selection bias needs to be minimized for the cost as well as the effectiveness endpoint. DR methods have not been examined before in this context.

**Method:** One implementation of DR methods is inverse probability of treatment weighting (AIPTW). The simple IPTW estimator weights observed cost and effectiveness endpoints with the inverse of the Pscore, to estimate incremental costs and effectiveness. AIPTW extends this by adjusting the formula with weighted predictions from the regression models of the respective endpoints. If a response model is correctly specified, adding this term can reduce bias. The adjustment also stabilises extreme Pscore weights, which can improve the precision of the IPTW estimator.

To compare the methods in a CEA, we evaluate Drotrecogin alfa activated (DrotAA), a pharmaceutical intervention for critically ill patients with severe sepsis. We use data from a published observational study (n=1,898). Potential confounders were selected a priori (e.g. age, APACHE II severity score). Higher order terms and interaction terms were considered, and regression models for both cost and effectiveness were selected by cross-validation. A two-part model was chosen for the QALY and a generalized linear model with gamma distribution for the costs. To maintain correlation between costs and effects, confidence intervals (CI) were constructed by nonparametric bootstrapping.

**Result:** The incremental net benefit (INB) (λ=£20,000 per QALY) for DrotAA following IPTW was -£4796 (95% CI: - 23927 to 14969). After applying AIPTW, the estimated INB was £4936. Stabilizing the extreme Pscore weights led to tighter CI (-3867 to 12229).

**Conclusion:** DR methods avoid relying solely on a correctly specified Pscore or response model, and can lead to different point estimates and narrower CI than IPTW. Recent work shows that DR methods, eg. collaborative targeted maximum likelihood, can minimize bias and be efficient even if neither the Pscore or response models are correct, offering further flexibility in CEA.

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I-2. DECISIONS, DECISIONS: CAN DIRECT-SEARCH OPTIMIZATION OF CONTINUOUS DECISION VARIABLES RESULT IN SUBSTANTIAL WELFARE GAINS COMPARED TO USUAL METHODS?

10:15 AM - 10:30 AM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: INNOVATIVE METHODS LUSTED FINALISTS

**Ankur Pandya, MPH,** Harvard University, Boston, MA, **Thomas Gaziano, MD, MSc,** Harvard Medical School, Boston, MA and **Milton C. Weinstein, PhD,** Harvard School of Public Health, Boston, MA
**Purpose:** In cost-effectiveness analyses (CEAs) involving continuous decision variables (such as screening rates or treatment thresholds), the strategies being evaluated are generally pre-specified using arbitrary thresholds or round numbers. The objective of this study was to evaluate the potential gains in welfare, defined by average net monetary benefit (NMB), from direct-search optimization of continuous decision variables (cardiovascular disease [CVD] screening/treatment thresholds) compared to solely focusing on pre-specified strategies.

**Method:** We used a CVD micro-simulation model to estimate the lifetime health benefits (quality-adjusted life years [QALYs]) and screening, treatment, and event costs under various multi-staged screening/treatment strategies for a representative cohort of 10,000 adults (aged 25-74 years) in the U.S. without history of CVD. Screening/treatment strategies were defined by the numbers of individuals receiving non-laboratory-based or cholesterol-based risk assessment, and by the proportions of individuals ultimately receiving lipid-lowering and/or blood pressure treatment. In total, 36 age- and sex-specific continuous decision variables collectively defined any screening/treatment strategy. Fifty pre-specified strategies were determined based on commonly-used treatment thresholds and/or plausible screening/treatment cutoffs that spanned a considerable range of the decision variable space. These strategies were compared to an optimized set of decision variables that was determined using the Nelder-Mead algorithm, a direct-search method that aimed to maximize average NMB (discounted at 3%, using a willingness-to-pay [WTP] value of $100,000/QALY). Common random numbers were employed to produce stable results across model runs.

**Result:** Among the pre-specified strategies, the optimal option under conventional incremental CEA rules yielded discounted per-person averages of 20.422 QALYs, costs of $12,734, and average NMB of $2.0295 million. The corresponding results from the direct-search optimization were 20.419 QALYs, costs of $11,456, and average NMB of $2.0305 million. Extrapolated to the relevant U.S. population eligible for primary CVD prevention (~136 million adults), the total difference in average NMB between these approaches would be >$130 billion.

**Conclusion:** We found that direct-search optimization of multistage CVD screening/treatment thresholds resulted in meaningful gains in welfare (average NMB) compared to a traditional CEA of pre-specified strategies. Future CEA studies involving many (>10) continuous decision variables might also benefit from employing direct-search or other optimization algorithms, although the gains in NMB should be weighed against potential losses from increased complexity of model results and subsequent clinical guidance (i.e., nuanced screening/treatment guidelines).
Theodore H. Yuo, MD¹, R. Scott Braithwaite, MD, MSc, FACP², Chung-Chou H. Chang, PhD³, Kevin L. Kraemer, MD, MSc³ and Mark S. Roberts, MD, MPP⁴, (1)RAND-University of Pittsburgh Health Institute, Pittsburgh, PA, (2)New York University School of Medicine, New York, NY, (3)University of Pittsburgh School of Medicine, Pittsburgh, PA, (4)University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA

**Purpose:** Asymptomatic carotid artery stenosis is associated with stroke, and while surgery to correct stenosis can reduce stroke risk, surgery can sometimes cause stroke immediately, leading to a net loss of benefit, especially in patient populations with a high baseline mortality rate. We model the relationship between immediate risk, long term benefit, and life expectancy in order to generate a simple, clinically relevant formula that can aid decisions about carotid surgery.

**Method:** We use the recently articulated concept of the “payoff time” to compare initial risks of surgery with subsequent benefits. Quality-adjusted life-years (QALYs) lost initially due to surgery are an “investment” that is recouped over time. If the patient cohort has a short life expectancy, this investment is not recovered. We sought simple closed-forms that defined the relationship between perioperative stroke risk ($P$), annual rate of stroke without surgery ($r_0$), annual rate of stroke after surgery conditional on not having had a perioperative stroke ($r_1$), utility levels assigned to the baseline state ($u_b$) and the stroked state ($u_s$), and life expectancy ($1/\lambda$), assuming the declining exponential approximation of life expectancy (DEALE). Numeric models, using parameters from the published literature, were constructed to verify mathematical solutions.

**Result:** In order for there to be a finite payoff time for carotid surgery to correct an asymptomatic stenosis, there is a minimum critical life expectancy (MCLE=$1/\lambda^*$), given by the following equation: $1/\lambda^* = P/(r_0-r_1)$. This relationship is independent of the utilities assigned to the health states, if a simple rank ordering exists where $u_b>u_s$. For clinically relevant values in asymptomatic patients ($P=3\%$, $r_0=1\%$, $r_1=0.5\%$), the MCLE is 6 years, which is longer than published guidelines regarding patient selection for this intervention. Figure 1 demonstrates that for a representative $1/\lambda>MCLE$, total cumulative QALYs associated with surgery, as compared to non-operative management, are greater than zero, but for a representative $1/\lambda<MCLE$, total cumulative QALYs are negative.
Conclusion: For patients with asymptomatic carotid disease, the payoff time framework specifies a \( MCLE = \frac{1}{\lambda^*} = \frac{P}{r_0 - r_1} \) as the life expectancy threshold that determines if there is any benefit from surgery. The MCLE is approximately 6 years, suggesting that many clinically relevant populations with asymptomatic carotid disease and short life expectancy do not benefit from surgery because they suffer too much perioperative harm compared to the benefit they receive.

I-4. EVALUATING THE ROLE OF ASPIRIN FOR CARDIOVASCULAR RISK MANAGEMENT FOR PATIENTS WITH TYPE 2 DIABETES

10:45 AM - 11:00 AM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: INNOVATIVE METHODS LUSTED FINALISTS

Jennifer E. Mason, MS\(^1\), Yuanhui Zhang\(^1\), Brian T. Denton, PhD\(^1\), Nilay D. Shah, PhD\(^2\) and Steven Smith, MD\(^3\), (1)North Carolina State University, Raleigh, NC, (2)Mayo Clinic, Rochester, MN, (3)Mayo Clinic College of Medicine, Rochester, MN

Purpose: To evaluate the role of aspirin together with the combined management of hyperlipidemia and hypertension in patients with type 2 diabetes.

Method: We present a Markov decision process model to determine the optimal start
times for the combination of aspirin and the most common cholesterol and blood pressure medications for patients with type 2 diabetes. Health states were defined by cholesterol, blood pressure, A1c, and other risk factors used by the United Kingdom Prospective Diabetes Study risk model. Transition probabilities and treatment effects were estimated from a longitudinal clinical dataset from the Mayo Clinic electronic medical record. Cost parameters and disutilities were taken from secondary sources. The objective of the model was to maximize expected rewards over the course of the patient’s lifetime. Rewards were defined by the difference in benefits of increased quality-adjusted life years (QALYs) to first event (including stroke, CHD, gastrointestinal bleed, and death from all causes) based on a societal willingness-to-pay factor, minus costs of medication. One-way sensitivity analysis was performed for the risk reduction factors for stroke and CHD, and the probability of gastrointestinal bleed.

**Result:** We computed the optimal treatment guidelines assuming availability of aspirin, statins, fibrates, ACE Inhibitors, Thiazides, and Beta-Blockers. For the base case the average incremental effect of adding aspirin is an increase of 0.736 QALYS and a decrease of $291 for males, and an increase of 0.434 QALYs and a decrease of $675 for females. Depending on individual CHD and stroke risk, females should initiate aspirin between the ages of 40 and 48; males should initiate aspirin at age 40, regardless of risk. Relative to the baseline, varying risk reduction for stroke from 0.85 to 1.06 resulted in a change in QALYs from 0.212 to -0.228. Varying risk reduction for CHD from 0.75 to 0.90 resulted in a change in QALYs from 0.215 to -0.230. Varying annual probability of gastrointestinal bleed from 0.0002 to 0.0005 resulted in a change in QALYs from 0.057 to -0.104. Across all cases the latest start times for males and females are 45 and 54 respectively.

**Conclusion:** Aspirin is beneficial for all patients with type 2 diabetes. The optimal time for initiation depends on the patient’s individual risk level and assumptions about aspirin effectiveness and risk of gastrointestinal bleeding.

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**I-5. USING AGENT-BASED SIMULATION TO EVALUATE POLICIES FOR CLOSTRIDIUM DIFFICILE INFECTION CONTROL IN A HOSPITAL**

11:00 AM - 11:15 AM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: **INNOVATIVE METHODS LUSTED FINALISTS**

**James V. Codella, MEng,** University of Wisconsin Madison, Madison, WI, **Nasia Safdar, MD,** University of Wisconsin School of Medicine and Public Health, Madison, WI and **Oguzhan Alagoz, PhD,** University of Wisconsin-Madison, Madison, WI

**Purpose:** *Clostridium difficile* infection (CDI) affects 500,000 Americans every year, and is responsible for nearly 20,000 deaths annually. Although there are guidelines to control CDI outbreaks in a hospital, there is a strong need to develop rigorous methods to assess the efficacy of these strategies. The purpose of this study is to evaluate the performance of strategies to mitigate disease spread in a hospital.
**Method:** We propose an agent-based simulation to model the effects of infection control strategies to minimize disease transmission rates, CDI-related mortality, and exposure. Agent-based simulation is ideal for studying the interaction between patients that results in disease transmission, because it tracks the behavior of patients, health-care staff, and visitors in the hospital. Patients arrive to the hospital, stay for a random duration, and then leave the system. During their stay, patients may develop CDI or contract CDI from other infected or exposed individuals in the hospital. We analyze the efficacy of various infection control strategies including prophylactic vancomycin treatment, patient isolation, routine bleach disinfection of rooms, and increased hand hygiene measures, and how these strategies affect outcomes such as infection rates and length of stay (LOS). We use data from admissions records from the Wisconsin Hospital Association, which include data from hospitals in the state of Wisconsin from January 2007 to June 2010, covering over two million hospital admissions.

**Result:** Comparing individual strategies to the base case (no strategy), our preliminary results are as follows: Vancomycin treatment leads to a 12.9% reduction in average LOS over all patients, 8.9% less CDI cases, and 5.5% fewer relapse CDI. Infected patient isolation leads to a 14.3% reduction in LOS, 4% fewer CDI cases, and 29.1% fewer relapse CDI. Routine bleach disinfection leads to a 16.6% reduction in LOS, 6.3% fewer CDI cases, and 31% fewer relapse CDI. Increased hand hygiene leads to a 6.1% reduction in LOS, 5% fewer CDI cases, and 10.9% fewer relapse CDI. Finally, a comprehensive strategy leads to 59.7% reduction in average LOS, a 25.2% reduction in new CDI, and a 74.1% reduction in relapse CDI.

**Conclusion:** Our agent-based model provides a rigorous analytical method for evaluating the efficacy of a customized strategy for combating CDI outbreaks in a hospital, thus leading to shorter LOS, fewer infections, and fewer relapses.

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**I-6. EXPECTED UTILITY MODEL USED TO COMPARE THE VALUE OF SCREENING VERSUS DIAGNOSTIC MAMMOGRAPHY**

Columbus Hall C-F (Hyatt Regency Chicago)  
Part of Session: INNOVATIVE METHODS LUSTED FINALISTS

**Yirong Wu, PhD¹, David J. Vanness, Ph.D.², Mehmet Ayvaci, MS¹, Oguzhan Alagoz, PhD¹ and Elizabeth S. Burnside, MD, MPH, MS¹, (1)University of Wisconsin-Madison, Madison, WI, (2)Department of Population Health Sciences, Madison, WI**

**Purpose:** To develop a maximum expected utility (MEU) model for assessing the value of diagnostic tests, and use this model to evaluate screening versus diagnostic mammography.

**Method:** We collected the records of 2,378 consecutive patients who underwent screening and follow-up diagnostic mammographic examinations from 2005-2008, which contained demographic risk factors and mammographic findings. Based on these features, we used a Bayesian network (BN) to estimate the risk of malignancy,
constructed a receiver operating characteristic (ROC) curve using the BN estimated probabilities, and determined the optimal operating point at which expected utility was maximized. We first trained and tested two BNs (one screening and one diagnostic) using the tree augmented naïve Bayes (TAN) algorithm and 10-fold cross-validation. We generated ROC curves and calculated area under each ROC curve (AUC). Then, we assigned utility values for each category of findings (True Negative (TN), False Positive (FP), False Negative (FN) and True Positive (TP)) as follows. TN findings were chosen as our baseline and assigned a utility of zero. Based on the literature, the utility of FP was assigned a loss of ten days due to physical discomfort and anxiety. We used the previously developed and validated University of Wisconsin Breast Cancer Simulation (UWBCS) model to estimate the utility of FN as a loss of 2.52 years. We assumed the utility of TP was U(FN) × (1-α), 0≤α≤1, where α is an unknown parameter representing the overall effectiveness of breast cancer treatment. Finally, we found MEU at the optimal operating point on the ROC curve that intersected the line with slope [(U(TN)-U(FP))/(U(TP)-U(FN))] x [(1-p)/p], where p is prevalence of breast cancer.

**Result:** Diagnostic mammography was overall more accurate than screening mammography (AUC: 0.936 vs. 0.773, p<0.001). The MEU of both diagnostic and screening mammography increased as α increased. MEU of diagnostic mammography exceeded that of screening mammography for all values of α, with the difference approximately equal to 0.012 when α≥0.5.

**Conclusion:** Diagnostic mammography has higher accuracy and MEU when compared to screening mammography. Our analysis indicates that MEU methods can provide a framework to assess the value of diagnostic tests in other clinical areas, making use of the relative consequences of correct and incorrect diagnosis.

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**BD4. INVITED SESSION: TBD 4**

1:00 PM - 2:30 PM: Tue. Oct 25, 2011  
Columbus Hall AB (Hyatt Regency Chicago)

**J. RISK COMMUNICATION AND RISK PERCEPTION**

1:00 PM - 2:30 PM: Tue. Oct 25, 2011  
Grand Ballroom EF (Hyatt Regency Chicago)  
**Session Chairs:**

- Christine M. Duffy, MD, MPH  
- William Dale, MD, PhD
Session Summary:

1:00 PM - 1:15 PM

**J-1.** THE EFFECT OF NARRATIVE CONTENT AND EMOTIONAL VALENCE ON DECISIONS ABOUT TREATMENTS FOR EARLY STAGE BREAST CANCER

1:15 PM - 1:30 PM

**J-2.** AVATARS AND ANIMATION OF RANDOMNESS IN RISK GRAPHICS HELP PEOPLE BETTER UNDERSTAND THEIR RISK OF CARDIOVASCULAR DISEASE

1:30 PM - 1:45 PM

**J-3.** LITERACY AND IRRATIONAL DECISIONS: BIAS FROM BELIEFS, NOT FROM COMPREHENSION

1:45 PM - 2:00 PM

**J-4.** DISGUSTING MEDICAL OUTCOMES FEEL MORE LIKELY THAN THEY REALLY ARE

2:00 PM - 2:15 PM

**J-5.** INTEGERS ARE BETTER: ADDING DECIMALS TO RISK ESTIMATES MAKES THEM LESS BELIEVABLE AND HARDER TO REMEMBER

2:15 PM - 2:30 PM

**J-6.** FEASIBILITY OF A WEB-BASED TREATMENT DECISION TOOL FOR OLDER PATIENTS WITH DIABETES
Abstracts:

J-1. THE EFFECT OF NARRATIVE CONTENT AND EMOTIONAL VALENCE ON DECISIONS ABOUT TREATMENTS FOR EARLY STAGE BREAST CANCER

1:00 PM - 1:15 PM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: RISK COMMUNICATION AND RISK PERCEPTION

Victoria A. Shaffer, PhD, University of Missouri-Columbia, Columbia, MO, Lukas Hulsey, BS, Wichita State University, Wichita, KS and Brian J. Zikmund-Fisher, PhD, University of Michigan, Ann Arbor, MI

Purpose: To examine the effect of narrative content and emotional valence on decisions about treatments for early stage breast cancer.

Method: 263 women were asked to imagine they had been diagnosed with early stage breast cancer, needed to choose between two surgical treatments (lumpectomy with radiation versus mastectomy), and were provided with one of five computer-administered sets of information about these two surgeries. In the control condition, participants viewed a table containing descriptions of the surgeries, the length of recovery time, need for radiation, and other decision relevant facts. In the four remaining conditions, participants viewed the same table plus four videotaped narratives, which varied in structure by a 2 (narrative content: process or experience) x 2 (emotional valence: positive or mixed) factorial design. Process narratives discussed the factors a woman considered when making her surgical decision, whereas experience narratives described what it was like to go through the surgery itself. Two narrative conditions used only positive narratives while the other two contained equal numbers of positive and negative narratives. After reviewing all materials, participants were asked to make a hypothetical treatment decision and complete several measures of reactions to the narratives and confidence in the decision process. Participants also completed the Subjective Numeracy Scale, the Need for Cognition scale, the Decision Quality Index and the Decision Conflict Scale.

Result: Providing narratives to participants had no effect on treatment decisions; approximately two-thirds of participants in all groups preferred lumpectomy and radiation. However, participants in the narrative conditions reported somewhat less uncertainty than participants in the control condition, $F(1, 261) = 3.66$, $p = .057$. Experience narratives were better than process narratives at increasing decisional confidence, feelings of preparedness, and the ability to imagine what it would be like to have a lumpectomy $F_s(1, 205) >4.65$, $ps < .05$. The mix of positive and negative narratives was perceived to be more emotional, $t(206) = -2.78$, $p = .006$, and produced a greater connection to the breast cancer survivors, $t(206) = -1.96$, $p = .05$, than positive narratives alone.

Conclusion: While providing narratives did not change participants’ treatment intentions, narratives appeared to lower decisional uncertainty, and a mixture of
positive and negative experience narratives may be most helpful to decision makers.

**J-2. AVATARS AND ANIMATION OF RANDOMNESS IN RISK GRAPHICS HELP PEOPLE BETTER UNDERSTAND THEIR RISK OF CARDIOVASCULAR DISEASE**

*1:15 PM - 1:30 PM: Tue. Oct 25, 2011*  
*Grand Ballroom EF (Hyatt Regency Chicago)*  
*Part of Session: RISK COMMUNICATION AND RISK PERCEPTION*

**Holly O. Witteman, PhD¹, Andrea Fuhrrel-Forbis¹, Mark Dickson, MA¹, Harindra C. Wijeysundera, MD² and Brian J. Zikmund-Fisher, PhD¹, (1)University of Michigan, Ann Arbor, MI, (2)Schulich Heart Center, Sunnybrook Health Sciences Center, Toronto, ON, Canada**

**Purpose:** To test whether using 1) an avatar (a figure representing an individual) and 2) animations of randomness in a pictograph help people better understand a personal health risk by explicitly showing 1) how population-based statistics apply to individuals and 2) the random element of risk estimates.

**Methods:** 3676 adults in a demographically diverse US-based online sample (mean age 53, 55% female, 78% white, 54% no college degree) with no history of cardiovascular disease entered their personal health information in a validated model that calculates 10-year risk of general cardiovascular disease (CVD risk). The median 10-year risk of CVD within this population was 8% (interquartile range 11%). Risk levels were classified as low if <5% (24% of participants), moderate if 5-9% (32%) and high if 10% or higher (45%). Participants were randomized to different versions of an animated pictograph showing their CVD risk. Pictographs either included an avatar or not, and were either standard versions that grouped all event rectangles together or versions that first displayed event rectangles randomly distributed in the pictograph before transitioning to a standard version. Participants answered a brief set of questions about their risk perceptions (how large or small the risk feels and how likely do they think they are to have CVD in the next ten years) and their behavioral intentions in the next 30 days. At the conclusion of the survey, participants were asked to recall their risk estimate.

**Results:** Using an avatar in the graphic increased perceptions of CVD likelihood for those at moderate and high risk (F(1,2792)=8.45, p=.004), but not for those at low risk. Using animated randomness made lower risks feel smaller and less likely, and higher risks feel larger (F(2,3623)=3.40, p=.03) and more likely (F(2,3669)=4.28, p=.01). Both avatars (F(2,3648)=6.03, p=.002) and animated randomness (F(2,3648)=3.95, p=.02) resulted in people at lower risk reporting lower intentions and those at higher risk reporting higher intentions to see a doctor in the next 30 days. Neither avatars nor animated randomness affected recall.

**Conclusions:** Using avatars and animated randomness can help convey difficult concepts in personal health risk. These types of design features are straightforward to implement in an online environment, require minimal viewing time, and suggest potential to improve the effectiveness of health risk communication methods.
J-3. LITERACY AND IRRATIONAL DECISIONS: BIAS FROM BELIEFS, NOT FROM COMPREHENSION

1:30 PM - 1:45 PM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: RISK COMMUNICATION AND RISK PERCEPTION

Laura Scherer, PhD¹, Peter A. Ubel, MD², Margaret Holmes-Rovner, PhD³, Sara J. Knight, PhD⁴, Stewart Alexander, PhD⁵, Bruce Ling, MD, MPH⁶, James Tulsky, MD² and Angela Fagerlin, PhD⁶, (1)VA HSR&D and University of Michigan, Ann Arbor, MI, (2)Duke University, Durham, NC, (3)Center for Ethics, E. Lansing, MI, (4)San Francisco VA Medical Center, San Francisco, CA, (5)University of Pittsburgh, Pittsburgh, PA, (6)Internal Medicine, Ann Arbor, MI

Purpose: Experts question whether certain decision-making biases are caused by low literacy. In this study, we explore whether decision-making biases are caused by low literacy per se, or if these biases can instead be explained by larger cultural factors, which are related to both literacy and patients’ medical beliefs.

Method: 574 men were recruited for a study about prostate cancer decisions. All of the men were undergoing prostate biopsies following a high PSA test. As a part of a larger questionnaire, each patient was asked to respond to a hypothetical cancer scenario. They were asked to choose between having surgery and accepting a 10% chance of dying from cancer, versus not having surgery (watchful waiting) and accepting a lower, 5% chance of dying from cancer. Past research has shown that a surprising number of people (~60%) choose the dominated surgery in this scenario. Just prior to this scenario, participants’ literacy (REALM) and numeracy (Subjective Numeracy Scale) were assessed. Patients were also asked questions about their beliefs about cancer treatment. These questions specifically assessed the patients’ bias toward active treatment options (e.g. “How important is it to treat cancer, whether or not it makes a difference in survival?”).

Result: 65% of the patients chose the dominated surgery option. As expected, participants who choose the dominated option were significantly lower in literacy than participants who chose the more rational treatment option (p < .01; numeracy did not predict choice, p > .10). However, the relationship between literacy and choice was mediated by participants’ desire for more active treatment. That is, literacy was not related to choice when controlling for participants’ desire for active treatment.

Conclusion: In the present scenario, the proximate cause of irrational decision making was patients’ desire for active treatment, rather than low literacy per se. Literacy predicted patients’ tendency to choose the dominated option, but only because literacy was related to general attitudes about active treatment. These data suggest that attempts to improve patient comprehension will not be successful at debiasing those patients. The fact that low literacy is related to preferences for active treatment suggests that there may be larger cultural factors at work that cause the present decision bias.
J-4. DISGUSTING MEDICAL OUTCOMES FEEL MORE LIKELY THAN THEY REALLY ARE

1:45 PM - 2:00 PM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: RISK COMMUNICATION AND RISK PERCEPTION

Andrea M. Angott, PhD, Duke University, Durham, NC, Holly Witteman, PhD, University of Michigan, Ann Arbor, MI and Peter A. Ubel, MD, Duke University, Durham, NC

Purpose: All else equal, rare outcomes should be given relatively little weight in decision making. But, when strong emotions like disgust are present, objectively unlikely outcomes may feel more likely than they really are. We examined this possibility, which could account for preference-inconsistent decisions.

Method: In two pilot studies, we asked 3428 participants to rate 24 descriptions of health states on several dimensions to determine states that were rated the same on quality-of-life but differently on how disgusting they were. The pair that best fulfilled these criteria – chronic diarrhea and severe fatigue – was used in subsequent studies. In Study 1, we asked a different group of 3094 participants, "If you had to choose, would you prefer a [x]% chance of [condition], or a [x]% chance of death?" where x = 4% or 100% for both outcomes, and the condition was chronic diarrhea or severe fatigue. If people overweigh small probabilities of disgusting events like chronic diarrhea, we would expect them to choose death over diarrhea more often at 4% probability than at 100%. Substituting a less disgusting outcome, severe fatigue, should then lead to less inconsistency across probabilities. In Study 2, we presented another group of 300 participants with two hypothetical medical treatments, one with a 4% chance of death, and the other with a 4% chance of a complication, either chronic diarrhea or severe fatigue. Participants rated how likely each possible outcome felt, how vulnerable they felt to each outcome, and estimated their own particular chance of experiencing each outcome. We examined the relationship between these ratings and participants' trait disgust sensitivity.

Result: In Study 1 (see figure), people chose death over diarrhea significantly more often at 4% than at 100% (40% vs. 28%, chi-square=15.89, p<0.01), while preferences for fatigue versus death did not change across probabilities (30% vs. 34%, chi-square=1.92, p=0.18). This difference between conditions was more pronounced among lower-numeracy participants. In Study 2, trait disgust sensitivity significantly predicted both likelihood (r = 0.19, p < 0.01) and vulnerability (r = 0.12, p = 0.02) ratings across both conditions.

Conclusion: These results support the idea that disgust, a medically-relevant emotion, exaggerates people's tendency to overweight small probabilities. This occurs independent of quality-of-life concerns, and appears more prevalent among lower-numeracy individuals.
J-5. INTEGERS ARE BETTER: ADDING DECIMALS TO RISK ESTIMATES MAKES THEM LESS BELIEVABLE AND HARDER TO REMEMBER

2:00 PM - 2:15 PM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: RISK COMMUNICATION AND RISK PERCEPTION

Holly O. Witteman, PhD¹, Brian J. Zikmund-Fisher, PhD¹, Erika A. Waters, PhD, MPH², Teresa Gavaruzzi, PhD³ and Angela Fagerlin, PhD⁴, (1)University of Michigan, Ann Arbor, MI, (2)Washington University School of Medicine, Saint Louis, MO, (3)University of Leeds, Leeds, United Kingdom, (4)VA Ann Arbor Healthcare System & University of Michigan, Ann Arbor, MI

Purpose: To determine whether the number of decimal places in a personal health risk estimate influences the extent to which people believe and remember the estimate.

Methods: 3422 adults in a demographically diverse US-based online sample (mean age 50, 52% female, 74% white, 56% no college degree) were asked to imagine they were visiting an online risk calculator hosted by a prominent university’s medical school. We designed a mock calculator similar to existing calculators available online. The calculator asked a series of health questions relevant to kidney cancer and returned a hypothetical estimate of lifetime risk of kidney cancer. In this between-subjects experiment, participants were assigned one of seven risk estimates close to the average lifetime risk of kidney cancer in the US. Participants who were randomized to the no decimals condition received an estimate of 2%. Those in the one, two or three decimals conditions received an estimate of 2.1% or 1.9% (one
Participants were asked to indicate how believable they found the estimate to be on a six-point scale anchored by labels, “not at all,” and “extremely.” Then, after completing a second, unrelated survey (median time for this task was 8 minutes), they were asked to recall to the best of their ability the kidney cancer lifetime risk estimate they had been given earlier.

**Results:** Risk estimates expressed as integers were judged as the most believable (F(3, 3384)=2.94, p=.03). Compared to estimates with decimal places, integer estimates were judged as highly believable (defined as the top two points of the six-point scale) by 7 to 10% more participants (Chi-squared(3)=17.82, p<.001). Recall was highest for integer estimates. Odds ratios for correct approximate recall (defined generously as being within 50% of the original estimate) were, for one decimal place, OR=0.65 (95% CI 0.49, 0.86), for two decimal places, OR=0.70 (95% CI 0.53, 0.94), and for three decimal places, 0.61 (95% CI 0.45, 0.81). Exact recall showed a similar pattern, with larger effects.

**Conclusions:** Using decimals in risk calculators offers no benefit and some cost. Rounding to the nearest integer is likely preferable for communicating risk estimates so that they might be remembered correctly and judged as believable.

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**J-6. FEASIBILITY OF A WEB-BASED TREATMENT DECISION TOOL FOR OLDER PATIENTS WITH DIABETES**

*2:15 PM - 2:30 PM: Tue. Oct 25, 2011*

*Grand Ballroom EF (Hyatt Regency Chicago)*

*Part of Session: RISK COMMUNICATION AND RISK PERCEPTION*


**Purpose:** We developed a web-based Geriatric Diabetes Decision Aid (GDDA) which combines a decision analytic model of DM complications with a geriatric life expectancy prediction tool. To date, little is known about the best ways to display the risk and benefits of varying levels of glycemic control to older patients with DM and their providers. We present the patients and provider acceptability testing of the GDDA.

**Methods:** 9 patients and 12 providers from local federally qualified health centers were interviewed utilizing qualitative methods regarding computer usage patterns, patient risk comprehension, as well as their opinions on methods of visually displaying the lifetime risk of amputation at different glycemic targets (A1c of 7, 8, and 9%). Options included a bar graph, tables, and pictograms. Patients and providers were also asked questions about the website’s overall usability and design. Interviews were audio recorded and transcribed for accuracy and theme saturation. Patients and
providers used the website throughout the interview.

**Results:** Mean patient age was 68 and 56% were female. Nine providers were male. All the providers were either in family or internal medicine. Four patients owned and used a computer regularly, three regularly used but did not own and two did not own or use computers. When tested on their knowledge of risk of amputation, only two patients failed to understand. Risk display results were different between patients and providers. Six patients preferred tables which showed the incidence of events per thousand patients. Seven providers thought patients would prefer pictograms for the different A1c targets. Patients and providers agreed that the use of color, pictures, large print, simple wording and easy to operate navigation and scroll buttons were a necessary part of the website design. All patients agreed that the GDDA is a tool that could assist in learning about A1c and discussing treatment goals with their doctor. All providers thought the GDDA could be a useful tool to stimulate conversation regarding A1c targets with their patients.

**Conclusions:** The GDDA is an instrument that may be able to assist patients and providers in determining individualized glycemic control targets. Pictures, simple wording, and easy navigation buttons can increase usability. Provider opinions should not be used as a proxy for patient opinions in determining the acceptability of website design.

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**K. HEALTH POLICY AND OUTCOMES RESEARCH in CANCER**

« Previous Session  |  Next Session »

1:00 PM - 2:30 PM: Tue. Oct 25, 2011  
Grand Ballroom CD (Hyatt Regency Chicago)  
**Session Chairs:**

- Elena B. Elkin, PhD  
- Mara Schonberg, MD, MPH

**Session Summary:**

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1:00 PM - 1:15 PM

**K-1. COST-EFFECTIVENESS OF ALTERNATING MRI AND DIGITAL MAMMOGRAPHY FOR SCREENING BRCA1 AND BRCA2 GENE MUTATION CARRIERS**

1:15 PM - 1:30 PM
K-2. BENEFITS AND HARMS OF MAMMOGRAPHY SCREENING AFTER AGE 74 YEARS: ESTIMATES OF OVERDIAGNOSIS

1:30 PM - 1:45 PM

K-3. COST-EFFECTIVENESS OF EPIDERMAL GROWTH FACTOR RECEPTOR GENE MUTATION TESTING FOR PATIENTS WITH ADVANCED NON-SMALL CELL LUNG CANCER LIVING IN ONTARIO, CANADA

1:45 PM - 2:00 PM

K-4. COST-EFFECTIVENESS OF A NOVEL PROSTATE CANCER DETECTION INDEX FROM A MANAGED CARE PAYER PROSPECTIVE

2:00 PM - 2:15 PM

K-5. COMPARING LIFETIME OUTCOMES FOR IMMEDIATE SURGERY VERSUS ACTIVE SURVEILLANCE FOR LOW RISK PROSTATE CANCER USING A THREE-PART MODEL

2:15 PM - 2:30 PM

K-6. QUANTITATIVE FECAL OCCULT BLOOD TESTING TO SCREEN FOR COLORECTAL CANCER: POTENTIAL ADVANTAGE OF LOWERING THE POSITIVITY THRESHOLD AND EXTENDING THE SCREENING INTERVAL

Abstracts:

K-1. COST-EFFECTIVENESS OF ALTERNATING MRI AND DIGITAL MAMMOGRAPHY FOR SCREENING BRCA1 AND BRCA2 GENE MUTATION CARRIERS

1:00 PM - 1:15 PM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH POLICY AND OUTCOMES RESEARCH in CANCER

Jessica Cott Chubiz, MS¹, Janie Lee, MD, MS¹, Michael E. Gilmore, MBA¹, Kathryn P. Lowry, BS², Elkan Halpern, PhD¹, Pamela McMahon, PhD¹, Paula D. Ryan, MD, PhD³ and G. Scott Gazelle, MD, MPH, PhD¹, (1)Massachusetts General Hospital, Boston, MA, (2)Harvard Medical School/Massachusetts General Hospital, Boston, MA, (3)Fox Chase Cancer Center, Philadelphia, PA
Purpose: To evaluate the incremental benefits and costs of adding magnetic resonance (MR) imaging to digital mammography (DM) screening in BRCA carriers.

Method: We used a Markov Monte Carlo model to compare four screening strategies to clinical surveillance (no imaging): 1) annual DM beginning at age 25 [DM25], 2) annual DM beginning at age 30 [DM30], 3) DM/MR beginning at age 25 [DM/MR25], and 4) DM/MR beginning at age 30 [DM/MR30]. For combined strategies, we examined DM/MR alternating at 6-month intervals. An excess relative risk model was used to incorporate radiation risk from DM. The primary outcomes were quality adjusted life years (QALYs), lifetime costs (2010 USD) and incremental cost-effectiveness ratios (ICERs).

Result: Adding MR to DM increased QALYs and costs in both BRCA1 and BRCA2 carriers (Table 1). The DM/MR25 and DM/MR30 strategies were equally effective; DM/MR30 was less costly. Compared to DM30, DM/MR30 resulted in 0.12 and 0.06 additional QALYs at a cost of $117,754 and $114,539 in BRCA1 and BRCA2 carriers, respectively. The ICERs for DM/MR30 vs DM30 were $70,105 (BRCA1) and $209,818 (BRCA2). For BRCA1 carriers, these results were most sensitive to MRI cost, lifetime breast cancer risk, age at prophylactic oophorectomy, and MR test performance. Varying MR cost in BRCA1 carriers resulted in the widest range of ICER values. As MR cost increased to $842 (base case: $619), the ICER for DM/MR30 vs. DM30 exceeded $100,000/QALY. As MR cost decreased to $363, the ICER fell below $50,000/QALY. The results in BRCA2 carriers were stable across the range of parameters examined in sensitivity analysis.

Conclusion: Combined DM/MR screening alternating at six month intervals beginning at age 30 is considerably more cost-effective in BRCA1 carriers than in BRCA2 carriers.

Table 1. Incremental cost-effectiveness of screening in BRCA1 and BRCA2 carriers.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>BRCA1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime costs</td>
<td>$104,490</td>
<td>$109,006</td>
<td>$110,420</td>
<td>$117,754</td>
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<td>QALYs (y)</td>
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<td>44.25</td>
<td>44.25</td>
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<td>ICER ($/QALY)</td>
<td>-</td>
<td>$15,294</td>
<td>Eliminated</td>
<td>$70,105</td>
<td>$480,300</td>
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<tr>
<td><strong>BRCA2</strong></td>
<td></td>
<td></td>
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<tr>
<td>Lifetime costs</td>
<td>$97,121</td>
<td>$102,204</td>
<td>$103,726</td>
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<td>$119,678</td>
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<td>QALYs (y)</td>
<td>45.22</td>
<td>45.52</td>
<td>45.51</td>
<td>45.58</td>
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<tr>
<td>ICER ($/QALY)</td>
<td>-</td>
<td>$17,078</td>
<td>Eliminated</td>
<td>$209,818</td>
<td>Eliminated</td>
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K-2. BENEFITS AND HARMS OF MAMMOGRAPHY SCREENING AFTER AGE 74 YEARS: ESTIMATES OF OVERDIAGNOSIS

1:15 PM - 1:30 PM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH POLICY AND OUTCOMES RESEARCH in CANCER

Nicolien T. van Ravesteyn, Eveline A.M. Heijnsdijk, PhD and Harry J. de Koning, PhD, MD, Erasmus MC, Rotterdam, Netherlands

Purpose: Mammography screening has been found to reduce breast cancer mortality, but is also accompanied by harms, such as overdiagnosis. Overdiagnosis refers to the detection of tumors that would not have been detected in a woman’s lifetime in the absence of screening. Estimates of the amount of overdiagnosis vary widely. The aim of the present study is to estimate the amount of overdiagnosis for invasive breast cancer and ductal carcinoma in situ associated with screening women after age 74 years.

Method: The microsimulation model MISCAN-Fadia was used to simulate a cohort of women born in 1960. All women received biennial screening starting at age 50 with varying stopping ages of screening. First, we simulated the screening currently recommended, i.e., biennial screening from age 50 to 74 years, and determined the benefits and harms of the last screen at age 74 years. Then, the additional benefits and harms of adding one screen were estimated with increasing stopping ages. We estimated the number of life years gained, quality-adjusted life years, breast cancer deaths averted, false positives and number of overdiagnosed women for each screening scenario.

Result: The model predicted that screening after age 74 years resulted in benefits in terms of breast cancer deaths averted and life years gained with no upper age limit. The number of quality-adjusted life-years gained increased for screening up to age 90 years. The number of overdiagnosed women increased steeply with increasing upper age of screening. For screening women between age 50 and 74 years 4% of the invasive breast cancers that were detected were overdiagnosed, increasing to 13% for a screen at age 80 years, and 30% for a screen at age 90 years.

Conclusion: Screening women after age 74 years results in a less favorable balance of benefits and harms than screening women between the ages of 50 and 74 years, because of the increasing amount of overdiagnosis at older ages. Decisions on the appropriate upper age depend on individual preferences. Estimates of overdiagnosis are crucial to inform women about the balance of benefits and harms of mammography screening at higher ages.

K-3. COST-EFFECTIVENESS OF EPIDERMAL GROWTH FACTOR RECEPTOR GENE MUTATION TESTING FOR PATIENTS WITH ADVANCED NON-SMALL CELL LUNG CANCER LIVING IN ONTARIO, CANADA

1:30 PM - 1:45 PM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
**Part of Session:** HEALTH POLICY AND OUTCOMES RESEARCH in CANCER

**Wendong Chen, MD, PhD¹**, Peter Ellis, MD, PhD² and Murray D. Krahn, MD, MSc¹,
(1)University of Toronto, Toronto, ON, Canada, (2)Juravinski Cancer Centre, Hamilton, ON, Canada

**Purpose:** To assess the cost-effectiveness of epidermal growth factor receptor (EGFR) gene mutation testing to guide the selection of gefitinib as first-line therapy in patients with advanced non-small cell lung cancer (NSCLC) in Ontario.

**Method:** A decision analytic model was developed to conduct this cost-effectiveness analysis from the perspective of the Ontario Ministry of Health and Long-Term Care (MOHLTC). Under EGFR gene mutation testing strategy, tumour tissues from biopsy were assessed for EGFR gene mutation status. Patients with EGFR gene mutation would receive gefitinib as first-line therapy and conventional chemotherapy (platinum based chemotherapy and docetaxel (or pemetrexed)) before best supportive care (BSC). Patients without EGFR gene mutation would receive conventional chemotherapy and BSC. The other patients with undetermined EGFR gene mutation status would receive the same care as the patients under no testing strategy, who would receive conventional chemotherapy, erlotinib, and BSC. Literature review was conducted to estimate the epidemiology and natural history of advanced NSCLC, failure rate of EGFR gene mutation testing, and efficacy of treatments. A regression analysis on utility of patients with advanced NSCLC was applied to estimate utility variables. The estimation of cost variables was based on two Ontario cost studies for advanced NSCLC. Both benefits and costs were discounted at 5% per annum.

**Result:** Compared to no testing strategy, EGFR gene mutation testing strategy would need $46,021 for one additional life year or $81,071 for one additional quality adjusted life year (QALY). One-way sensitivity analysis indicated that the cost-effectiveness of EGFR gene mutation testing was highly sensitive to the efficacy and cost of gefitinib. Probabilistic sensitivity analysis suggested that the chance for EGFR gene mutation testing to be cost-effective would not be over 50% until willingness-to-pay (WTP) per QALY increased to $93,340. Budget impact analysis predicted that the adaption of EGFR gene mutation testing would increase the annual direct medical costs by $4.6M, $7.0M, $7.9M, $8.1M, and $8.1M from 2011 to 2015 respectively on the Ontario health care system.

**Conclusion:** Applying EGFR gene mutation testing to guide the use of gefitinib as first-line therapy for patients with advanced NSCLC would not be considered cost-effective until WTP of MOHLTC was over $81,071 per QALY. The cost-effectiveness of EGFR gene mutation testing was highly sensitive to the efficacy and cost of gefitinib.
Purpose: To assess the cost-effectiveness of early prostate cancer detection with a novel prostate cancer detection index* added to serum prostate-specific antigen (PSA) compared with PSA alone test from a managed care organization perspective.

Method: The prostate cancer detection index is a mathematical formula combining Access Hybritech PSA, free PSA, and a PSA precursor form [-2]proPSA, to predict prostate cancer. It is used as an aid in distinguishing prostate cancer from benign prostatic conditions in men with a PSA test result ≥2 or ≥4 ng/mL and nonsuspicious digital rectal exam. A Markov model was constructed to estimate the expected costs and utilities of prostate cancer detection and consequent treatment under four testing strategies in men aged 50 through 75 years. The testing strategies varied in test thresholds (PSA ≥2 or ≥4 ng/mL) and methods (PSA alone vs. PSA plus the index) to recommend a prostate biopsy. The transition probabilities were from the electronic medical records analysis for male members in Kaiser Permanente Southern California (KPSC) during 1998-2007. Health state utilities and prostate cancer treatment costs were derived from the published literature. The model’s cycle length was 1.5 years based on KPSC’s usual practices.

Result: The most cost-effective strategy is to use PSA plus the index at PSA 2-10 ng/mL to estimate the probability of prostate cancer and recommend a biopsy, which has the lowest costs and highest effectiveness [cost/effectiveness (C/E)=13,650/12.416, $1,099/QALY]. Next is PSA plus the index at PSA 4-10 ng/mL [C/E=14,095/12.364, $1,140/QALY), followed by PSA test alone using PSA threshold ≥4 ng/mL [C/E=15,256/12.304, $1,240/QALY), and finally, PSA ≥2 ng/mL [C/E=15,789/12.287, $1,285/QALY). The strategy of PSA plus the index at PSA 2-10 ng/mL displays a 74% to 86% probability of being cost-effective at a willingness-to-pay range of 0 to $150,000/QALY gained. Variables including discount rate, starting or stopping age for PSA screening, and health utility of cancer have the most impact on the model.

Conclusion: From a managed care payer prospective, using the index as an aid to distinguish prostate cancer from benign prostatic conditions at PSA 2-10 ng/mL dominated other strategies, and was optimal in all strategies under the willingness-to-pay of $150,000/QALY. This strategy could be an important method of prostate cancer detection and improving men’s health outcome. *Not currently available in the U.S.
K-5. COMPARING LIFETIME OUTCOMES FOR IMMEDIATE SURGERY VERSUS ACTIVE SURVEILLANCE FOR LOW RISK PROSTATE CANCER USING A THREE-PART MODEL

2:00 PM - 2:15 PM: Tue. Oct 25, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: HEALTH POLICY AND OUTCOMES RESEARCH in CANCER

Steven B. Zeliadt, PhD, VA Puget Sound Healthcare System, Seattle, WA, Ruth Etzioni, PhD, Fred Hutchinson Cancer Research Center/ University of Washington, Seattle, WA and Jing Xia, PhD, Fred Hutchinson Cancer Research Center, Seattle, WA

Purpose: To coherently integrate multiple sources of available evidence to project lifetime outcomes for newly diagnosed men considering immediate treatment or active surveillance (AS).

Method: Lifetime estimates of time from treatment to progression (T-P) and time from progression to mortality (P-M) were estimated for the 11,347 men diagnosed in 2004-2006 in the SEER cancer registry with low-risk disease (≤ grade 6 and ≤ stage T2a) who were treated immediately with surgery. Over 38% of all patients diagnosed during these years had low-risk disease. Outcomes under an alternative scenario of active surveillance were estimated for this cohort. Estimates for this scenario integrated a model for diagnosis to delayed treatment (D-T) including parameters for grade and PSA progression, with the same T-P and P-M models. Estimates of the potential harm of surveillance were based on advanced disease characteristics at time of delayed treatment. Large cohorts from CaPSURE, Johns Hopkins, and Mayo Clinic were used to inform the models.

Result: With immediate surgery, 26% of low-risk patients will experience biochemical failure and 1.8% will die from prostate cancer. The sampled surgery included only men who were low grade and only 37% had a PSA ≥6. The surveillance scenario resulted in 58% of patients going on to be treated, with 34% upgraded at time of treatment and 59% having a PSA ≥6. Although disease characteristics were more advanced at the time of delayed treatment, there were no additional deaths due to prostate cancer with surveillance and only a total of 18% of men experienced biochemical failure. Mean life expectancy for low-risk men treated with surgery between 2004-2006 is projected to be 19.5 years. Under the surveillance scenario, had this cohort selected surveillance they would have experienced only 11.3 treated-person years.

Conclusion: Although active surveillance is associated with more advanced disease characteristics for some low-risk men who go on to be treated, projections of mortality based on these upgraded disease states did not result in any additional deaths. Surveillance offers a substantial reduction in the number of treated-person years. Models can help integrate multiple sources of data to help overcome the extremely long time required to observe outcomes in prospective studies between diagnosis and prostate cancer mortality.
Purpose: Quantitative fecal occult blood tests (FOBTs) allow to specify the positivity threshold. We compared colorectal cancer (CRC) screening strategies with quantitative FOBTs, varying the positivity threshold and adapting the screening interval accordingly (longer intervals for better sensitivity).

Method: We used a Markov state-transition model of CRC to calculate life-years and the lifetime number of screening-related tests (FOBTs and follow-up/surveillance colonoscopies; the number of both procedures were combined using their US cost ratio as weighting factor) for a cohort of US 50-year-olds to whom FOBT screening is offered. We compared 2 strategies: 1) FOBT with per-test specificity of 95% in combination with a screening interval of 1 year (FOBT95-1y) and 2) FOBT with per-test specificity of 80% in combination with a screening interval of 5 years (FOBT80-5y). We selected specificity and screening interval combinations such that both strategies had a similar chance that an individual would experience a false positive FOBT result during the screening program. Per-test sensitivities for FOBT95-1y and FOBT80-5y were assigned according to ROC curve projections (15% and 30% for small precursor lesions, 35% and 50% for large precursor lesions, and 70% and 90% for CRC, respectively). We assumed perfect adherence in the base-case analyses. In sensitivity analyses, we used recent US data on longitudinal adherence with FOBT screening in community practice that showed that of those who attended FOBT screening, 42%, 44% and 14%, respectively, received 1, 2-3, and 4 or more FOBTs during the 5-year study period.

Result: In the base-case analyses, FOBT95-1y saved 22% more life-years and the number of screening-related tests was 29% higher compared to FOBT80-5y. When using observed data on longitudinal adherence with FOBT, the effectiveness of FOBT95-1y decreased by one third compared with the base-case analyses. The FOBT80-5y strategy was now more effective (given the higher per-test sensitivity), saving 19% more life-years, while requiring 17% more screening-related tests compared with FOBT95-1y.

Conclusion: Taking into account that regular adherence with yearly FOBT screening is low, the potential benefit of this screening strategy is not realized in practice. Lowering the positivity threshold of quantitative FOBT (yielding a higher per-test sensitivity and a lower per-test specificity) in combination with an extended screening interval could be a pragmatic approach to optimize FOBT screening in view of real-life
adherence patterns.

L. HEALTH ECONOMICS LUSTED FINALISTS.

« Previous Session | Next Session »

1:00 PM - 2:30 PM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Session Chairs:

- Ahmed M. Bayoumi, MD, MSc
- Phaedra Corso, PhD

Session Summary:

1:00 PM - 1:15 PM

L-1. OPTIMAL SURVEILLANCE SCHEDULES FOR LOW RISK BLADDER CANCER PATIENTS

1:15 PM - 1:30 PM

L-2. ESTIMATING THE COST OF NO-SHOWS AND EVALUATING THE EFFECTS OF MITIGATION STRATEGIES

1:30 PM - 1:45 PM

L-3. A TRIAL OF LABOR AFTER CESAREAN DECISION ANALYSIS: THE IMPACT OF FUTURE PREGNANCIES

1:45 PM - 2:00 PM

L-4. MODELING CARE UTILIZATION RATIOS TO GUIDE SURGE RESPONSES FOR NON-CRISIS EVENTS

2:00 PM - 2:15 PM

L-5. THE COST-EFFECTIVENESS OF IMPROVEMENTS IN PREHOSPITAL TRAUMA TRIAGE IN THE U.S
**L-1. OPTIMAL SURVEILLANCE SCHEDULES FOR LOW RISK BLADDER CANCER PATIENTS**

*1:00 PM - 1:15 PM: Tue. Oct 25, 2011*

*Columbus Hall C-F (Hyatt Regency Chicago)*

*Part of Session: HEALTH ECONOMICS LUSTED FINALISTS.*

Yuan Zhang, M.S.\(^1\), Matthew Nielsen, MD\(^2\) and Brian T. Denton, PhD\(^1\), (1)North Carolina State University, Raleigh, NC, (2)University of North Carolina, Chapel Hill, NC, USA, Chapel Hill, NC

**Purpose:** Bladder cancer has a heterogeneous natural history and a substantial plurality (40%) of incident cases are low grade non-muscle-invasive (NMIBC), with comparatively low risk of progression to life-threatening disease. Practice guidelines for NMIBC suggest intensive surveillance cystoscopy schedules with a limited evidence base, and there is a lack of consensus among the different guidelines for low risk NMIBC.

**Method:** We use a Partially Observable Markov Decision Process (POMDP) to investigate the optimal schedule of cystoscopies that maximizes expected quality adjusted life years (QALYs). Our model classifies patients into three risk levels with transition probabilities for health states taken from the EORTC risk calculator’s recurrence and progression probabilities. Mortality rates are taken from the CDC Vital Statistics Report, and parameters for utility of health states, and disutility of cystoscopy are drawn from the medical literature. Model validation is based on comparison of outputs to published survival data for patients diagnosed with bladder cancer.

**Result:** We compared the optimal schedule of cystoscopies from our model with the American Urology Association (AUA) and the European Association of Urology (EAU) guidelines for male and female patients aged 50 to 70. The optimal schedule for the base case scenario results in a 0.4 gain in expected QALYs over EAU and AUA guidelines for a 50 year old low risk male patient. Base case results indicate that older patients should receive less intensive surveillance than younger patients and female patients should undergo slightly more intensive surveillance than similar male patients. Optimal schedules are more intensive than EAU, and less intensive than AUA in the first 5 years of surveillance. Sensitivity analysis indicates that the optimal schedule is highly sensitive to the disutility of cystoscopy. For example, the total number of cystoscopies in the first 10 years increases from 10 to 40 when the disutility of cystoscopy drops from 0.05 to 0.01.
Conclusion: Whereas current American guidelines recommend a one-size-fits-all regimen, current European guidelines are based on explicit risk stratification, underscoring uncertainty in this area. We find that surveillance for low risk NMIBC patients should consider patient age, gender, co-morbidity and most of all, disutility of cystoscopy. Optimal schedules can result in considerable QALY gains, particularly for younger patients, compared to current guidelines.

L-2. ESTIMATING THE COST OF NO-SHOWS AND EVALUATING THE EFFECTS OF MITIGATION STRATEGIES

1:15 PM - 1:30 PM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS.

Bjorn Berg, BA1, Michael Murr, BS1, David Chermak, BS1, Jonathan Woodall, MS1, Michael Pignone, MD, MPH2 and Brian T. Denton, PhD1, (1)North Carolina State University, Raleigh, NC, (2)University of North Carolina at Chapel Hill, Chapel Hill, NC

Purpose: To measure the cost of no-shows and benefit of no-show interventions and overbooking for an outpatient endoscopy suite.

Method: We used a discrete event simulation model based on an outpatient endoscopy suite at UNC Hospital in Chapel Hill, NC, to measure the effect of no-shows on expected net gain. Expected net gain is defined as the difference in expected revenue based on CMS reimbursement rates and variable costs based on the sum of patient waiting time and provider and staff overtime. To build the model, we used a combination of historical time stamp data and time studies to estimate probability distributions for all parts of the endoscopy process including intake, procedure, and recovery times. No-show rates were estimated from historical attendance (18% on average). We used reported improvements in no-show rates from published intervention studies, such as phone reminders, and pre-assessment clinics, with relative reductions in no-show rates ranging from 34.5% to 75.5% to measure their associated effects on expected net gain. In addition to no-show interventions, we evaluated the effectiveness of scheduling additional patients (overbooking) on the expected net gain. We compared interventions and overbooking to a perfect attendance scenario of n=24 patients (the reference scenario) on the basis of expected net gain.

Result: The daily expected net gain with perfect attendance (reference scenario) is $4,433.32. The daily loss attributed to the base case no-show rate of 18% is $725.42 (16.36% of net gain). This loss is sensitive to the no-show rate, ranging from $472.14 to $1,019.29 (10.65% to 22.99% of net gain) for no-show rates of 12% and 24%, respectively. The daily loss relative to the reference scenario associated with implementing no-show interventions ranges from $166.61 to $463.09 (3.76% to 10.45% of net gain). The overbooking policy of 37.5% additional patients resulted in no loss in expected net gain when compared to the reference scenario.
Conclusion: No-shows can significantly decrease the expected net gain of outpatient procedure centers. Interventions such as phone reminders and pre-assessment clinics reduce the no-show rate; but can be costly, challenging to implement, and do not resolve the problem entirely. Overbooking can help mitigate the impact of no-shows on a suite's expected net gain and has a lower expected cost of implementation to the provider.

L-3. A TRIAL OF LABOR AFTER CESAREAN DECISION ANALYSIS: THE IMPACT OF FUTURE PREGNANCIES

1:30 PM - 1:45 PM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS.

Karla Solheim, BS¹, Yvonne Cheng, MD, MPH², Jeanne-Marie Guise, MD, MPH³, Yasser El-Sayed, MD⁴ and Aaron B. Caughey, MD, MPP, MPH, PhD³, (1)University of California, San Francisco, San Francisco, CA, (2)University of California, San Francisco, CA, (3)Oregon Health & Sciences University, Portland, OR, (4)Stanford University, Palo Alto, CA

Purpose: To analyze the decision for trial of labor after one prior cesarean compared with elective repeat cesarean, considering outcomes in future pregnancies in the analysis.

Method: A decision analytic model was designed from the maternal perspective comparing elective repeat cesarean delivery (ERCD) and trial of labor after cesarean (TOLAC). Baseline assumptions included a theoretical cohort of 300,000 women who had experienced only one prior pregnancy delivered via cesarean. Outcome probabilities were derived from the literature for major morbidities, including uterine rupture, maternal death, neonatal death, cerebral palsy, hysterectomy, and future placenta accreta. Costs and utilities taken from the literature were also applied to outcomes. Univariate and multivariate sensitivity analyses on key variables as well as a Monte Carlo simulation were performed for model validation.

Result: ERCD was associated with more accretas (903 vs. 655) and more cesarean hysterectomies (2049 vs. 1602) but fewer uterine ruptures (2693 vs. 0) than TOLAC. Overall, TOLAC was the preferred strategy, resulting in 3,900 additional QALYs for the entire cohort. A one-way sensitivity analysis found the risk of uterine rupture must reach 3.6% before performing an elective repeat cesarean becomes preferred. TOLAC was also cost-saving, costing $1380 less per delivery, for a total cost savings of $414M for the cohort. Even when the model was limited to the 2nd pregnancy, a trial of labor remained the dominant strategy, requiring a threshold of 2.7% for uterine rupture before elective cesarean became the preferred option. Sensitivity analyses and a Monte Carlo simulation validated the robustness of the model over a broad range of inputs.

Conclusion: TOLAC leads to better outcomes on average than ERCD for women with one prior cesarean even without a history of prior vaginal births. The model's
preference for TOL is magnified if future pregnancies are anticipated, given the potential morbidity of future placental abnormalities. TOLAC is also cost saving.

Table: Cost-effectiveness of TOLAC versus ERCD after one prior CD

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Additional QALYs in TOLAC over ERCD</th>
<th>Decreased cost in TOLAC over ERCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All second pregnancies</td>
<td>+3,900</td>
<td>-$414,000,000</td>
</tr>
<tr>
<td>No third pregnancy</td>
<td>+2,700</td>
<td>-$248,000,000</td>
</tr>
<tr>
<td>Third pregnancy assumed</td>
<td>+5,400</td>
<td>-$561,000,000</td>
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</table>

L-4. MODELING CARE UTILIZATION RATIOS TO GUIDE SURGE RESPONSES FOR NON-CRISIS EVENTS

1:45 PM - 2:00 PM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS.

Valerie Chase, Mariel S. Lavieri, PhD, Amy Cohn, PhD and Tim Peterson, MD, University of Michigan, Ann Arbor, MI

Purpose: We investigate the use of statistical models to identify surges in emergency department (ED) volume based on the level of utilization of physician capacity. Our models may be used to guide staffing decisions in non-crisis related
patient volume increases.

**Method:** Patient visits to a large urban teaching hospital with a Level 1 trauma center were collected from July 2009 – June 2010. A comparison of significance was used to assess the impact of multiple variables on the state of the ED. Historical physician utilization data was used to model physician capacity. Binary logistic regression analysis was used to predict the probability that the physician capacity would be sufficient to treat all patients forecasted to arrive. The predictions were performed by various time intervals: 15 minutes, 30 minutes, 1 hour, 2 hours, 4 hours, 8 hours and 12 hours. The models were validated against 5 consecutive months of similar patient data from July – November 2010. Models and forecast accuracy were evaluated by positive predictive values, Type I and Type II errors, and real-time accuracy in predicting non-crisis surge events.

**Result:** The ratio of new patients to treat to total physician capacity - termed the “Care Utilization Ratio (CUR)” - was deemed to be a robust predictor of the state of the ED (with a CUR ratio greater than 1 indicating that the physician capacity is not sufficient to treat all patients forecasted to arrive). Among the models investigated, prediction intervals of 30 minutes, 8 hours and 12 hours performed best with deviances of 1.000, 0.951 and 0.864 respectively. The models were validated against the July – November 2010 data set using significance of 0.05. For the 30-minute prediction intervals, the positive predictive values ranged from 0.738 to 0.872, true positives ranged from 74% to 94%, and true negatives ranged from 70% to 90% depending on the threshold used to determine the state of the ED.

**Conclusion:** We identified a new and robust indicator of the system’s performance: CUR. By investigating different prediction intervals, we were able to model the tradeoff of longer time to response versus shorter but more accurate predictions. Our proposed models would’ve allowed for an earlier identification of surge in patient volume on “non-crisis” days than current practice.

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**L-5. THE COST-EFFECTIVENESS OF IMPROVEMENTS IN PREHOSPITAL TRAUMA TRIAGE IN THE U.S**

2:00 PM - 2:15 PM: Tue. Oct 25, 2011
Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: HEALTH ECONOMICS LUSTED FINALISTS.

**M. Kit Delgado, MD**¹, David A. Spain, MD², Kristan Staudenmayer, MD, MS¹, Sharada Weir, Ph.D.² and Jeremy D. Goldhaber-Fiebert, PhD³, (1)Stanford University School of Medicine, Stanford, CA, (2)University of Massachusetts Medical School, Shrewsbury, MA, (3)Stanford University, Stanford, CA

**Purpose:** Trauma centers (TC) reduce mortality by 25% for severely injured patients but cost significantly more than non-trauma centers (NTC). The CDC’s 2009 prehospital emergency medical services (EMS) guidelines seek to reduce undertriage of these patients to NTC to <5% and reduce overtriage of minor injury patients to TC to <25%. We assessed the cost-effectiveness of improving prehospital trauma triage...
in U.S. regions with <1 hour EMS access to TCs (84% of the population).

**Method:** We developed a decision-analytic Markov model to evaluate improvements in prehospital trauma triage given a baseline undertriage rate of major injury patients to NTC of 20% and overtriage rate of minor trauma patients to TC of 50%. The model follows patients from injury through prehospital care, hospitalization, first year post-discharge, and the remainder of life. Patients are trauma victims with a mean age of 43 (range: 18-85) with Abbreviated Injury Scores (AIS) from 1-6. Cost and outcomes data were derived from the National Study on the Costs and Outcomes of Trauma for patients with moderate to severe injury (AIS 3-6), National Trauma Data Bank, and published literature for patients with minor injury (AIS 1-2). Outcomes included costs (2009$), quality adjusted life-years (QALY), and incremental cost-effectiveness ratios.

**Result:** Reducing undertriage rates from 20% to 5% would yield 3.9 QALYs gained per 100 patients transported by EMS. Reducing overtriage rates from 50% to 25% would save $108,000 per 100 patients transported. Reducing both undertriage to 5% and overtriage to 25% would be cost-effective at $13,300/QALY gained and yield 3.9 QALYS per 100 patients. One could spend $196,000 per 100 patients transported to reduce undertriage to 5% and overtriage to 45% and still achieve an incremental cost-effectiveness ratio below $50,000/QALY. Results were somewhat sensitive to scenarios in which severely injured patients benefited less than expected from treatment at a TC relative to at a NTC or the cost difference of treating patients with minor injuries at TCs and NTCs were smaller than expected.

**Conclusion:** Reducing prehospital undertriage of trauma patients is cost-effective and reducing overtriage of minor injury patients is cost-saving provided patients with minor injuries do not suffer worse outcomes from treatment at NTCs. With approximately 4.5 million annual EMS trauma transports, reducing overtriage by 25% could save up to $4.8 billion/year.

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**L-6. TRANSCATHETER AORTIC VALVE IMPLANTATION SHOULD CHANGE THE MANAGEMENT OF NON-SURGICAL AORTIC STENOSIS CANDIDATES**

2:15 PM - 2:30 PM: Tue. Oct 25, 2011  
Columbus Hall C-F (Hyatt Regency Chicago)  
Part of Session: **HEALTH ECONOMICS LUSTED FINALISTS.**

**Cyrena Torrey Simons, MD, PhD**, **Lauren E. Cipriano, BSc, BA, PhD, Candidate**, **Rashmee U. Shah, MD**, **Mark A. Hlatky, MD**, **Alan M. Garber, MD, PhD** and **Douglas K. Owens, MD, MS**, (1)VA Palo Alto Health Care System and Stanford University, Stanford, CA, (2)Stanford University, Stanford, CA, (3)Stanford University School of Medicine, Stanford, CA

**Purpose:** Aortic stenosis, the most common valvular disease in the elderly, is associated with high morbidity and mortality. Surgical aortic valve replacement is the only treatment option available that prolongs life. Transcatheter aortic valve implantation (TAVI) is a new technology that appears to offer dramatic improvements in the quality and quantity of life of patients with aortic stenosis not eligible for surgical
valve replacement. Using the results of the multicenter, randomized control PARTNER trial, we sought to determine if TAVI is cost effective compared with medical management.

Method: We developed a decision analytic Markov model to follow cohorts of 83 year old patients with severe aortic stenosis who also shared the other baseline characteristic seen in the PARTNER RCT: >92% had New York Heart Association (NYHA) class III or IV symptoms, and all had Society of Thoracic Surgeons risk score of 10% or higher. As in the trial, TAVI reduced mortality by 23% over two years. Model costs came from Medicare and the Nationwide Inpatient Sample (2008 US$). We compared the strategies of TAVI and medical management, which included the option of balloon aortic valvuloplasty.

Result: TAVI was the most effective, but also the most expensive, treatment option providing an expected 1.98 QALYs at an average cost of $99,700 per person. In contrast, medical management resulted in 1.25 QALYs at an average cost of $63,200. Compared to medical management, TAVI cost $49,500 per QALY gained. This result was sensitive to annual health care costs in surviving patients. With a willingness to pay threshold of $100,000/QALY, TAVI was the optimal policy if health care costs other than those due to aortic stenosis were <$54,000/year. Clinically appropriate variation in other parameters, like procedural effectiveness, ongoing rates of death, and use of valvuloplasty in the medical treatment arm, had only modest effects on estimated cost-effectiveness. Furthermore, TAVI resulted in 56% of the cohort’s remaining life being spent with NYHA class I or II symptoms, instead of class III or IV symptoms. Depending on the extent of valvuloplasty use, the cohort receiving medical management was asymptomatic 0 to only 45% of the time.

Conclusion: TAVI appears to be a cost-effective treatment for patients with symptomatic aortic stenosis who are not candidates for surgery.

SMDM AND SBM (SOCIETY OF BEHAVIORAL MEDICINE) JOINT SYMPOSIUM WHEN DECISIONS DEPART FROM RATIONALITY: EVIDENCE-BASED STRATEGIES FOR UNDERSTANDING "REAL" PATIENT CHOICES.

4:00 PM - 5:30 PM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Session Chairs:

- Erika A. Waters, PhD, MPH
- Suzanne C. O’Neill, PhD

Abstracts:
WHEN DECISIONS DEPART FROM RATIONALITY: EVIDENCE-BASED STRATEGIES FOR UNDERSTANDING “REAL” PATIENT CHOICES

4:00 PM - 4:15 PM: Tue. Oct 25, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: SMDM AND SBM (SOCIETY OF BEHAVIORAL MEDICINE) JOINT SYMPOSIUM WHEN DECISIONS DEPART FROM RATIONALITY: EVIDENCE-BASED STRATEGIES FOR UNDERSTANDING "REAL" PATIENT CHOICES.

Michael A. Diefenbach, PhD, Mount Sinai School of Medicine, New York, NY, Karen Emmons, PhD, Dana Farber Cancer Institute, Boston, MA, Paul K. J. Han, MD, MA, MPH, Maine Medical Center, Portland, ME and Ellen Peters, PhD, Ohio State University, Columbus, OH

There is a well-established discrepancy between decisions predicted by normative models for decision making and the decisions people actually make. This difference is also reflected in medical decision making, where patients are expected to participate in their treatment decisions, yet often make non-normative choices. The problem may be exacerbated in the future, as age-related decrements in cognitive and decision-making ability collide with a rapidly-aging population with growing healthcare needs. These issues will be addressed by the speakers and a discussant who are renowned for their expertise in bridging theoretical and applied research. The speakers will present theoretical frameworks, hypothesis-driven experiments, and evidence-based interventions that achieve optimal decisions and health behaviors without attempting to teach patients to make decisions according to normative models. The discussion will feature the social and policy implications of the research and will encourage questions and commentary from the audience.

Wednesday, October 26, 2011

BEHAVIORAL ECONOMICS SYMPOSIUM: FROM A NUDGE TO A SHOVE: HOW BIG A ROLE FOR SHARED DECISION MAKING

8:00 AM - 9:30 AM: Wed. Oct 26, 2011
Grand Ballroom EF (Hyatt Regency Chicago)

Session Chairs:

• Anirban Basu, PhD
FROM A NUDGE TO A SHOVE: HOW BIG A ROLE FOR SHARED DECISION MAKING

12:00 AM - 12:15 AM: Wed. Oct 26, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: BEHAVIORAL ECONOMICS SYMPOSIUM: FROM A NUDGE TO A SHOVE: HOW BIG A ROLE FOR SHARED DECISION MAKING

Kevin Volpp, MD, PhD, University of Pennsylvania School of Medicine, Philadelphia, PA, Peter A. Ubel, MD, Duke University, Durham, NC and Kit Sundararaman, PhD, Consumerology® Solutions Group, Express Scripts, St. Louis, MO

Poor adherence is responsible for about half of medication-related hospital admissions, costing $100 billion a year, yet few interventions to date have effectively addressed this problem. Adherence is particularly important for older adults; more than 50% of older adults take five or more medications on a regular basis. Finding ways to change health-related behaviors is a major challenge for health policy yet there is a debate as to how forcefully to intervene. Behavioral economics has been instrumental in developing less forceful mechanisms for encouraging healthy behaviors. These mechanisms have been famously described as “nudges.” Yet even within behavioral economics, more forceful incentive schemes are being developed in areas as diverse as nutrition and obesity to employer wellness and adherence. Our speakers will present various examples where there is a tension between subtle and more forceful incentives for behavior change and the relative effectiveness among them.

M. DECISION AIDS AND DECISION SUPPORT

Grand Ballroom EF (Hyatt Regency Chicago)
Session Chairs:

- Emmanuelle Belanger, MSc
- Michael Pignone, MD, MPH
Session Summary:

10:15 AM - 10:30 AM

**M-1. SHARED DECISION MAKING? EXAMINING MOTHER AND DAUGHTER INFLUENCE ON THE CHOICE TO VACCINATE AGAINST THE HUMAN PAPILLOMAVIRUS**

10:30 AM - 10:45 AM

**M-2. PERSONALIZED DECISION SUPPORT FOR BREAST CANCER PREVENTION**

10:45 AM - 11:00 AM

**M-3. IMPROVING PATIENT PARTICIPATION IN DECISION MAKING FOR ATRIAL FIBRILLATION**

11:00 AM - 11:15 AM

**M-4. INFORMED DECISION MAKING ABOUT BREAST CANCER CHEMOPREVENTION: RCT OF AN ONLINE DECISION AID INTERVENTION**

11:15 AM - 11:30 AM

**M-5. DO INFORMED CONSENT DOCUMENTS MAKE GOOD DECISION AIDS?**

11:30 AM - 11:45 AM

**M-6. A PATH MODEL OF FACTORS THAT INFLUENCE SATISFACTION WITH DECISION SUPPORT AMONG SURROGATE DECISION MAKERS OF THE CHRONICALLY CRITICALLY ILL**

Abstracts:

**M-1. SHARED DECISION MAKING? EXAMINING MOTHER AND DAUGHTER INFLUENCE ON THE CHOICE TO VACCINATE AGAINST THE HUMAN PAPILLOMAVIRUS**

*10:15 AM - 10:30 AM: Wed. Oct 26, 2011*
A. Scott LaJoie, PhD, MSPH¹, M. Cynthia Logsdon, PhD, ARNP, FAAN¹, Melissa D. Pinto-Foltz, PhD, RN², Ronald L. Hickman Jr., PhD, ACNP-BC² and S. Paige Hertweck, MD¹, (1)University of Louisville, Louisville, KY, (2)Case Western Reserve University/Cleveland Clinic, Cleveland, OH

Purpose: The human papillomavirus (HPV) is a common infection that has been linked to several cancers. A vaccine has been developed for adolescents. This study measures the influences of the attitudes of daughter and mother on the decision to immunize the daughter.

Methods: The Theory of Planned Behavior guided the development and analysis of survey data collected from 72 mother-and-daughter dyads. Additional information was collected regarding the relationship between mother and daughter. Two structural equation models (SEM) were created; one to relate the mother’s behavioral attitude, subjective norms, and perceived behavioral control with her intention and decision whether to vaccinate the daughter. The second expanded the model to include variables related to the dyad. Additional analyses compared whether the daughter shared similar attitudes and beliefs to her mother.

Results: Mothers (average age = 44 years) were mainly Caucasian (73%), at least high school educated (62%), and married (64%). Their daughters (average age = 15 years) were mainly in grade 9 or lower (69%) and only 35% reported being in a dating relationship. The mother’s intention to vaccinate was predicted by her behavioral attitude (B=.39, p<.001), normative beliefs (B=.31, p<.001), and perceived behavioral control (B=.31, p<.001); intention predicted her vaccine decision (B=.31, p<.001). The basic SEM was a good fitting model (RMSEA=.001, PCLOSE=.52). The three variables strongly predicted intention (r-square = .68, p<.001); regressing perceived behavioral control and intention on the decision (yes or no) to vaccinate resulted in an odds ratio = .33 (p<.001). The addition of variables related to the mother’s relationship to her daughter and her parenting style did not significantly improve the model’s predictability. The mother and daughter did not always hold the same attitudes toward vaccination; only their normative beliefs were correlated (r=.42, p<.001).

Conclusion: In the decision to vaccinate an adolescent female against different cancer-causing strains of HPV, there appears to be little shared decision making. Mainly, the attitudes and beliefs of the mother dictate whether the daughter receives the vaccine. Efforts to increase the HPV vaccine acceptance rates should focus on educating mothers about the benefits and risks associated with her decision.

M-2. PERSONALIZED DECISION SUPPORT FOR BREAST CANCER PREVENTION

Grand Ballroom EF (Hyatt Regency Chicago)
Purpose: Breast cancer prevention has the potential to decrease the incidence of the disease, yet remains underused. We have developed a web-based tool that provides automated risk assessment and personalized decision support designed for collaborative use between patients and clinicians. We assessed the feasibility of using this tool in a primary care setting.

Methods: Women, 40-65, were recruited from a schedule of patients attending annual physicals in a primary care clinic at an academic hospital. Patients with a history of breast cancer, genetic testing, or chemoprevention education were excluded. Information used to assess breast cancer risk was gathered from phone interviews and medical records. Patients were randomized to view the decision aid either before their appointment or with their PCP during their appointment. Feasibility of the decision aid was assessed through: 1) Visit duration; 2) Patient Acceptability; and 3) Clinician Satisfaction. The outcomes were gathered from surveys administered to patients before and after appointments, and to providers after appointments.

Results: 64 women were approached over 5-months. 42/64 (68%) consented and were enrolled. 26/42 (62%) patients viewed the decision aid. Use of the decision aid did not result in a longer visit (p=0.57). Nor did it negatively influence the provider’s satisfaction with the visit (p=0.28). A majority of patients had a positive review of the decision aid and thought it was helpful in making a decision. A higher number of subjects who viewed the decision aid were either at moderate or high risk as calculated by the Gail or BRCAPro models (p =0.0138). 15/42 (36%) patients were at moderate or high risk. The PCPs’ perceptions of these patients’ risk was in line with the calculated risk for 11/15 (73%) of the patients. While a discussion regarding breast cancer risk reduction occurred with 14/15 (93%) of these patients, PCPs chose to use the decision aid during the appointment with 6/15 (40%) of them.

Conclusions: Performing personalized risk assessment and use of the decision aid in the primary care setting was feasible and acceptable. These results suggest risk assessment alone is enough to encourage a discussion about breast cancer risk reduction for some providers. This method of risk assessment and decision support holds promise in the effort to reduce the incidence and burden of breast cancer.

M-3. IMPROVING PATIENT PARTICIPATION IN DECISION MAKING FOR ATRIAL FIBRILLATION

10:45 AM - 11:00 AM: Wed. Oct 26, 2011
Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: DECISION AIDS AND DECISION SUPPORT

Liana Fraenkel, MD, MPH, Yale School of Medicine, New Haven, CT and Terri Fried, MD, Yale School of Medicine, West Haven, CO
**Purpose:** Guidelines recommend that treatment decisions for nonvalvular atrial fibrillation (NVAF) incorporate patient preferences. We designed a multicomponent decision tool to inform patients of their individual risks of stroke and bleed over a meaningful time period (5 years), assist patients in clarifying their priorities, and to facilitate patient-physician communication.

**Methods:** We conducted a pilot, clustered randomized controlled trial, in which patients assigned to one group of providers completed the decision tool before seeing their primary care physician and patients assigned to a second group received usual care. Data were collected pre- and post visit to assess outcomes. Visits were audiotaped. The primary outcome variables were the Informed and Values Clarity subscales of the low-literacy version of the Decisional Conflict Scale. Secondary outcomes were: knowledge, anxiety, worry, rationale for preferred treatment, and discussion of NVAF-related outcomes. Between group differences were measured using a linear regression model which included sociodemographic characteristics, quality of life, and baseline scores. A sample size of 135 was calculated assuming, Type 1 error of 0.05, power of 0.80, two-tailed, an effect size (Cohen's d) of 0.5 after inflating the initial estimate by 5% for possible missing values.

**Results:** 69 patients were enrolled in the intervention group and 66 in the control group. Participants in the intervention group had lower scores on the Informed [11.9 (-21.1, -2.7)] and Values Clarity subscales [-14.6 (-22.6, -6.6)]. Participants in the intervention group were more likely to be able to name the medications for reducing stroke risk (61% vs 31%, p<0.001) and to know their side effects (49% vs 37%, p=0.07), although the latter did not reach statistical significance. The risk of stroke was discussed more frequently in the intervention than control group (71% vs 12%, p<0.0001), as was the risk of bleed (71% vs 21%, p<0.0001). Between groups differences for remaining outcomes are presented in the table.

**Conclusion:** The tool was effective at improving perceived knowledge and value clarity and at increasing physician-patient communication.

<table>
<thead>
<tr>
<th></th>
<th>Intervention (mean)</th>
<th>Control (mean)</th>
<th>Difference (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy: stroke risk</td>
<td>9.1</td>
<td>14.2</td>
<td>-5.2 (-1.9, -8.4)</td>
<td>&lt;.001</td>
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<tr>
<td>Accuracy: bleeding risk</td>
<td>8.7</td>
<td>13.1</td>
<td>-4.4 (1.4, -7.5)</td>
<td>&lt;.001</td>
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<td>Anxiety</td>
<td>13.0</td>
<td>13.4</td>
<td>-0.38 (-1.4, .67)</td>
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<tr>
<td>Worry: stroke risk</td>
<td>1.8</td>
<td>1.6</td>
<td>0.18 (-0.31, .66)</td>
<td>0.47</td>
</tr>
<tr>
<td>Worry: bleeding risk</td>
<td>1.5</td>
<td>1.9</td>
<td>-0.43 (-1.1, .29)</td>
<td>0.24</td>
</tr>
</tbody>
</table>
M-4. INFORMED DECISION MAKING ABOUT BREAST CANCER CHEMOPREVENTION: RCT OF AN ONLINE DECISION AID INTERVENTION

Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: DECISION AIDS AND DECISION SUPPORT

Andrea Fuhrel-Forbis\textsuperscript{1}, Ida J. Korfage, PhD\textsuperscript{2}, Peter A. Ubel, MD\textsuperscript{3}, Dylan Smith, PhD\textsuperscript{4}, Brian J. Zikmund-Fisher, PhD\textsuperscript{1}, Jennifer B. McClure, PhD\textsuperscript{5}, Sarah M. Greene, MPH\textsuperscript{5}, Azadeh Stark, PhD\textsuperscript{6}, Sharon M. Hensley Alford, PhD\textsuperscript{6}, Rosemarie K. Pitsch\textsuperscript{7}, Holly Derry, MPH\textsuperscript{1}, Amanda J. Dillard, PhD\textsuperscript{8} and Angela Fagerlin, PhD\textsuperscript{9}, (1)University of Michigan, Ann Arbor, MI, (2)Erasmus MC - University Medical Center, Rotterdam, Netherlands, (3)Duke University, Durham, NC, (4)Stony Brook University, Stony Brook, NY, (5)Group Health Research Institute, Seattle, WA, (6)Henry Ford Health System, Detroit, MI, (7)Health Media, Inc., Ann Arbor, MI, (8)Grand Valley State University, Allendale, MI, (9)VA Ann Arbor Healthcare System & University of Michigan, Ann Arbor, MI

Purpose: To examine the impact of an online decision aid (DA) intervention on informed decision making about chemoprevention.

Method: Women aged 46-74 at high risk of breast cancer were recruited from 2 U.S. HMOs. Participants were randomly assigned to 1 of 3 groups: intervention group (viewed online DA and answered post-test chemoprevention questions); standard control group (did not receive DA but answered post-test chemoprevention questions), or 3-month follow-up control group (did not receive DA or answer post-test chemoprevention questions). 585 women completed post-test and 3-month follow-up questionnaires. Using Marteau, Dormandy, and Michie’s (2001) definition of informed decisions, we created a dichotomous composite variable, “informed decision,” equal to “1” for women with sufficient knowledge (correctly answered at least 50% of gist knowledge questions) who also made a decision about chemoprevention consistent with their attitudes toward the drugs. Women with insufficient knowledge or with decisions inconsistent with their attitudes received a score of “0.”

Result: At post-test, 54% of the intervention group and 6% of the standard control group made informed decisions, OR=17.69, p<.001, 95% CI=7.56, 41.38. Informed decisions may be based on prior knowledge despite current knowledge having dropped off, so we assessed post-test knowledge with decision-making at follow-up; the intervention group (44%) made informed decisions more frequently than the standard control group (3%), OR=25.67, p<.001, CI=7.99, 82.49. At follow-up there was a trend toward the intervention group making more informed decisions (18%) than either of the control groups (12% standard control vs. 8% 3-month control), but overall this difference was not statistically significant, X^2(2)=5.396, p=.067. Post-test sufficient knowledge occurred more frequently in the intervention group (62%) compared to standard control (7%), X^2(1)=97.528, p<.001. At follow-up, the intervention group (25%) was more likely than either control group (15% standard control vs. 12% 3-month control) to have retained sufficient knowledge for an informed decision X^2(2)=10.71, p=.005.
Conclusion: Women given a DA describing risks and benefits of tamoxifen and raloxifene were significantly more likely to make informed decisions about undergoing chemoprevention for breast cancer immediately after reading the DA. The intervention materials impacted knowledge and alignment of attitudes with decisions, but this effect faded over time. These results suggest that providing booster information and tools to help patients recall their initial decision processes may increase informed decision making.

M-5. DO INFORMED CONSENT DOCUMENTS MAKE GOOD DECISION AIDS?

Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: DECISION AIDS AND DECISION SUPPORT

Jamie C. Brehaut, PhD, Kelly Carroll, MA, Glyn Elwyn, MD, PhD, Raphael Saginur, MD, Jonathan Kimmelman, PhD, Kaveh Shojania, MD, Ania Syrowatka, BSc, Trang Nguyen, BSc, Erica Hoe, BSc and Dean Fergusson, PhD.

Purpose: Current informed consent processes tend to emphasize information provision rather than careful deliberation and decision-making. The International Patient Decision Aids Standards (IPDAS) provide recommendations for working systematically through difficult decisions, such that decision makers will understand outcome probabilities, explicitly weigh benefits and harms, and consider which outcomes they value most. We assessed informed consent documents (ICDs) according to these recommendations.

Methods: 139 ICDs for trials registered with ClinicalTrials.gov were obtained from study investigators. Using a 4-point scale (strongly agree, agree, disagree, strongly disagree), two raters assessed each ICD on 32 items. If the mean rating was within the “agree” range, the ICD was said to conform to that item.

Results: Overall agreement between raters was 95.1%. For the 12 items focused on providing information about options, conformity (i.e. the percentage of the sample rated ‘strongly agree’ or ‘agree’ to that item) was above 50% for only 3 items, while conformity was 0% for another 4 items. For 8 items focused on clear presentation of probabilities of outcomes, conformity was below 20% for all 8. For the 2 items focused on clarifying and expressing values, conformity was below 10%. For the 2 items focused on improving structured guidance in deliberation, conformity was below 5%. For the 4 items focused on using evidence to facilitate decision making, 1 item showed conformity in more than 50% of the sample, while the others showed conformity below 5%. For 4 items focused on disclosure and transparency, conformity was high (above 60% for 2, above 80% for the others).

Conclusions: This study shows that existing ICDs do not conform to many standards
M-6. A PATH MODEL OF FACTORS THAT INFLUENCE SATISFACTION WITH DECISION SUPPORT AMONG SURROGATE DECISION MAKERS OF THE CHRONICALLY CRITICALLY ILL

Grand Ballroom EF (Hyatt Regency Chicago)
Part of Session: DECISION AIDS AND DECISION SUPPORT

Ronald L. Hickman Jr., PhD, RN, ACNP-BC, Case Western Reserve University, Cleveland, OH

Purpose: The acuity of the chronically critically ill (CCI) and the increased rates of cognitive impairment in this emerging cohort enhances the complexity of shared decision making. Often surrogate decision makers (SDMs) are required to make complex health care decisions without certainty of the patient’s likelihood of survival or long-term quality of life. This cross-sectional study examines dispositional and situational factors that influence the satisfaction with decision support among SDMs of cognitively impaired CCI patients.

Methods: A dispositional stress and coping framework guided the development of the path model and analysis of survey data collected from 216 SDMs of the CCI. A path model was created with Analysis of Moment Structure (AMOS version 19), which consisted of the following dispositional and situational factors: dispositional cognitive appraisal (threat, resources, and centrality subscales of the Stress Appraisal Measure), informational coping style (monitor subscale of the Abbreviated Miller Behavioral Style Scale), depressive symptoms (Center for Epidemiological Studies-Depression Scale), role stress (“How stressful has it been making decisions for your loved one?”), satisfaction with decision support (informational and decision support subscale of the revised Critical Care Family Satisfaction Survey for chronic critical illness), and the SDM’s gender.

Results: On average, SDMs (mean age = 52 years) were Caucasian (62%), females (76%), high school educated (65%) and the spouse (34%), adult child (28%), or parent (22%) of a cognitively impaired CCI patient. Overall, the path model had an excellent model fit to our data ($\chi^2 = 14.9$, df = 20, p = .78, TLI = 1.07, CFI = 1.00, RMSEA = .000). Threat appraisal ($\beta = .40$, p < .001) had a direct effect on informational coping style, and threat appraisal was correlated with centrality ($r = .68$, p < .001) and resources ($r = -.20$, p < .01). Gender ($\beta = -.15$, p < .05), informational coping style ($\beta = .17$, p < .05), and threat appraisal ($\beta = .21$, p < .05) had a direct effect on depressive symptoms. Depressive symptoms ($\beta = .45$, p < .001) had a direct effect on role stress, and role stress ($\beta = -.14$, p = .05) had a direct effect on satisfaction with decision support.

Conclusion: Among SDMs of CCI patients, role stress directly impacts their
appraisal of satisfaction with decision support. Interventional research that targets threat appraisal, adapts to informational coping style, and reduces depressive symptoms may reduce the SDM’s perception of role stress and enhance satisfaction with decision support.

N. METHODS TO PROMOTE CVD AND DIABETES PREVENTION

Grand Ballroom CD (Hyatt Regency Chicago)
Session Chairs:

• Nilay D. Shah, PhD
• Steven M. Kymes, Ph.D.

Session Summary:

10:15 AM - 10:30 AM

**N-1. DRONEDARONE COST OFFSET ACHIEVED BY REDUCTION OF ATRIAL FIBRILLATION/FLUTTER PATIENT HOSPITALIZATION: RESULTS FROM THE FIRST 12 MONTHS OF FOLLOW-UP DURING THE ATHENA TRIAL**

10:30 AM - 10:45 AM

**N-2. COST-EFFECTIVENESS OF NON-INVASIVE CARDIAC IMAGING TECHNOLOGIES IN OUTPATIENTS WITH SUSPECTED CORONARY ARTERY DISEASE**

10:45 AM - 11:00 AM

**N-3. USING A WEB-BASED SELF-ASSESSMENT TOOL TO DETECT AND TREAT HYPERCHOLESTEROLAEMIA: THE COST-EFFECTIVENESS OF THE HEARTAWARE RISK FACTOR SCREENING PROGRAM**

11:00 AM - 11:15 AM

**N-4. OPTIMAL CUT-POINT OF DIABETES RISK SCORES TO IDENTIFY UNDIAGNOSED DIABETES: A COST-EFFECTIVENESS PERSPECTIVE**
N-5. ANATOMIC VS. FUNCTIONAL TESTING IN PATIENTS WITH STABLE CHRONIC CHEST PAIN SYNDROME AND THE EFFECT OF NON-OBSTRUCTIVE CORONARY ARTERY DISEASE – A COST-EFFECTIVENESS ANALYSIS

11:30 AM - 11:45 AM

N-6. EVIDENCE-BASED PREVENTIVE SERVICE DELIVERY AND MISSED OPPORTUNITIES DURING PERIODIC HEALTH EXAMINATIONS

Abstracts:

N-1. DRONEDARONE COST OFFSET ACHIEVED BY REDUCTION OF ATRIAL FIBRILLATION/FLUTTER PATIENT HOSPITALIZATION: RESULTS FROM THE FIRST 12 MONTHS OF FOLLOW-UP DURING THE ATHENA TRIAL

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: METHODS TO PROMOTE CVD AND DIABETES PREVENTION

Matthew Reynolds, MD\(^1\), Peter Zimetbaum, MD\(^1\), François Diamand\(^2\), Mehul Jhaveri, PharmD, MPH\(^3\), Gaëlle Bego-Le Bagousse\(^4\), Jay Lin, Ph.D., MBA\(^5\) and Adam Plich\(^6\), (1)Beth Israel Deaconess Medical Center, Boston, MA, (2)Keyrus, Levallois-Perret, France, (3)sanofi-aventis U.S., Bridgewater, NJ, (4)sanofi-aventis R&D, Massy, France, (5)Novosys Health, Flemington, NJ, (6)Medaxial Ltd, London, United Kingdom

Purpose: This analysis assessed reduction of cardiovascular (CV) hospitalizations in the first 12 months of the ATHENA trial and the associated cost savings in the US.

Method: The ATHENA trial randomized atrial fibrillation/flutter (AF/AFL) patients (mean age 71.6 years) with ≥1 other CV risk factor to dronedarone (n=2,301) or placebo (n=2,327), plus standard care. In this cost analysis, hospitalization costs, derived from claims data for a US cohort of ‘ATHENA-like’ AF/AFL patients with Medicare supplemental insurance (n=10,200), were applied to hospitalization events occurring during the first 12 months of the ATHENA trial. Cost inputs (2008 values) were (i) weighted mean CV hospitalization costs, categorised according to admission cause, and (ii) Diagnosis Related Groups costs of hospitalizations for adverse events (AEs) in ATHENA. Cost variations were assessed using Monte Carlo sensitivity analysis.

Result: During the first 12 months of ATHENA, overall CV hospitalizations fell by 29% with dronedarone (33.36 vs. 47.19 events/100 patients, dronedarone vs. placebo).
Based on the observed hospitalizations and derived costs, the overall cost savings with dronedarone were estimated at (mean ± SD) $1,328 ± 176 per patient (Table). The estimated savings in CV hospitalization costs (mean $1,341 per patient) heavily outweighed the added estimated AE hospitalization costs (mean $12 per patient). Sensitivity analysis showed the cost offset ranged between $594−$2,124 over 10,000 cycles of Monte Carlo simulation.

**Conclusion:** Dronedarone offers early cost benefits in AF/AFL, producing estimated mean hospital-related cost savings of $1328 per patient within the first 12 months of treatment in the ATHENA population.

<table>
<thead>
<tr>
<th>Hospitalization cause</th>
<th>Hospitalizations/100 patients(^1)</th>
<th>Default cost/hospitalization</th>
<th>Hospitalization cost saving/patient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Placebo + standard care</td>
<td>Dronedarone + standard care</td>
<td></td>
</tr>
<tr>
<td>Myocardial infarction/unstable angina</td>
<td>3.14</td>
<td>1.69</td>
<td>$17,360 $250</td>
</tr>
<tr>
<td>Cardiac arrhythmia &amp; conduction disorders</td>
<td>26.69</td>
<td>15.38</td>
<td>$8,601 $972</td>
</tr>
<tr>
<td>Cardiovascular surgery</td>
<td>2.58</td>
<td>2.52</td>
<td>$21,233 $12</td>
</tr>
<tr>
<td>Worsening heart failure, pulmonary edema/cardiac dyspnea</td>
<td>5.54</td>
<td>4.26</td>
<td>$9,945 $128</td>
</tr>
<tr>
<td>Implantation of cardiac device</td>
<td>2.15</td>
<td>1.69</td>
<td>$18,272 $83</td>
</tr>
<tr>
<td>Transient ischemic attack/stroke</td>
<td>1.59</td>
<td>1.30</td>
<td>$9,006 $26</td>
</tr>
<tr>
<td>Other cardiovascular(^2)</td>
<td>5.50</td>
<td>6.52</td>
<td>$12,807 −$130</td>
</tr>
<tr>
<td>Total cardiovascular hospitalizations</td>
<td>47.19</td>
<td>33.36</td>
<td>−</td>
</tr>
<tr>
<td>Adverse events(^3)</td>
<td>0.21</td>
<td>0.48</td>
<td>$4,681 −$12</td>
</tr>
<tr>
<td>All hospitalization events</td>
<td>47.40</td>
<td>33.84</td>
<td>−</td>
</tr>
</tbody>
</table>

1. Numbers rounded from 3 decimal places; 2. Cardiac transplantation,
N-2. COST-EFFECTIVENESS OF NON-INVASIVE CARDIAC IMAGING TECHNOLOGIES IN OUTPATIENTS WITH SUSPECTED CORONARY ARTERY DISEASE

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: METHODS TO PROMOTE CVD AND DIABETES PREVENTION

Gabrielle van der Velde, DC, PhD, Luciano Ieraci, MSc, Mike Paulden, MA., MSc, Harindra C. Wijeysundera, MD, William Witteman, MIST and Murray D. Krahn, MD, MSc, (1)Toronto Health Economics and Technology Assessment (THETA) Collaborative, Toronto, ON, Canada, (2)Schulich Heart Center, Sunnybrook Health Sciences Center, Toronto, ON, Canada

Purpose: To evaluate the relative cost-effectiveness of six non-invasive cardiac imaging tests in stable outpatients with suspected coronary artery disease (CAD) including: 1) stress echocardiography (Echo), 2) stress Echo with contrast agent (Echo+Contrast), 3) stress Echo with contrast agent used only if initial results are not interpretable (Echo>Contrast), 4) 64-slice computer tomography angiography (CTA), 5) cardiac magnetic resonance imaging (CMRI), and 6) stress single-photon emission computed tomography (SPECT).

Method: A decision-analytic Markov model was constructed to simulate the costs and consequences of diagnostic testing in a hypothetical cohort of patients presenting with chest pain in an ambulatory setting, with an intermediate risk of CAD after clinical evaluation. Resource use and costs were derived from Ontario data sources, including the Ontario Health Insurance Plan Schedule of Benefits and Ontario Case Costing Initiative. Estimates of diagnostic test characteristics (sensitivity, specificity) were identified by systematic review and statistically pooled using a bivariate regression approach. Data sources for other model parameters were published data identified by systematic review. The analysis took the perspective the Ontario public health care system and was conducted over a lifetime time horizon. Costs were expressed in 2008-2009 Canadian prices. The primary outcome was quality-adjusted life years (QALYs). Costs and QALYs were discounted at an annual rate of 5%. Cost-effectiveness was evaluated using two conventional willingness-to-pay thresholds: $50,000 per QALY and $100,000 per QALY. Uncertainty around the results was explored with probabilistic sensitivity analysis with 10,000 simulations.

Result: Echo>Contrast was the least expensive test (expected lifetime costs of $21,536) with expected lifetime QALYs of 10.02. CTA was more slightly more expensive ($21,618) and effective (expected lifetime QALYs of 10.05) than Echo>Contrast; thus CTA was cost-effective relative to Echo>Contrast with an
incremental cost-effectiveness ratio of $2,958 per QALY. CTA dominated Echo, Echo+Contrast, CMRI, and SPECT, and extendedly dominated Echo. The probability that CTA was cost-effective at a willingness-to-pay of $50,000 per QALY and $100,000 per QALY was 0.929 and 0.934, respectively. Varying individual parameter values across plausible ranges in a series of 1-way sensitivity analyses did not change the finding that CTA was cost-effectiveness.

Conclusion: Sixty-four slice computer tomography angiography appears to be a cost-effective non-invasive cardiac imaging option for intermediate risk patients with suspected CAD in an ambulatory setting.

N-3. USING A WEB-BASED SELF-ASSESSMENT TOOL TO DETECT AND TREAT HYPERCHOLESTEROLAEMIA: THE COST–EFFECTIVENESS OF THE HEARTAWARE RISK FACTOR SCREENING PROGRAM

10:45 AM - 11:00 AM: Wed. Oct 26, 2011
Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: METHODS TO PROMOTE CVD AND DIABETES PREVENTION

Justin B. Dickerson, MBA¹, Catherine J. McNeal, MD, PhD², Matthew Lee Smith, PhD, MPH¹ and Marcia G. Ory, PhD, MPH¹, (1)Texas A&M Health Science Center, School of Rural Public Health, College Station, TX, (2)Texas A&M Health Science Center, College of Medicine/Scott & White Healthcare, Temple, TX

Purpose: To evaluate the cost-effectiveness of using a web-based self-assessment tool to detect cases of Hypercholesterolaemia and subsequently treat with statin therapy.

Methods: Data was collected from 25,364 users of the HeartAware risk factor self-assessment tool administered through a nationwide network of 127 hospitals and clinics. The web-based tool asked participants to report several risks factors for heart disease including: low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, systolic and diastolic blood pressure, diabetes and smoking status, medical history, and family history of disease. Responses enabled the calculation of heart disease risk. Participants identified as high risk were eligible for selection by hospitals or clinics for no-cost clinical screening of the same risk factors. Participants with no history of heart disease and those with both self-reported and clinically measured risk factors were included in the analytic sample. A decision-tree determined if sample members would qualify for statin therapy based on inter-rater agreement of self-reported and clinical measures, prior usage of cholesterol lowering medications, and clinical guidelines for statin therapy established by the Adult Treatment Panel III. HeartAware screening costs were measured along with costs of follow-up testing and treatment for those identified for statin therapy. Cost avoidance associated with reduced risk of heart disease was calculated. Life years gained (LYG) as a result of statin therapy was used to calculate cost per LYG. Sensitivity analysis was also performed for scenarios of low statin adherence and enhanced screening methodologies. Findings were compared to prior studies of cost-effectiveness for opportunistic and universal familial hypercholesterolaemia screening as well as
Results: The analytic sample contained 5,884 participants, with 225 eligible for statin therapy. HeartAware resulted in a cost per LYG of $16,665. Sensitivity analysis for 50% statin adherence resulted in a cost per LYG of $16,428, while enhanced screening methodologies indicated a cost per LYG between $7,620 and $14,607.

Conclusion: Prior studies of opportunistic and universal screening indicate a cost per LYG of $20,313 and $23,413 respectively. Accepted thresholds for cost per LYG are between $35,000 and $60,000. HeartAware is more cost effective than these established screening methodologies, and also favorable relative to accepted willingness to pay thresholds. As such, it should be considered a viable alternative screening method for heart disease.

N-4. OPTIMAL CUT-POINT OF DIABETES RISK SCORES TO IDENTIFY UNDIAGNOSED DIABETES: A COST-EFFECTIVENESS PERSPECTIVE

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: METHODS TO PROMOTE CVD AND DIABETES PREVENTION

Xiaohui Zhuo, PhD¹, Ping Zhang, PhD¹, Kai McKeever Bullard, PhD¹ and Edward Gregg, PhD², (1)Centers for Disease Control and Prevention, Atlanta, GA, (2)Centers for Disease Control and Prevention, Atlatna, GA

Purpose: The American Diabetes Association (ADA) developed a questionnaire-based scoring system to screen for undiagnosed diabetes, wherein persons with a score of ≥10 are considered at high risk and recommended for further screening. We assessed the cost-effectiveness of the recommended cutoff score of 10 and other alternative cut-points of the scoring system.

Method: We used a validated simulation model to estimate the lifetime cost-effectiveness associated with a 1 point increment in risk score from 5 to 15. We used data from the National Health and Nutritional Examination Survey (2007) to estimate the prevalence and characteristics of the undiagnosed diabetes population, and sensitivities and specificities of each alternative cutoff. Persons who screened positive were assumed to receive a follow-up diagnostic test and intensive glycemic management if confirmed to have diabetes. Outcomes were measured by expected life-years, quality-adjusted life-years (QALYs), and medical costs. Incremental Cost-Effectiveness Ratio (ICER) of one cutpoint was measured by the incremental cost per QALY gained comparing with its next higher cutpoint. The analysis was conducted from a societal perspective.

Results: The proportion of undiagnosed diabetes detected, health benefit, cost and ICER by alternative cutoff score are presented in the table. A lower cutpoint resulted in a larger proportion of the undiagnosed diabetes detected and greater health benefits, but also in higher medical costs and higher ICER. The cutpoints in the range of 11 to 15 have ICERs lower than $50,000 and the cutpoint of 10 was associated with an
ICER of $55,000/QALY.

<table>
<thead>
<tr>
<th>Cutpoint</th>
<th>Undiagnosed Diabetes Cases Detected, %</th>
<th>Life-year Gained†</th>
<th>QALY Gained†</th>
<th>Incremental Cost</th>
<th>Cost per QALY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>77.8</td>
<td>0.009</td>
<td>0.008</td>
<td>1,420</td>
<td>176,000</td>
</tr>
<tr>
<td>6</td>
<td>70.5</td>
<td>0.010</td>
<td>0.012</td>
<td>1,088</td>
<td>94,000</td>
</tr>
<tr>
<td>7</td>
<td>64.6</td>
<td>0.012</td>
<td>0.013</td>
<td>911</td>
<td>72,000</td>
</tr>
<tr>
<td>8</td>
<td>64.3</td>
<td>0.015</td>
<td>0.014</td>
<td>809</td>
<td>60,000</td>
</tr>
<tr>
<td>9</td>
<td>57.1</td>
<td>0.016</td>
<td>0.013</td>
<td>794</td>
<td>59,000</td>
</tr>
<tr>
<td>10</td>
<td>31.4</td>
<td>0.017</td>
<td>0.014</td>
<td>787</td>
<td>55,000</td>
</tr>
<tr>
<td>11</td>
<td>21.1</td>
<td>0.018</td>
<td>0.016</td>
<td>760</td>
<td>48,000</td>
</tr>
<tr>
<td>12</td>
<td>29.7</td>
<td>0.018</td>
<td>0.016</td>
<td>718</td>
<td>44,000</td>
</tr>
<tr>
<td>13</td>
<td>18.8</td>
<td>0.021</td>
<td>0.016</td>
<td>677</td>
<td>43,000</td>
</tr>
<tr>
<td>14</td>
<td>7.3</td>
<td>0.029</td>
<td>0.015</td>
<td>620</td>
<td>42,000</td>
</tr>
<tr>
<td>15</td>
<td>1.1</td>
<td>- *</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* cutpoint 15 is the reference group of cutpoint 14. † per person screened

**Conclusions:** There was a tradeoff between the total health benefit and economic efficiency by lowering the cutoff score. If $50,000/QALY were used as the acceptable willingness-to-pay threshold, a cutoff score of ≥11 should be selected.

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**N-5. ANATOMIC VS. FUNCTIONAL TESTING IN PATIENTS WITH STABLE CHRONIC CHEST PAIN SYNDROME AND THE EFFECT OF NON-OBSTRUCTIVE CORONARY ARTERY DISEASE – A COST-EFFECTIVENESS ANALYSIS**

**Grand Ballroom CD (Hyatt Regency Chicago)**
**Part of Session:** METHODS TO PROMOTE CVD AND DIABETES PREVENTION

**Alexander Goehler, MD, MSc, MPH¹, James C. Bayley, BSc², Julia EH Nolte, MBA³, Thomas J. Brady, MD², G. Scott Gazelle, MD, MPH, PhD⁴ and Udo Hoffmann, MD, MPH², (1)Massachusetts General Hospital, Boston, MA, (2)Cardiac MR PET CT Program, Boston, MA, (3)Institute for Technology Assessment, Boston, MA, (4)Massachusetts General Hospital, Boston, MA**

**Purpose:** For the initial assessment of patients with stable chest pain syndrome, coronary CT angiography (CTA) has evolved as an alternative to functional testing (FT) for the detection of obstructive coronary artery disease (CAD). However, uncertainty remains about its overall diagnostic value including the identification of non-obstructive CAD given the current absence of treatment. Our objective was to evaluate clinical outcomes, costs, and cost-effectiveness of different anatomic and functional test modalities in the light of potential treatments for non-obstructive CAD.

**Methods:** Design: Cost-effectiveness analysis using a microsimulation model to simulate incidence and progression of CAD (non-obstructive and obstructive) as a function of patient age, gender and cardiac risk profile. Mortality risk depended on
patient's demographics, CVD and treatment status. Potential treatment effect on non-obstructive CAD was based on decreasing the Framingham risk score (hypothetical life-style modifications) and secondary prevention studies. Target population: Patients with chronic chest pain syndrome. Time horizon: Diagnostic phase, lifetime. Discount rate: 3%. Perspective: Societal. Interventions: (1) preventive treatment (SOC) to (2) CTA (CTA), (3) stress-EKG/stress-echo/SPECT (in 20%, 50%, and 30%) (FT), (4) FT followed by CTA if FT positive or indeterminate (FT-CTA), (5) CT followed by FT if CTA positive or indeterminate (CTA-FT). Outcomes: Diagnostic results, discounted quality-adjusted life expectancy (QALE) and lifetime costs, incremental cost-effectiveness ratio (ICER).

Results: In our base case population (males, 50 years, low risk for CAD) the prevalence of CAD was estimated at 53% (13% obstructive). FT correctly identified 13% (10%) at $469/patient; CTA 44% (12%), CTA-FT 49% (9%), FT-CTA 17% (9%) at $599, $663, and $605 per patient, respectively. The model predicted an average remaining life expectancy of 22.01 quality-adjusted life years (QALY) for SOC and 22.27, 22.33, 22.20 and 22.21 QALYs for FT, CTA, CTA-FT, and FT-CTA, respectively. This resulted in an ICER of $13,800/QALY for FT compared to SOC, and of $20,000/QALY for CTA vs. FT; CTA-FT and FT-CTA were both dominated. When applying potential treatment benefit to patients with non-obstructive CAD, CTA dominated most other strategies across a broad range of CAD prevalences (figure).

Conclusion: Preliminary analyses indicate that CTA is cost-effective compared to functional testing as an initial evaluation method for patients with chronic chest pain. These results are independent of treatment effect on non-obstructive CAD.
N-6. EVIDENCE-BASED PREVENTIVE SERVICE DELIVERY AND MISSED OPPORTUNITIES DURING PERIODIC HEALTH EXAMINATIONS

Grand Ballroom CD (Hyatt Regency Chicago)
Part of Session: METHODS TO PROMOTE CVD AND DIABETES PREVENTION

Deirdre A. Shires, MPH, MSW\textsuperscript{1}, Kurt Stange, MD\textsuperscript{2}, George Divine, PhD\textsuperscript{1}, Scott Ratliff\textsuperscript{3}, Ronak Vashi\textsuperscript{1}, Ming Tai-Seale, PhD\textsuperscript{4} and Jennifer Elston Lafata, PhD\textsuperscript{3}, (1)Henry Ford Health System, Detroit, MI, (2)Case Western Reserve University, Cleveland, OH, (3)Virginia Commonwealth University, Richmond, VA, (4)Palo Alto Medical Foundation Research Institute, Mountain View, CA

Purpose: Delivery of preventive services falls short of guideline recommendations. We evaluate the multilevel factors associated with missed opportunities to deliver evidence-based preventive services during periodic health examinations (PHE).

Method: Physician subjects (N=64) were general internal medicine and family physicians practicing in 2007-2009 with an integrated delivery system in southeast Michigan. Patient subjects (N=484) were insured, aged 50-80 years, and due for colorectal cancer screening. Office visit audio-recordings were used to ascertain physician recommendation for/delivery of 19 services recommended by the US Preventive Services Task Force and Advisory Committee on Immunization Practices. A patient survey and claims data were used to determine patient service eligibility/due status. Alternating logistic regression with individual service delivery as the outcome evaluated patient, physician, visit and contextual factors associated with missed opportunities. Models nested services within patients and patients within physicians as well as controlled for service type.

Result: Among N=2662 services for which patients were due, 46% were not delivered. Services with highest rates of missed opportunities included aspirin counseling (82%), vision screening (81%) and influenza vaccination (80%). Those with lowest rates included colorectal cancer (7%) hypertension (8%) and breast cancer (10%) screening. Regression results indicated the likelihood of a missed opportunity increased with patient age (OR=1.03; 95% CI= 1.01-1.05) and each additional concern the patient raised (1.24; 1.09-1.40), decreased with increasing patient body mass index (0.98; 0.97-1.00) and each additional minute after scheduled appointment time the physician first presented (0.99; 0.98-1.00), and was greater if the physician used the electronic medical record (EMR) in the exam room (1.40; 1.06-1.86), was of a different gender than the patient (1.37; 1.05-1.79), and had seen the patient in the past 12 months (1.40; 1.06-1.86).

Conclusion: Almost half of recommended preventive services are not delivered to patients during PHEs. A combination of patient, physician, visit and contextual factors are associated with missed opportunities. While physicians appear not to skip delivery of due services when running late, delivery can be compromised when patients raise competing demands, and when the EMR is used in the exam room.
The public health and economic impact of missed opportunities to deliver preventive services is profound and warrants additional studies to understand the complex interplay of factors that support and compromise preventive service delivery.

O. METHODS FOR COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS RESEARCH

Columbus Hall C-F (Hyatt Regency Chicago)
Session Chairs:

• Kevin D. Frick, PhD
• Elbert S. Huang, MD, MPH

Session Summary:

10:15 AM - 10:30 AM

O-1. YOU CAN'T GET HERE FROM THERE: METHODS FOR COST CONVERSION BETWEEN HEALTH CARE SYSTEMS NEED TO BE REEXAMINED

10:30 AM - 10:45 AM

O-2. DIFFERENCES BETWEEN MICRO-COSTING AND IMPLEMENTATION COSTS: EXAMPLE OF HIV RAPID TESTING AND COUNSELING IN A SUBSTANCE ABUSE TREATMENT PROGRAM

10:45 AM - 11:00 AM

O-3. SYSTEMATIZING THE USE OF VALUE OF INFORMATION ANALYSIS FOR PRIORITIZING SYSTEMATIC REVIEWS

11:00 AM - 11:15 AM

O-4. POPULATION SCREENING TRADE OFFS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF SCREENING ASYMPTOMATIC CHILDREN FOR CARDIAC DISORDERS THAT CAUSE SUDDEN CARDIAC DEATH
O-5. USING LARGE ADMINISTRATIVE DATASETS AND CHART REVIEWS TO ESTIMATE COSTS FOR HEALTH STATES: THE CASE OF PROSTATE CANCER

11:30 AM - 11:45 AM

O-6. EXPLOITING LARGE OBSERVATIONAL DATA SETS FOR COMPARATIVE EFFECTIVENESS RESEARCH: THE EXAMPLE OF HIP REPLACEMENT

Abstracts:

O-1. YOU CAN’T GET HERE FROM THERE: METHODS FOR COST CONVERSION BETWEEN HEALTH CARE SYSTEMS NEED TO BE REEXAMINED

Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: METHODS FOR COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS RESEARCH

William Witteman, MIST¹, Holly O. Witteman, PhD² and Mike Paulden, MA., MSc.¹, (1)University of Toronto, Toronto, ON, Canada, (2)University of Michigan, Ann Arbor, MI

Purpose: When using health care costs, it is common practice to apply costing data from one time point in one country to another time point in another country. This requires converting across currencies, health care systems, and time. The conventional recommendation is to first convert to the desired currency using purchasing power parity, then adjust for inflation using the local context to determine the rate of adjustment [1]. However, this recommendation was based on untested assumptions that may not consistently hold. This study aims to demonstrate the implications of using different methods for converting health care costs between countries and across time. [1] Drummond et al. Issues in the cross-national assessment of health technology. Int J Technol Assess Health Care. 1992;8(4):671-82.

Methods: Using a preliminary convenience sample of nine common drugs, we extracted costing data for 2006 and 2009 from the drug formularies for the Ontario Drug Benefit Program and the United Kingdom National Health Service. We examined differences in accuracy (defined as percent error between calculated and actual cost) for two different possible conversion routes: 1) convert currency, then inflate or 2) inflate, then convert currency, crossed with two different currency exchange mechanisms: a) purchasing power parity or b) exchange on currency markets. This yields four different possible conversion methods: 1a (recommended method as per [1]), 1b, 2a and 2b.
Results: Even in this very small sample, there were significant differences in accuracy for the four different conversion methods, whether calculating Ontario costs from NHS data (F(1,8)=14.16, p=.006) or NHS costs from Ontario data (F(1,8)=75.94, p<.001). Across drugs and methods, Ontario costs were underestimated by up to 47% and overestimated by up to 249%. UK costs were never underestimated and were overestimated by as much as 578%. Best accuracy for Ontario came from methods 2b (2 drugs) and 1b (7 drugs). Best accuracy for calculating UK costs was achieved with method 2b for all drugs. The recommended method (1a) yielded results that differed from the most accurate method for a given drug by up to 73%.

Conclusions: Differences in methods for cost conversion lead to vastly different results. Within this sample, the currently recommended method never yielded the most accurate results.

O-2. DIFFERENCES BETWEEN MICRO-COSTING AND IMPLEMENTATION COSTS: EXAMPLE OF HIV RAPID TESTING AND COUNSELING IN A SUBSTANCE ABUSE TREATMENT PROGRAM

Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: METHODS FOR COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS RESEARCH

Jared A. Leff, MS\(^1\), Ashley A. Eggman, MS\(^1\), Louise F. Haynes, MSW\(^2\), Beverly E. Holmes, MSW\(^3\), Jeffrey E. Korte, PhD\(^4\), Lauren Gooden, MPH\(^5\), Daniel J. Feaster, PhD\(^6\), Lisa R. Metsch, PhD\(^5\), Grant N. Colfax, PhD\(^6\) and Bruce R. Schackman, PhD\(^1\), (1)Weill Cornell Medical College, New York, NY, (2)Medical University of South Carolina, Charleston, SC, (3)Lexington Richland Alcohol and Drug Abuse Council, Columbia, SC, (4)Medical University of South Carolina, Columbia, SC, (5)Miller School of Medicine, Miami, FL, (6)San Francisco Department of Public Health, San Francisco, CA

Purpose: Micro-costing is often conducted to determine incremental costs of an intervention for cost-effectiveness analysis, but may not be consistent with budgetary costs used for implementation. We describe these differences using a case study of implementation of rapid HIV testing and counseling in a substance abuse treatment program following a clinical trial.

Method: During the clinical trial, we used micro-costing methods to determine the cost of HIV testing in substance abuse treatment programs to conduct a cost-effectiveness analysis. Time and materials were from study records (including start and stop times for time conducting on-site testing and counseling) and site interviews; labor costs assume full capacity and were valued at local labor rates; and overhead was calculated from site financial records and applied as a percentage of labor costs. Costs include counselor and other labor, rapid HIV test and materials, supervision, quality control, and overhead. After the trial, one site implemented on-site rapid HIV testing with risk-reduction counseling in its detoxification program for 30 weeks. We compared projected costs in 2009 US dollars of implementation at this site based on
Micro-costing to budgetary costs reported by the site.

**Result:** The site administered 184 rapid HIV tests during the implementation period. Projected total costs for this period using micro-costing were $13,900 versus $20,300 budgetary costs. Labor costs based on micro-costing were $5,500 (245 hours) versus $16,700 (784 hours) budgeted for staff assigned to implementation. Overhead based on micro-costing was $5,500 versus $3,500 budgeted. Costs of tests and counseling supplies were estimated at $2,200 using micro-costing, whereas in the implementation the tests and supplies were provided from public health sources without cost to the site. Quality assurance costs using micro-costing were $700 but these costs were not separately budgeted in the implementation.

**Conclusion:** Cost estimates developed for cost-effectiveness analysis using micro-costing should not be indiscriminately applied when planning for implementation. Micro-costing may underestimate some costs (e.g. by assuming full capacity labor utilization) and overestimate others (e.g. by not considering donated materials and services). Micro-costing, however, may also identify cost categories not fully covered by implementation budgets (e.g. overhead and quality assurance).

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**O-3. SYSTEMATIZING THE USE OF VALUE OF INFORMATION ANALYSIS FOR PRIORITIZING SYSTEMATIC REVIEWS**

10:45 AM - 11:00 AM: Wed. Oct 26, 2011  
Columbus Hall C-F (Hyatt Regency Chicago)  
Part of Session: METHODS FOR COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS RESEARCH

**Ties Hoomans, PhD**, Justine Seidenfeld, BA, Anirban Basu, PhD and David Owen Meltzer, MD, PhD  
(1)University of Chicago, Chicago, IL, (2)University of Washington, Seattle, WA

**Purpose:** This study explores how health technology assessment (HTA) and research-funding agencies might effectively and efficiently use value-of-information (VOI) analysis to inform priorities for systematic reviews.

**Methods:** We reviewed 1) priority setting processes used by 13 international HTA and research-funding agencies, and 2) methods applied in 75 VOI studies from the literature. Following this, we developed an algorithm for deciding about the most effective and efficient approach to analyzing the value of systematic reviews in specific contexts.

**Results:** Our review revealed that the use of VOI and modeling is rarely applied in prioritizing systematic reviews. We identified conditions under which four alternative VOI approaches may be used for this purpose. The construction of “maximal” models of a broad disease process – often including multiple interventions to screen, diagnose and treat patients - can be worthwhile for prioritizing reviews when topics cluster in particular domains, such as diabetes, heart disease, and prostate cancer. VOI analyses commonly involve full modeling of a disease and its treatment but such
exercises are generally too complex and too costly for prioritizing systematic reviews. Modeling can be minimized when existing comparative effectiveness studies provide appropriate data on comprehensive measures of health outcomes. Another approach is "conceptual VOI", which uses information about the multiplicative elements of VOI, such as the burden of illness, uncertainty in treatment benefits, and the expected clinical use or implementation of research evidence, to provide informative bounds on the value of systematic reviews. Our algorithm describes a multi-stage process for deciding about the analysis of VOI in reviewing evidence. This process begins with clustering review topics and decisions about the use of maximal models, followed by conceptual VOI and then minimal modeling approaches. Although full models may aid in the planning and design of future research and HTA, we find limited conditions for the effective and efficient use of this traditional approach in prioritizing systematic reviews.

**Conclusion:** An algorithmic approach that includes maximal modeling, full modeling, minimal modeling and conceptual VOI analysis may be useful in informing priorities for systematic reviews. In future work, we will illustrate the application of the algorithm for prioritizing review topics nominated to the Agency for Healthcare Research and Quality (AHRQ) Evidence-based Practice Centers.

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**O-4. POPULATION SCREENING TRADE OFFS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF SCREENING ASYMPTOMATIC CHILDREN FOR CARDIAC DISORDERS THAT CAUSE SUDDEN CARDIAC DEATH**

Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: **METHODS FOR COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS RESEARCH**

Angie Mae Rodday, MS\(^1\), Laurel K. Leslie, MD, MPH\(^1\), Joshua T. Cohen, PhD\(^1\), John K. Triedman, MD\(^2\), Mark E. Alexander, MD\(^2\), Stanley Ip, MD\(^1\), Jane W. Newburger, MD, MPH\(^2\), Susan K. Parsons, MD, MRP\(^1\), Thomas A. Trikalinos, MD, PhD\(^1\) and John B. Wong, MD\(^1\), (1)Tufts Medical Center, Boston, MA, (2)Children's Hospital Boston, Boston, MA

**Purpose:** Highly publicized sudden cardiac deaths (SCD) in asymptomatic children and young adults have stimulated public interest in pre-athletics and school-based screening for asymptomatic cardiac disorders to avert these tragedies. However, the performance and trade-offs of the electrocardiogram (ECG) as a screening tool for the most common of these cardiac conditions is less understood.

**Method:** We systematically reviewed published literature on hypertrophic cardiomyopathy (HCM), long QT syndrome (LQTS), and Wolff-Parkinson-White syndrome (WPW), the three most common disorders associated with SCD and detectable by ECG. Using this information, we estimated (1) phenotypic prevalence, (2) sensitivity and specificity of ECG in detecting these disorders, (3) and predictive values using the illustrative point where sensitivity and specificity were equally
weighted and the illustrative point where specificity was maximized.

**Result:** We identified and screened 6,954 abstracts, yielding 396 articles, and extracted data from 30. Summary prevalence estimates per 100,000 asymptomatic children were low at 45 (95% CI: 10, 79) for HCM; 7 (95% CI: 0, 14) for LQTS; and 136 (95% CI: 55, 218) for WPW. The areas under the receiver operating characteristic (ROC) curves for ECG were 0.91 for detecting HCM and 0.92 for LQTS. When sensitivity and specificity were weighted equally, the positive predictive value (PPV) of detecting either HCM or LQTS using ECG was less than 1%, there were many false positives per case detected (399 for HCM and 2,323 for LQTS), and the false negative rate was 15% for HCM and LQTS. However, when specificity was maximized, the PPV increased to 2% for HCM and 1% for LQTS, the false positives per case detected declined (57 for HCM and 135 for LQTS), as did the false negative rate (<1% for HCM and LQTS). Regardless of sensitivity and specificity cut-point, the negative predictive value (NPV) was near 100% and the false reassurance rate was low (<45 per 100,000 screened) for HCM and LQTS.

**Conclusion:** Because HCM, LQTS, and WPW have very low prevalence rates, population screening with ECG would yield substantial false positives. Guidelines regarding ECG screening will need to balance trade-offs between identification and treatment of affected individuals against the additional costs and risks associated with post-screening cardiac evaluations to rule out these disorders as well as potential overdiagnosis and overtreatment of asymptomatic individuals.

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**O-5. USING LARGE ADMINISTRATIVE DATASETS AND CHART REVIEWS TO ESTIMATE COSTS FOR HEALTH STATES: THE CASE OF PROSTATE CANCER**

Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: METHODS FOR COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS RESEARCH

**Murray D. Krahn, MD, MSc¹, Karen E. Bremner, BSc², Brandon Zagorski, MSc³, Shabbir MH Alibhai, MD, MSc², George Tomlinson, PhD¹ and Gary Naglie, MD⁴, (1)University of Toronto, Toronto, ON, Canada, (2)University Health Network, Toronto, ON, Canada, (3)Institute for Clinical Evaluative Sciences, Toronto, ON, Canada, (4)Baycrest, Toronto, ON, Canada**

**Purpose:** To obtain population-based estimates of direct healthcare costs for prostate cancer (PC) from diagnosis to death for health states in a state-transition model.

**Method:** PC patients, diagnosed in 1993, 1994, 1997, 1998, 2001, and 2002, and residing in three regions of Ontario, Canada, were selected from the Ontario Cancer Registry. We retrieved pathology reports to identify patient name, referring physician, and tumour information. With consent from referring physicians, we contacted patients and family of dead patients for consent to review charts. We visited physicians’ clinics and hospitals and reviewed charts to obtain data describing PC
diagnosis, treatment, and outcome. We developed clinical criteria to allocate each patient’s observation time to 11 PC-specific Markov health states, including active surveillance, treatments, follow-up, recurrence, metastases, and death. We linked these data to health care administrative databases to calculate healthcare resource use and costs per health state, using previously developed costing methods. Mixed model multivariable regression determined predictors of costs. To assess model validity, we compared predicted costs estimated from the model with actual costs using the root mean square error and mean average error.

**Result:** The final sample numbered 829 patients (mean age = 67 years). Over 50% had T2 to T4 disease, and 5% were metastatic at diagnosis. The most costly primary treatment was radical prostatectomy ($4,702 per 100 days). The least costly health state was post-prostatectomy ($731 per 100 days). Costs before death and for hormone-refractory metastatic disease were high at $11,008 and $6,324 per 100 days, respectively. Costs increased with age (p<0.001), comorbidity (p<0.001), and advanced PC at diagnosis (p<0.05). Radical prostatectomy, metastatic disease, and final (pre-death) health states were significantly more costly than active surveillance (p<0.05), while post-prostatectomy and post-radiation therapy states cost significantly less (p<0.0001). The validity of the model was assessed; the root mean square error was $4,206 and mean average error was $1,873, relatively small compared with observed mean and median costs per 100 days, $4,344 and $2,338, respectively.

**Conclusion:** Combining chart reviews and administrative data is feasible to estimate mean adjusted costs and the effects of covariates on costs for state-transition models. However, this approach is very costly and time consuming. Administrative data alone may be sufficient for applications that do not require a high level of clinical detail.

**O-6. EXPLOITING LARGE OBSERVATIONAL DATA SETS FOR COMPARATIVE EFFECTIVENESS RESEARCH: THE EXAMPLE OF HIP REPLACEMENT**

Columbus Hall C-F (Hyatt Regency Chicago)
Part of Session: **METHODS FOR COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS RESEARCH**

**Mark W. Pennington, PhD, Jan Van der Meulen, PhD and Richard Grieve, PhD, London School of Hygiene & Tropical Medicine, London, United Kingdom**

**Purpose:** Recent research has highlighted the importance of subgroup analysis to facilitate the use of comparative effectiveness research in shared decision making (Basu, MDM, 2009). Obtaining sufficient data for such analyses may require the use of large observational data sets, particularly where adverse events/failures are rare or occur over extended time periods. Potential pitfalls can still arise when examining small differences across subgroups. We illustrate these issues, in the context of a high-profile example, prosthesis selection for primary total hip replacement (THR). Here decision-makers require cost-effectiveness results for pre-defined age and gender groups.
Method: A Markov model of THR was populated with data from three large databases to compare the cost-effectiveness of cemented, uncemented and hybrid prostheses. Patient reported outcomes on THR are now routinely collected in England providing Generic (EQ5D) and condition specific QoL data before and after THR (n = 10,000). Data on prosthesis survival was taken from the National Joint Register (NJR) of England and Wales (n=217,000) and THR admissions data for English National Health Service Hospitals (HES) (n=457,000). Ordinary least squares regression analysis was used to report QoL following THR with each prosthesis type, for different patient subgroups, adjusting for baseline differences. Alternative model specifications were considered using measures of model fit such as AIC. Combination of data from HES and NJR allowed a semi-parametric consideration of prosthesis survival up to ten years with parametric extrapolation beyond ten years by patient subgroup.

Result: Across the age range considered (60 to 80), cemented prostheses were cheaper and offer superior survival, but hybrid prostheses provide larger gains in QoL. The regression results suggest that the relative gains in QoL for hybrid prostheses may be greater for younger patients. After inclusion of subgroup interactions cemented prostheses dominate hybrid and uncemented prostheses for eighty year olds. Hybrid prostheses are the most cost-effective alternative for sixty and seventy year olds (at λ=£20,000 per QALY the incremental net benefit for females age 70 are: uncemented, £181,000; cemented, £183,000; hybrid £184,000).

Conclusion: Large observational databases can allow crucial parameters in CEA models such as QoL and survival gains to be estimated both overall and for subgroups of high policy interest. This can help both providers and patients make more informed choices about competing alternatives.

Sunday, October 23, 2011 (Posters)

SMDM POSTER SESSION 1

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Grand Ballroom AB (Hyatt Regency Chicago)

Posters:

1. THE VALUE OF MALE HPV VACCINATION IN PREVENTING CERVICAL CANCER IN SOUTH VIETNAM (ESP)

Monisha Sharma, ScM, Stephen Sy, BS and Jane J. Kim, PhD, Harvard School of Public Health, Boston, MA
2. PEDIATRIC HODGKIN’S DISEASE: TRADEOFFS BETWEEN SHORT AND LONG-TERM MORTALITY RISKS (ESP)

Jennifer M. Yeh, PhD, Harvard School of Public Health, Boston, MA and Lisa Diller, MD, Dana-Farber Cancer Institute, Boston, MA

3. THE INFLUENCE OF PATIENT/PROVIDER BEHAVIOR ON THE VALUE OF ERCC1 TESTING RESEARCH IN STAGE II NON-SMALL CELL LUNG CANCER (ESP)

Joshua A. Roth, MHA¹, Josh J. Carlson, PhD¹, Lotte Steuten, PhD², Scott Ramsey, MD, PhD³ and David L. Veenstra, PharmD, PhD¹, (1)University of Washington, Seattle, WA, (2)University of Twente, AE Enschede, Netherlands, (3)Fred Hutchinson Cancer Research Center/University of Washington, Seattle, WA

4. A COST-UTILITY ANALYSIS COMPARING CONTINUOUS POSITIVE AIRWAY PRESSURE, ORAL APPLIANCE, AND SURGERY WHEN TREATING MODERATE OBSTRUCTIVE SLEEP APNEA IN MIDDLE-AGED CANADIAN MALES (ESP)

George Tomlinson, PhD¹, Tetyana B. Kendzerska, MD, MSc¹, Natasha Nanwa, MSc¹, Robert A. Fowler, MD, MSc² and Colin Shapiro, MD, PhD¹, (1)University of Toronto, Toronto, ON, Canada, (2)Sunnybrook Health Sciences Center, Toronto, ON, Canada

5. OPTIMIZATION OF FOLLOW-UP SCENARIOS FOLLOWING BREAST CANCER (ESP)

Maarten J. IJzerman, PhD¹, Sabine Siesling, PhD¹, Joost Klaase, MD, PhD² and Erwin Hans, PhD¹, (1)University of Twente, Enschede, Netherlands, (2)Medisch Spectrum Twente, Enschede, Netherlands

6. EDUCATIONAL INEQUALITIES IN HPV VACCINE ACCESS AND UTILIZATION: THE RELATIVE ROLES OF ECONOMICS AND AWARENESS (ESP)

Jennifer L. Grant, BA(H), Rollins School of Public Health, Atlanta, GA

7. DEFINING POLICY DECISION(S) AND INTEGRATING CONTEXTUAL EVIDENCE: A MULTIPLE CASE STUDY OF COLORECTAL CANCER SCREENING POLICY DEVELOPMENT (ESP)

Mark J. Dobrow, PhD, Cancer Care Ontario / University of Toronto, Toronto, ON, Canada
8. HEALTH CARE COMMISSIONING IN THE ENGLISH NHS: EVIDENCE, CO-PRODUCTION AND QUALITY OF DECISIONS (ESP)

Aileen Clarke, MD, MRCGP, FFPH\textsuperscript{1}, Penny Mills, BA\textsuperscript{1}, Sian Taylor-Phillips, PhD\textsuperscript{1}, John Powell, PhD, FFPH\textsuperscript{1}, Emmanouil Gkeredakis, PhD\textsuperscript{2}, Claudia Roginski, BSc\textsuperscript{2}, Harry Scarbrough, PhD\textsuperscript{2}, Davide Nicolini, PhD\textsuperscript{2} and Jacky Swan, PhD\textsuperscript{2}, (1)Warwick Medical School, University of Warwick, Coventry, United Kingdom, (2)Warwick Business School, University of Warwick, Coventry, United Kingdom

9. POTENTIAL BENEFITS OF SECOND-GENERATION VACCINES AGAINST HUMAN PAPILLOMAVIRUS (HPV) (ESP)

Sorapop Kiatpongsan, M.D. and Jane J. Kim, Ph.D., Harvard School of Public Health, Boston, MA

10. IS A BIRD IN THE HAND WORTH MORE THAN THREE IN THE BUSH? THE COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS OF CONJUGATE PNEUMOCOCCAL VACCINE PROGRAM OPTIONS IN ONTARIO, CANADA (ESP)

Beate Sander, RN, MBA, MEcDev\textsuperscript{1}, Anne Wormsbecker, MD\textsuperscript{2}, Jeff Kwong, MD, MSc\textsuperscript{3}, Gillian Lim, MSc\textsuperscript{1}, Allison McGeer, MD\textsuperscript{4}, Dylan Pillai, MD, PhD\textsuperscript{1} and Shelley Deeks, MD, MHSc\textsuperscript{1}, (1)Ontario Agency for Health Protection and Promotion, Toronto, ON, Canada, (2)The Hospital for Sick Children, Toronto, ON, Canada, (3)Institute for Clinical Evaluative Sciences, Toronto, ON, Canada, (4)Mount Sinai Hospital, Toronto, ON, Canada

11. COST-EFFECTIVENESS OF A HYPOTHETICAL INTERVENTION TO IMPROVE PHYSICIAN COMPLIANCE WITH TRAUMA TRIAGE GUIDELINES (ESP)

Deepika Mohan, MD, MPH, Amber E. Barnato, MD, MPH, MS, Matthew R. Rosengart, MD, MPH, Derek C. Angus, MD, MPH, FRCP and Kenneth Smith, MD, MS, University of Pittsburgh School of Medicine, Pittsburgh, PA

12. COST-EFFECTIVENESS OF ADULT PNEUMOCOCCAL CONJUGATE VACCINATION IN 50-YEAR-OLDS (ESP)

Kenneth J. Smith, MD, MS\textsuperscript{1}, Angela Wateska, MS\textsuperscript{1}, M. Patricia Nowalk, PhD\textsuperscript{2}, Mahlon Raymund, PhD\textsuperscript{2}, Pekka Nuorti, MD, DSc\textsuperscript{3} and Richard K. Zimmerman, MD,
13. BALANCING CARDIAC RISK AND IMMUNOLOGIC BENEFITS IN DECISIONS ON HIV ANTIRETROVIRAL TREATMENT INITIATION (ESP)

Diana M. Negoescu, BSE¹, Douglas K. Owens, MD, MS², Margaret L. Brandeau, PhD¹ and Eran Bendavid, MD¹, (1)Stanford University, Stanford, CA, (2)Veterans Affairs Palo Alto Health Care System and Stanford University, Stanford, CA

14. CLINICAL DECISION SUPPORT TO PROMOTE SAFE PRESCRIBING TO WOMEN OF REPRODUCTIVE AGE: DIFFERENTIAL EFFECTS BY SUBGROUP (ESP)

Sara M. Parisi, MS, MPH¹, Eleanor Bimla Schwarz, MD, MS¹, Steven M. Handler, MD, PhD¹, Gideon Koren, MD² and Gary S. Fischer, MD¹, (1)University of Pittsburgh, Pittsburgh, PA, (2)Hospital for Sick Children, Toronto, ON, Canada

15. DIAGNOSTIC VALUE OF IMAGING IN SYSTEMIC EMBOLISM (ESP)

Monvadi Srichai, MD¹, Robert Donnino, MD¹, Ruth Lim, MD¹, Amelia Wnorowski, MD², Ambika Nayar, MD¹ and R. Scott Braithwaite, MD, MSc, FACP³, (1)NYU School of Medicine, New York, NY, (2)University of Pennsylvania, Philadelphia, PA, (3)New York University School of Medicine, New York, NY

16. THE PRICE OF EMERGENCY CONTRACEPTION IN THE UNITED STATES: WHAT IS THE COST-EFFECTIVENESS OF ULIPRISTAL ACETATE VERSUS SINGLE DOSE LEVONORGESTREL? (ESP)

Lisa L. Bayer, MD¹, Alison B. Edelman, MD, MPH¹, Aaron B. Caughey, MD, MPP, MPH, PhD² and Maria I. Rodriguez, MD, MPH³, (1)Oregon Health & Science University, Portland, OR, (2)Oregon Health & Sciences University, Portland, OR, (3)Oregon Health and Science University, Portland, OR

17. IS CYP2D6 GENETIC TEST IN COMBINATION WITH HORMONE THERAPY FOR ER+ HORMONE SENSITIVE WOMEN WITH EARLY BREAST CANCER COST-EFFECTIVE? (ESP)

Sandjar Djalalov, PhD, St. Michael’s Hospital, Toronto, ON, Canada, Jaclyn Beca, St. Michael’s, Toronto, ON, Canada and Jeffrey Hoch, PhD, Cancer Care Ontario, Toronto, ON, Canada
18. DO PATIENT-REPORTED OUTCOMES CONTRIBUTE TO REGULATORY DECISIONS IN THE USA AND EUROPE? A SYSTEMATIC REVIEW OF GUIDANCE DOCUMENTS AND AUTHORIZATIONS OF MEDICINAL PRODUCTS FROM 2006 TO 2010 (ESP)

Benoit Arnould, PhD¹, Martine Caron, PhD², Marie-Pierre Emery², Patrick Marquis, MD³ and Catherine Acquadro, MD², (1)Mapi Values, Lyon, France, (2)Mapi Research Trust, Lyon, France, (3)Mapi Values, Boston, MA

19. COVERAGE WITH EVIDENCE DEVELOPMENT IN ONTARIO: EXPERIENCE WITH DESIGNING FIELD EVALUATIONS TO INFORM HEALTH POLICY DECISIONS (ESP)

James M. Bowen, BScPhm, MSc¹, Daria J. O'Reilly, PhD, MSc², Jean-Eric Tarride, PhD, MA², Feng Xie, PhD², Gordon Blackhouse, MSc.², Robert Hopkins, MA², Natasha Burke, BSc², Erica Nunes³ and Ron Goeree, MA², (1)St. Joseph's Healthcare Hamilton/McMaster University, Hamilton, ON, Canada, (2)McMaster University, Hamilton, ON, Canada, (3)St. Joseph's Healthcare Hamilton, Hamilton, ON, Canada

20. HEALTH ECONOMIC EVALUATION OF THROMBOPROPHYLACTIC TREATMENT WITH RIVAROXaban OR DABIGATRAN COMPARED WITH ENOXAPARIN IN PATIENTS UNDERGOING ELECTIVE HIP- OR KNEE REPLACEMENT SURGERY (ESP)

Vida Hamidi, Ph.D, Gunhild Hagen, MPhil and Marianne Klemp, MD, PhD, Norwegian Knowledge Centre for the Health Services, Oslo, Norway

21. THE ROLE OF MEDICAL SUPPORT PERSONNEL IN PREEMPTIVELY CHANGING CLINICAL DECISION PROCESS (ESP)

Eyal Schwartzberg, BPharm, MSc, PhD, Mickey Dudkiewicz, MD, MHA and Meir Oren, MD, MSc, MPH, Hillel Yaffe Medical Center, Hadera, Israel, Hadera, Israel

22. WITH MORE EFFECTIVE THERAPIES, SHOULD WE SCREEN FOR CHRONIC HEPATITIS C IN THE U.S.? (ESP)

Shan Liu, S.M., Lauren E. Cipriano, BSc, BA, PhD, Candidate and Jeremy D. Goldhaber-Fiebert, PhD, Stanford University, Stanford, CA
23. RATIONAL DECISION MAKING REVISITED: INSIGHTS FROM STUDYING INDIVIDUAL HEALTHCARE FUNDING DECISIONS IN ENGLAND (ESP)

Emmanouil Gkeredakis, PhD¹, Jacky Swan, PhD², Davide Nicolini, PhD², John Powell, PhD, FFPH¹, Claudia Roginski, BSc², Harry Scarbrough, PhD², Penny Mills, BA³, Sian Taylor-Phillips, PhD⁴ and Aileen Clarke, MD, FFPH, MRCGP⁴

(1)University of Warwick, Coventry, United Kingdom, (2)Warwick Business School, University of Warwick, Coventry, United Kingdom, (3)Warwick University, Coventry, United Kingdom, (4)The University of Warwick, Coventry, United Kingdom

24. GAZING INTO THE MS CRYSTAL BALL: A NOVEL PREDICTIVE TECHNIQUE FOR IDENTIFYING MS NON-ADHERENCE (ESP)

Suman Katragadda, PhD, Seda Follis, MS, Anna Vlahiotis, MA, Robert F. Nease, PhD and Sharon Frazee, PhD, Express Scripts Inc, St. Louis, MO

25. WITHDRAWN - A SYSTEMATIC REVIEW OF ADVANCED LUNG CANCER AND ITS ECONOMIC BURDEN (ESP)

Alyson L. Mahar, Raymond Fong, BA and Ana P. Johnson, PhD, Queen’s University, Kingston, ON, Canada

26. A DISCRETE-EVENT SIMULATION MODEL TO EVALUATE COST-EFFECTIVENESS OF SMOKING CESSATION TREATMENTS (ESP)

Odette Reifsnider, MS¹, Maria Mayorga, MS, PhD¹ and Stephanie B. Wheeler, PhD, MPH², (1)Clemson University, Clemson, SC, (2)University of North Carolina at Chapel Hill, Chapel Hill, NC

27. CORONARY COMPUTED TOMOGRAPHY VERSUS EXERCISE TESTING IN PATIENTS WITH STABLE CHEST PAIN: COMPARATIVE EFFECTIVENESS AND COSTS (ESP)

Tessa S.S. Genders, MSc¹, Bart S. Ferket, MD¹, Admir Dedic, MD¹, Tjebbe W. Galema, MD, PhD¹, Nico R. Mollet, MD, PhD¹, Pim J. de Feyter, MD, PhD¹, Kirsten E. Fleischmann, MD, MPH², Koen Nieman, MD, PhD¹ and M.G. Myriam Hunink, MD, PhD¹, (1)Erasmus University Medical Center, Rotterdam, Netherlands, (2)UCSF Medical Center, San Francisco, CA
28. DECISION MAKING BIASES IN JUDGMENTS ABOUT VASCULAR RISK FACTORS (BEC)

Julia Reinholz, PhD\textsuperscript{1}, Bernward Winter, MSc\textsuperscript{1}, Marc Linzmajer, MA\textsuperscript{2}, Peter Kenning, Prof., Dr.\textsuperscript{2} and Stefan Knecht, Prof., Dr.\textsuperscript{1}, (1)University of Muenster, Muenster, Germany, (2)Zeppelin University, Friedrichshafen, Germany

29. HEALTHY FOOD CHOICES: THE ROLE OF FRONT OF PACK NUTRITIONAL LABELLING FORMAT (BEC)

Hannah McClure, BSc, Danny Campbell, PhD and W. George Hutchinson, Professor, Queen's University Belfast, Belfast, United Kingdom

30. VALUE CLARIFICATION IN DECISION AIDS: A MISSING ELEMENT? (DEC)

Nick Bansback, PhD, Stirling Bryan, PhD, Linda Li, PhD and Larry D. Lynd, PhD, University of British Columbia, Vancouver, BC, Canada

31. GROUP CLUSTERING OF DCE-ELICITED PREFERENCES PREDICTS ADHERENCE TO ASTHMA PREVENTER MEDICATION (DEC)

Naomi Gryfe Saperia, M.Sc., Leora C. Swartzman, PhD and Christopher Licskai, MD, University of Western Ontario, London, ON, Canada

32. INVESTIGATING THE ROLE OF RISK PERCEPTIONS IN PREDICTING PROSTATE CANCER SCREENING BEHAVIOUR AS A FUNCTION OF FAMILY HISTORY: THE CONTRIBUTION OF AVAILABILITY AND REPRESENTATIVENESS HEURISTICS (DEC)

Michelle McDowell, BPsych(hons)\textsuperscript{1}, Stefano Occhipinti\textsuperscript{1} and Suzanne Chambers\textsuperscript{2}, (1)Griffith University, Brisbane, Australia, (2)Griffith University, Gold Coast, Australia

33. PATIENT PRIORITIES REGARDING CURRENTLY RECOMMENDED COLORECTAL CANCER SCREENING OPTIONS (DEC)

James G. Dolan, MD, University of Rochester, Rochester, NY, Emily Boohaker, MD, HealthSpring of Alabama, Birmingham, AL, Jeroan Allison, MD, University of Massachusetts, Worcester, MA and Thomas F. Imperiale, MD, Indiana University School of Medicine, Indianapolis, IN
34. ATTITUDES TOWARDS MODE OF DELIVERY CHOICE AMONG A DIVERSE POPULATION OF PREGNANT WOMEN (DEC)

Kathryn Houston, MD, MA¹, Anjali Kaimal, MD, MAS², Ann Drapkin Lyerly, MD, MA³, Margaret Olivia Little, PhD⁴, Aaron B. Caughey, MD, MPP, MPH, PhD⁵, Sanae Nakagawa, MA¹ and Miriam Kuppermann, PhD, MPH¹, (1)University of California, San Francisco, San Francisco, CA, (2)Massachusetts General Hospital, Harvard Medical School, Boston, MA, (3)University of North Carolina, Chapel Hill, NC, (4)Georgetown University, Washington DC, DC, (5)Oregon Health & Sciences University, Portland, OR

35. LITERACY AND NUMERACY IN VETERANS AND THEIR IMPACT ON CANCER TREATMENT PERCEPTIONS AND ANXIETY (DEC)

Angela Fagerlin, PhD¹, Margaret Holmes-Rovner, PhD², Sara J. Knight, PhD³, Stewart Alexander, PhD⁴, Bruce Ling, MD, MPH⁵, James Tulsky, MD⁴, David Rovner, MD⁶, Julie E. Tobi, MA⁷, Valerie Kahn, MPH⁸ and Peter A. Ubel, MD⁹, (1)University of Michigan / Ann Arbor VA, Ann Arbor, MI, (2)Center for Ethics, E. Lansing, MI, (3)San Francisco VA Medical Center, San Francisco, CA, (4)Duke University, Durham, NC, (5)University of Pittsburgh, Pittsburgh, PA, (6)Michigan State University College of Human Medicine, East Lansing, MI, (7)MI, (8)University of Michigan, Ann Arbor, MI, (9)University of Michigan, Ann Arbor, USA

36. IF I'M NOT HIGH RISK, THEN THAT'S NOT MY RISK: TAILORING ESTIMATES FOR LOW-RISK PATIENTS MAY UNDERMINE PERCEIVED RELEVANCE (DEC)

Brian J. Zikmund-Fisher, PhD¹, Holly Witteman, PhD¹, Mark Dickson, MA¹ and Ethan A. Halm, MD, MPH², (1)University of Michigan, Ann Arbor, MI, (2)University of Texas Southwestern, Dallas, TX

37. GIRLS' INTERPRETATION OF A HPV VACCINATION LEAFLET: A QUESTIONNAIRE STUDY (DEC)

Robine Hofman, MSc¹, Puck A.W.H. Schiffers², Jan-Hendrik Richardus, MD, PhD³, Inge M.C.M. de Kok, PhD⁴, Marjolein van Ballegooijen, MD, PhD⁵, Peter A. Ubel, MD⁶ and Ida J. Korfage, PhD¹, (1)Erasmus MC - University Medical Center, Rotterdam, Netherlands, (2)VU University, Amsterdam, Netherlands, (3)Erasmus MC - University Medical Centre; Municipal Public Health Service Rotterdam-Rijnmond, Rotterdam, Netherlands, (4)Erasmus MC, University Medical Center, Rotterdam, Netherlands, (5)Erasmus MC - University Medical Center Rotterdam, Rotterdam, Netherlands, (6)Duke University, Durham, NC
38. THE DELIVERY OF NON-EVIDENCE BASED PREVENTIVE SERVICES DURING PERIODIC HEALTH EXAMINATIONS (DEC)

Deirdre A. Shires, MPH, MSW¹, George Divine, PhD¹ and Jennifer Elston Lafata, PhD², (1)Henry Ford Health System, Detroit, MI, (2)Virginia Commonwealth University, Richmond, VA

39. COMPREHENSIVE ASSESSMENT OF MEN'S PREFERENCES FOR PROSTATE CANCER CARE (DEC)

Sara J. Knight, PhD¹, Eunjung Lim², Gregory L. Green, MPH¹, Melissa S. Yale, MS², David M. Latini, PhD³, Mary-Margaret Chren, MD¹ and Laura P. Sands, PhD², (1)San Francisco VA Medical Center, San Francisco, CA, (2)Purdue University, West Lafayette, IN, (3)Michael E. DeBakey Veterans Affairs Medical Center/Baylor College of Medicine, Houston, TX

40. DEVELOPMENT AND VALIDATION OF A GLAUCOMA SPECIFIC UTILITY ELICITATION INSTRUMENT (DEC)

Steven M. Kymes, Ph.D.¹, Colleen M. Peters, M.A.¹, Kathleen M. Beusterien, M.P.H², Sameer V. Kotak, B., Pharm, M.S.³, Dustin L. Stwalley¹ and Andreas Pleil, PhD³, (1)Washington University School of Medicine, Saint Louis, MO, (2)Oxford Outcomes, Washington, DC, (3)Pfizer, Inc., New York, NY

41. THE QUALITY OF DECISIONS ABOUT BREAST CANCER SURGERY (DEC)

Clara Lee, MD, MPP¹, Jeffrey K. Belkora, PhD², Yuchiao Chang, PhD³, Beverly Moy, MD, MPH³, Ann Partridge, MD, MPH⁴ and Karen R. Sepucha, PhD³, (1)University of North Carolina Chapel Hill, Chapel Hill, NC, (2)University of California, San Francisco, San Francisco, CA, (3)Massachusetts General Hospital, Boston, MA, (4)Dana-Farber Cancer Institute, Boston, MA

42. DOES MESSAGE SOURCE AFFECT PARENTS' RESPONSES TO ADS PROMOTING HPV VACCINE FOR BOYS? (DEC)

Jessica A. Kadis, MPH¹, Paul L. Reiter, PhD², Annie-Laurie McRee, DrPH¹ and Noel T. Brewer, PhD¹, (1)UNC Gillings School of Global Public Health, Chapel Hill, NC, (2)UNC Lineberger Comprehensive Cancer Center, Chapel Hill, NC
43. HOW INITIAL PUBLIC OPINION ON VACCINATION AFFECTS VACCINATION ADHERENCE DURING INFECTIOUS DISEASE OUTBREAK: AN AGENT-BASED SIMULATION STUDY IN A RANDOMLY GENERATED SOCIAL NETWORK (DEC)

Yu Teng, BS, Nan Kong, PhD, Torsten Reimer, PhD and Stephen A. Swope, Purdue University, West Lafayette, IN

44. ENCOUNTERS WITH “GODS ON THEIR HIGH THRONES IN HEAVEN”: PATIENT PERCEPTIONS OF WHAT IT TAKES TO PARTICIPATE IN SHARED DECISION MAKING (DEC)

Dominick Frosch, PhD¹, Suepattra May, PhD, MPH¹, Katharine Rendle, MA, MSW¹, Caroline Tietbohl, BA¹ and Glyn Elwyn, MD, PhD², (1)Palo Alto Medical Foundation Research Institute, Palo Alto, CA, (2)Cardiff University, Cardiff, United Kingdom

45. ASSESSING THE QUALITY OF BREAST CANCER SURGERY DECISIONS IN A NATIONAL MEDICARE SAMPLE (DEC)

Karen R. Sepucha, PhD, Massachusetts General Hospital, Boston, MA, Carol Cosenza, MSW, University of Massachusetts Boston, Boston, MA and Julie Bynum, M.D., M.P.H., Dartmouth Medical School, Lebanon, NH

46. THE IMPACT OF SUBJECTIVE LIFE EXPECTANCY ON HEALTH STATE VALUATION WITH THE TIME TRADE-OFF METHOD (DEC)

Emelie Heintz, MSc, Linköping University, Stockholm, Sweden and Lars-Åke Levin, PhD, Center for medical technology assessment, Linköping, Sweden

47. THE DEVELOPMENT OF A DECISION-AID TO GUIDE COUNSELING OF PARENTS FACING IMMINENT EXTREME PREMATURE DELIVERY (DEC)

Ursula Guillen, MD¹, Sanghee Suh, BS¹, David Munson, MD¹, Michael Posencheg, MD¹, Elissa Truitt, MSSA, LSW¹, Amiram Gafni, PhD², John A.F Zupancic, MD, ScD³ and Haresh Kirpalani, BM, MSc¹, (1)Children's Hospital of Philadelphia, Philadelphia, PA, (2)McMaster University, Hamilton, ON, Canada, (3)Harvard Medical School, Boston, MA

48. DOES DIAGNOSIS MATTER IN END-OF-LIFE DECISION MAKING IN THE HOSPITAL? (DEC)

Frederika E. Witkamp, RN¹, L. van Zuylen, MD, PhD², C.C.D. van der Rijt, MD,
49. “DON’T KNOW” RESPONSES TO RISK PERCEPTION MEASURES: IMPLICATIONS FOR UNDERSERVED POPULATIONS (DEC)

Erika A. Waters, PhD, MPH\(^1\), Jennifer Hay, PhD\(^2\), Heather Orom, PhD\(^3\), Marc T. Kiviniemi, PhD\(^3\) and Bettina Drake, PhD, MPH\(^1\), (1)Washington University School of Medicine, Saint Louis, MO, (2)Memorial Sloan-Kettering Cancer Center, New York, NY, (3)University at Buffalo, SUNY, Buffalo, NY

50. THE IMPORTANCE OF INTERACTIONS IN DETERMINING HOW COMMUNITY PRACTITIONERS DIAGNOSE AND TREAT ACUTE RESPIRATORY TRACT INFECTIONS (DEC)

Robert Wigton, MD, MS\(^1\), Carol Darr, PhD\(^2\), Kitty Corbett, PhD\(^3\), Devin Nickol, MD\(^1\) and Ralph Gonzales, MD\(^4\), (1)University of Nebraska Medical Center College of Medicine, Omaha, NE, (2)University of Colorado College at Denver, Denver, CO, (3)Simon Fraser University, Burnaby, BC, Canada, (4)University of California San Francisco, San Francisco, CA

51. NEUROTICISM IS ASSOCIATED WITH SELF-RATED HEALTH ON THE EQ-5D (DEC)

Kim Rand-Hendriksen, Cand.Psychol\(^1\), Liv Ariane Augestad, MD\(^1\), Ivar Sønbø Kristiansen, MD, PhD, MPH\(^2\) and Knut Stavem, MD, MPH, PhD\(^1\), (1)Akershus University Hospital, Lørenskog, Norway, (2)University of Oslo, Oslo, Norway

52. CONCRETENESS AND SIMPLICITY EXPLAIN THE EFFECT OF NUMERICAL AND GRAPHICAL RISK FORMATS ON PERCEIVED LIKELIHOOD AND CHOICE (DEC)

Danielle R.M. Timmermans, PhD, EMGO Institute/ VU University Medical Center, Amsterdam, Netherlands and J. Oudhoff, PhD, VU University Medical Center, Amsterdam, Netherlands

53. SOURCES OF CONFLICTING MEDICATION INFORMATION: ASSOCIATIONS WITH DEMOGRAPHIC FACTORS AND MEDICATION ADHERENCE (DEC)

Delesha M. Carpenter, PhD, MSPH, Emily A. Elstad, MPH, Susan J. Blalock, PhD,
54. BMI, CANCER RISK PERCEPTION, AND PREVENTIVE BELIEFS (DEC)

Julie M. Kapp, MPH, PhD, University of Missouri, Columbia, MO and Walton Sumner, MD, Washington University, St. Louis, MO

55. THE EFFECT OF DIFFERENT PROPENSITY REGRESSION TECHNIQUES ON PREDICTIVE ACCURACY IN COMPARATIVE EFFECTIVENESS RESEARCH (MET)

Amy S. Nowacki, PhD, Brian J. Wells, MD, MS, Changhong Yu, MS and Michael W. Kattan, PhD, Cleveland Clinic, Cleveland, OH

56. DETERMINING THE MOST INFORMATIVE MAMMOGRAPHIC FEATURES IN BREAST CANCER DIAGNOSIS BY MULTIDIMENSIONAL MUTUAL INFORMATION ANALYSIS AND BAYESIAN REASONING (MET)

Yirong Wu, PhD, Oguzhan Alagoz, PhD, Mehmet Ayvaci, MS, David J. Vanness, Ph.D. and Elizabeth S. Burnside, MD, MPH, MS, (1)University of Wisconsin-Madison, Madison, WI, (2)Department of Population Health Sciences, Madison, WI

57. WINTDRAWN - A NOVEL JOINT HEALTH-STATE TARIFF-VALUE PREDICTOR BASED ON UNITS OF MORBIDITY (MET)

Mathias Barra, PhD, Kim Rand-Hendriksen, Cand.Psychol, Liv Ariane Augustad, MD and Knut Stavem, MD, MPH, PhD, (1)HØKH, Lørenskog, Norway, (2)Akershus University Hospital, Lørenskog, Norway

58. MICROSIMULATION AND CALIBRATION METHODS ACCOUNTING FOR OBESITY AND UNDERWEIGHT-RELATED HEALTH IN COUNTRIES LIKE INDIA (MET)

Stephanie L. Bailey, PhD, Kunnambath Ramadas, MD, Catherine Sauvaget, PhD and Jeremy D. Goldhaber-Fiebert, PhD, (1)Stanford University, Stanford, CA, (2)Regional Cancer Centre, Trivandrum, India, (3)International Agency for Research on Cancer, Lyon, France
59. AGENT-BASED APPROACH TO CONTACT PATTERNS MODELLING (MET)

Marija Zivkovic Gojovic, PhD¹, Beate Sander, RN, MBA, MEcDev¹, Ashleigh Tuite² and Natasha Crowcroft, PhD¹, (1)Ontario Agency for Health Protection and Promotion, Toronto, ON, Canada, (2)University of Toronto, Toronto, Ontario, Toronto, ON, Canada

Monday, October 24, 2011 (Posters)

SMDM POSTER SESSION 2

« Previous Session  |  Next Session »

Grand Ballroom AB (Hyatt Regency Chicago)

Posters:

1. A RISK-BENEFIT ANALYSIS OF FACTOR V LEIDEN TESTING TO IMPROVE PREGNANCY OUTCOMES AMONG HIGH-RISK WOMEN (ESP)

Preeti S. Bajaj and David L. Veenstra, PharmD, PhD, University of Washington, Seattle, WA

2. A COST-EFFECTIVENESS ANALYSIS OF OFF-LABEL BIOLOGICS TO TREAT SARCOID POSTERIOR UVEITIS VERSUS STANDARD OF CARE: COMPARING INFlixIMAB TO METHOTREXATE AND SYSTEMIC STEROIDS (ESP)

William V. Padula, MS, University of Colorado, Aurora, CO, Taygan Yilmaz, MPH, Dartmouth College, Lebanon, NH and Miguel Cordero-Coma, M.D., Hospital de Leon, Leon, Spain

3. ESTIMATING MEDICAL EXPENDITURES FOR CHILDHOOD OBESITY COST-EFFECTIVENESS ANALYSES (ESP)

Davene R. Wright, Harvard University, Boston, MA and Lisa Prosser, PhD, University of Michigan, Ann Arbor, MI
4. DOES TREATMENT OF ASYMPTOMATIC HYPERURICEMIA IMPROVE HEALTH OUTCOMES? A DECISION-ANALYTIC EVALUATION (ESP)

Roopa Akkineni¹, Alexandra Lee², Katherine L. Miller³, Anna N.A. Tosteson, ScD⁴, Hyon K. Choi⁵, Yanyan Zhu⁵ and Daniel Albert¹, (1)Dartmouth Hitchcock Medical Center, Lebanon, NH, (2)Veterans Affairs, White River Junction, VT, (3)Northeastern Ohio Universities College of Medicine, Rootstown, OH, (4)The Dartmouth Institute for Health Policy & Clinical Practice, Lebanon, NH, (5)Boston University, Boston, MA

5. TO BE SCREENED OR NOT TO BE SCREENED? THE CONSEQUENCES OF PROSTATE-SPECIFIC ANTIGEN SCREENING FOR THE INDIVIDUAL (ESP)

E.M. Wever, MSc, G. Draisma, PhD, E.A.M. Heijnsdijk, PhD and H. J. de Koning, PhD, MD, Erasmus Medical Center, Rotterdam, Netherlands

6. ULNAR NEUROPATHY AT THE ELBOW: A COST-UTILITY ANALYSIS (ESP)

Jae W. Song, M.D., M.S., Kevin C. Chung, M.D., M.S. and Lisa A. Prosser, M.S., Ph.D., University of Michigan, Ann Arbor, MI

7. COST-EFFECTIVENESS ANALYSIS OF IMPLEMENTING A SCREENING PROGRAM FOR HEPATITIS C INFECTION AMONG EGYPTIAN IMMIGRANTS IN THE UNITED STATES (ESP)

David D. Kim, B.S.E., Amr S. Soliman, M.D., Ph.D. and David W. Hutton, Ph.D., University of Michigan School of Public Health, Ann Arbor, MI

8. USE OF HIGH-SENSITIVE TROPONIN T ASSAY FOR THE EARLY DIAGNOSIS OF ACUTE MYOCARDIAL INFARCTION IN CHEST PAIN PATIENTS: AN ECONOMIC EVALUATION (ESP)

Anil Vaidya, MBBS, MPH¹, Johan L. Severens, PhD², Brenda W.C. Bongaerts, PhD³, Kitty B.J.M. Cleutjens, PhD³, Patty J. Nelemans, MD, PhD⁴, Leonard Hofstra, MD, PhD⁵, Marja Van Dieijen-Visser, PhD⁶ and Erik A.L. Biessen, PhD³, (1)Maastricht University, Maastricht, Netherlands, (2)Erasmus University Rotterdam, Rotterdam, Netherlands, (3)Department of Pathology, Cardiovascular Research Institute Maastricht (CARIM), Maastricht University Medical Centre, Maastricht, Netherlands, (4)Department of Epidemiology, Maastricht University, Maastricht, Netherlands, (5)Cardiology Centrum, Utrecht, Netherlands, (6)Department of Clinical Chemistry, Maastricht University, Maastricht, Netherlands
9. UNIVERSAL NEWBORN SCREENING FOR SEVERE COMBINED IMMUNODEFICIENCY: A COST EFFECTIVENESS ANALYSIS (ESP)

Rachel A. Pilliod, Oregon Health & Science University, Portland, OR, Mika Ohno, University of California, San Francisco, San Francisco, CA, Brian L. Shaffer, MD, Oregon Health and Sciences University, Portland, OR, Maria I. Rodriguez, MD, MPH, Oregon Health and Science University, Portland, OR and Aaron B. Caughey, MD, MPP, MPH, PhD, Oregon Health & Sciences University, Portland, OR

10. CAROTID ENDARTERECTOMY VERSUS STENTING: A DECISION ANALYSIS (ESP)

Daniel Yavin, MD\textsuperscript{1}, Starr Tze, PENg\textsuperscript{2}, John H. Wong, MD, MSc\textsuperscript{1} and Garnette R. Sutherland, MD\textsuperscript{1}, (1)University of Calgary, Calgary, AB, Canada, (2)Curtin University, Calgary, AB, Canada

11. CREATING A VOCABULARY FRAMEWORK FOR PTSD: TOWARD A BETTER UNDERSTANDING OF SYMPTOMATOLOGY, TREATMENT, RESILIENCY, AND SUICIDALITY (ESP)

Maryan Zirkle, MD, MA\textsuperscript{1}, Dallas Swanson, BS\textsuperscript{1}, Susan Severance, MPH\textsuperscript{1}, Stephen L. Luther, PhD, MBA\textsuperscript{2} and David H. Hickam, MD, MPH\textsuperscript{1}, (1)Portland VA Medical Center, Portland, OR, (2)James A. Haley VA Hospital, Tampa, FL

12. TWO-YEAR DIRECT AND INDIRECT COSTS FOR PATIENTS WITH INFLAMMATORY RHEUMATIC JOINT DISEASES: DATA FROM REAL LIFE FOLLOW-UP OF PATIENTS IN THE NOR-DMARD REGISTRY (ESP)

Maria K. Kvamme, MSc\textsuperscript{1}, Elisabeth Lie, MD, Research, fellow\textsuperscript{2}, Tore K. Kvien, MD, PhD, Professor\textsuperscript{2} and Ivar Sønbø Kristiansen, MD, PhD, MPH\textsuperscript{1}, (1)University of Oslo, Oslo, Norway, (2)Diakonhjemmet Hospital, Oslo, Norway

13. COST-EFFECTIVENESS OF MANUAL THERAPY, EXERCISE, AND MANUAL THERAPY AND EXERCISE COMBINED FOR THE MANAGEMENT OF OSTEOARTHRITIS OF THE HIP AND/OR KNEE (ESP)

Daniel Pinto, DPT, M. Clare Robertson, BSc[Hons], BCom, PhD, Paul Hansen, BCom, PGDipCom, MEd, PhD and J. Haxby Abbott, DipPhty, DipGrad, MScPT, PhD, University of Otago, Dunedin, New Zealand
14. BLACK RACE IS ASSOCIATED WITH PREFERENTIAL USE OF HOSPICE AT HOME VERSUS AT A SKILLED NURSING FACILITY (ESP)

**Cyrena Torrey Simons, MD, PhD**, VA Palo Alto Health Care System and Stanford University, Stanford, CA, Monica Bhargava, MD, Stanford University School of Medicine, Stanford, CA and Jayanta Bhattacharya, MD, PhD, Stanford University, Stanford, CA

15. MORE INTENSIVE COLORECTAL CANCER SCREENING FOR OBESE SMOKERS: THE IMPACT OF LIFE EXPECTANCY (ESP)

Maaike A. Meulenberg, MSc1, Iris Lansdorp-Vogelaar, PhD1, Y. Claire Wang, MD, ScD2, Eric J. Feuer, PhD3, Ann G. Zauber, PhD4, Harry J. de Koning, MD, PhD1, Marjolein van Ballegooijen, MD, PhD1 and **E.M. Wever, MSc**5, (1)Erasmus MC, University Medical Center Rotterdam, Rotterdam, Netherlands, (2)Mailman School of Public Health, New York, NY, (3)National Cancer Institute, Bethesda, MD, (4)Memorial Sloan-Kettering Cancer Center, New York, NY, (5)Erasmus Medical Center, Rotterdam, Netherlands

16. ANALYZING CLAIMS DATA FOR HEALTH SERVICES USE IN CHILDREN AND ADOLESCENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ESP)

**Patrick Einzinger**1, Günther Zauner2, Niki Popper2, Gottfried Endel3 and Felix Breitenecker1, (1)Vienna University of Technology, Vienna, Austria, (2)Dwh Simulation Services, Vienna, Austria, (3)Main Association of Austrian Social Security Institutions, Vienna, Austria

17. BLEEDING RISK AND ANTICOAGULATION DURATION AFTER UNPROVOKED VENOUS THROMBOEMBOLISM: A DECISION ANALYSIS (ESP)

**Anna K. Donovan, M.D.**1, Margaret V. Ragni, M.D., M.P.H.1 and Kenneth J. Smith, MD, MS2, (1)University of Pittsburgh School of Medicine, Pittsburgh, PA, (2)University of Pittsburgh, Pittsburgh, PA

18. RISK ANALYSIS AND DECISION MAKING IN NEUROSURGERY: BRAIN MAPPING STRUCTURAL INVARIANT OF COGNITIVE FUNCTIONS FOR SURGICAL PLANNING (ESP)

**Olena Nikolenko, M.D., Ph.D.**, Tufts Medical Center, Boston, MA, Lusiena Klaupik, M.D., Ph.D., Odessa National Medical University, Odessa, Ukraine and Oleg Nikolenko, PhD, Odessa National University, Odessa, Ukraine
19. ACCEPTABILITY OF TEXT MESSAGING AS A TOOL TO COMMUNICATE WITH CHRONIC LIVER DISEASE PATIENTS (ESP)

Ayan Rage, MD\(^1\), Tuyyab Hassan, MD, MRCP\(^1\), Ayesha Kanwal, MD\(^1\), Kevin Mullen, MD\(^1\) and Adam T. Perzynski, PhD\(^2\), (1)Metrohealth Medical Center, Cleveland, OH, (2)Case Western Reserve University at MetroHealth, Cleveland, OH

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20. PHYSICIANS AND COSTS: LACK OF INFORMATION OR LACK OF MOTIVATION? (ESP)

Ida Iren Eriksen and Hans Olav Melberg, PhD, University of Oslo, Oslo, Norway

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21. SHOULD CELL FREE FETAL DNA TESTING REPLACE ANTENATAL RHESUS IMMUNE GLOBULIN ADMINISTRATION? (ESP)

Kimberly K. Ma, MD\(^1\), Maria I. Rodriguez, MD, MPH\(^1\), Yvonne Cheng, MD, MPH\(^2\), Mary E. Norton, MD\(^3\) and Aaron B. Caughey, MD, MPP, MPH, PhD\(^4\), (1)Oregon Health and Science University, Portland, OR, (2)University of California, San Francisco, CA, (3)Stanford University, Stanford, CA, (4)Oregon Health & Sciences University, Portland, OR

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22. CATHETER ABLATION STRATEGIES FOR RHYTHM CONTROL IN PATIENTS WITH ATRIAL FIBRILLATION: A SYSTEMATIC REVIEW AND META-ANALYSIS (ESP)

Nazila Assasi\(^1\), Feng Xie\(^1\), Gord Blackhouse\(^1\), Kathryn Gaebel\(^2\), Diana Robertson\(^1\), Robert Hopkins, MA\(^1\), Jeff S. Healey\(^1\) and Ron Goeree\(^1\), (1)McMaster University, Hamilton, ON, Canada, (2)St Josephs Healthcare, Hamilton, ON, Canada

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23. CONSIDERATIONS FOR TARGETED RECRUITMENT OF PATIENTS WITH A CHRONIC CONDITION USING AN ONLINE SURVEY (ESP)

Kristin M. Khalaf, PharmD\(^1\), Sonya Eremenco, MA\(^2\), Denise Globe, PhD\(^1\), Edward P. Armstrong, PharmD\(^3\), Daniel C. Malone, RPh, PhD\(^3\) and Karin Coyne, PhD, MPH\(^2\), (1)Allergan, Inc, Irvine, CA, (2)United BioSource Corporation, Bethesda, MD, (3)University of Arizona, Tucson, AZ
24. PHYSICIANS AND COSTS: LACK OF INFORMATION OR LACK OF MOTIVATION? (ESP)

Ida Iren Eriksen and Hans Olav Melberg, PhD, University of Oslo, Oslo, Norway

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25. ARE PREGNANT WOMEN RATIONAL? AN ANALYSIS OF AMNIOCENTESIS CHOICE (BEC)

Clémentine Garrouste Jr.\textsuperscript{1}, Thibault Gajdos Sr.\textsuperscript{2} and Pierre Yves Geoffard Sr.\textsuperscript{1}, (1)PSE, Paris, France, (2)GREQAM, Marseille, France

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26. MAXIMIZERS AND SATISFICERS IN THE EMERGENCY DEPARTMENT (BEC)

Edward S. Bessman, MD, The Johns Hopkins School of Medicine, Baltimore, MD and Douglas E. Hough, PhD, The Johns Hopkins Carey Business School, Baltimore, MD

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27. PAYMENT STRUCTURES IN THE MEDICAL COMMUNITY: AN EXPERIMENTAL STUDY (BEC)

Ellen Green, MA, Virginia Tech, Blacksburg, VA

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28. RANDOMIZED TRIAL OF PAIRED AND TRIPLET PROFILE CHOICE TASKS IN THE ELICITATION OF PATIENT PREFERENCES FOR HEARING AIDS WITH CONJOINT ANALYSIS (BEC)

John F.P. Bridges, PhD\textsuperscript{1}, Karin.G.M. Groothuis-Oudshoorn, PhD\textsuperscript{2} and Christine Buttorff, BA\textsuperscript{1}, (1)Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, (2)University of Twente, Enschede, Netherlands

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29. QUESTIONING THE NEUTRALITY OF DECISION AIDS (BEC)

Jennifer Blumenthal-Barby, Ph.D., Baylor College of Medicine, Houston, TX

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30. BETWEEN PROD AND PERSUASION: INQUIRY INTO THE NATURE AND JUSTIFICATION OF HEALTH NUDGES (BEC)

Yashar Saghai, MA, Kennedy Institute of Ethics, Washington, DC
31. PROJECTION BIAS AMONG PERSONS RECEIVING SPINAL INJECTION AS TREATMENT FOR LUMBAR PAIN (BEC)

Richard Wilson, MD, MS, MetroHealth Medical Center/Case Western Reserve University, Cleveland, OH, Justin Sydnor, PhD, University of Wisconsin, Madison, WI, Brian Snitily, Case Western Reserve University, Cleveland, OH and Adam T. Perzynski, PhD, Case Western Reserve University at MetroHealth, Cleveland, OH

32. A BEHAVIOR-DRIVEN MATHEMATICAL MODEL OF MEDICATION COMPLIANCE (BEC)

Tuan Dinh, PhD and Peter Alperin, MD, Archimedes Inc., San Francisco, CA

33. UNCERTAINTY, GAINS, LOSSES, PROBABILITY... WHAT IS MORE IMPORTANT IN TREATMENT PREFERENCES? (BEC)

Karen M. Kramer, PhD, University of Kansas School of Medicine - Wichita, Wichita, KS

34. ASSESSING THE INFLUENCE OF DELAY DISCOUNTING OF FUTURE HEALTH ON DIET AND PHYSICAL ACTIVITY BEHAVIORS: DOES IT DIFFER BY BODY MASS INDEX CATEGORY? (BEC)

Kimberly Bosworth Blake, PharmD, MBA, PhD, Auburn University Harrison School of Pharmacy, Auburn, AL and Carole V. Harris, PhD, West Virginia University School of Medicine, Morgantown, WV

35. SHOULD PATIENTS WITH RESPIRATORY TRACT INFECTIONS REFRAIN FROM EXERCISE, STAY INDOORS OR STAY IN BED? SURVEY OF GENERAL PRACTITIONERS’ JUDGEMENTS IN POLAND AND NORWAY (BEC)

Peder A. Halvorsen, MD, PhD¹, Maciek Godycki-Cwirko, MD, PhD², Katrine Wennevold, MD¹ and Hasse Melbye, MD, PhD¹, (1)University of Tromsø, Tromsø, Norway, (2)Medical University of Lodz, Lodz, Poland

36. THE IMPACT OF PEER PRESSURE AND RISK PREFERENCE ON SMOKING, DRINKING AND DIETING BEHAVIOR AMONG JAPANESE ADOLESCENT AND COLLEGE STUDENT (ESP)

Sachiko Shimizu, RN, MSC¹, Megumi Hori, MSC¹, Mai Utada, MSC¹, Maya Iwasa, RN, PhD², Rie Tomizawa, RN, MSC² and Yuko Ohno, PhD¹, (1)Osaka University, Suita, Osaka, Japan, (2)Senri-Kinran University, Suita, Osaka, Japan
37. FACTORS IN INFORMED DECISION MAKING IN HEPATITIS C TESTING (DEC)

Anna M. Quinn, MPH, Candidate¹, Heidi Swan, MPH¹, Randa Sifri, MD¹, Victor Nevarro, MD², Ronald E. Myers, PhD¹ and Amy Leader, DrPH, MPH¹, (1)Thomas Jefferson University, Philadelphia, PA, (2)Jefferson Medical College, Philadelphia, PA

38. END-OF-LIFE DECISIONS IN THE HOSPITAL; WHAT DO PATIENTS PREFER? (DEC)

Frederika E. Witkamp, RN¹, L. van Zuylen, MD, PhD², C.C.D. van der Rijt, MD, PhD, Prof² and A. van der Heide, MD, PhD², (1)Erasmus MC University Medical Center, Rotterdam, Netherlands, (2)Erasmus MC University Medical Centre, Rotterdam, Netherlands

39. RISKS AND BENEFITS OF PROSTATE BIOPSY FOLLOWING AN ABNORMAL PSA SCREEN IN GENERAL AND IN A SPECIFIC PATIENT: DECISION ANALYSES (DEC)

Mark D. Yinger, MD, Stephen G. Pauker, MD and John B. Wong, MD, Tufts Medical Center, Boston, MA

40. APPLYING VERBAL PROTOCOL ANALYSIS TO INVESTIGATE THE DECISION-MAKING STRATEGIES MEN USE WHEN CONSIDERING PROSTATE CANCER RISK FACTORS AND EARLY DETECTION SCREENING BEHAVIOUR: COMPARING MEN WITH AND WITHOUT A FAMILY HISTORY (DEC)

Michelle McDowell, BPsych(hons)¹, Stefano Occhipinti¹ and Suzanne Chambers², (1)Griffith University, Brisbane, Australia, (2)Griffith University, Gold Coast, Australia

41. THE COMPLEXITY AND MULTIDIMENSIONALITY OF HEALTH RISK PERCEPTION: DISTORTIONS AND DETERMINANTS OF RISK PERCEPTION FOR VASCULAR AND ONCOLOGICAL HEALTH RISKS AND RISK FACTORS IN GERMANY (DEC)

Sharmila R. Sakthivel and Stefan Knecht, Prof., Dr., University of Muenster, Muenster, Germany
42. HPV VACCINATION YES OR NO: A QUESTIONNAIRE STUDY AMONG PARENTS ON DETERMINANTS OF INTENTIONS (DEC)

Robine Hofman, MSc¹, Pepijn van Empelen, PhD², Jan-Hendrik Richardus, MD, PhD³, Inge M.C.M. de Kok, PhD¹, Marjolein van Ballegooijen, MD, PhD¹ and Ida J. Korfage, PhD¹, (1)Erasmus MC - University Medical Center, Rotterdam, Netherlands, (2)Erasmus MC - University Medical Center; TNO Quality of Life, Rotterdam, Netherlands, (3)Erasmus MC - University Medical Center; Municipal Public Health Service Rotterdam-Rijnmond, Rotterdam, Netherlands

43. HOW DO PATIENTS RESOLVE CONFLICTING MEDICATION RELATED INFORMATION? (DEC)

Emily A. Elstad, MPH, Delesha M. Carpenter, PhD, MSPH, Robert F. DeVellis, PhD and Susan J. Blalock, PhD, MPH, University of North Carolina at Chapel Hill, Chapel Hill, NC

44. DO PARENTS CONSIDER BENEFITS TO OTHERS WHEN DECIDING WHETHER TO IMMUNIZE THEIR CHILD? (DEC)

Maheen Quadri-Sheriff, MD, Kristin S. Hendrix, PhD and S. Maria E. Finnell, MD, Indiana University School of Medicine, Indianapolis, IN

45. DEVELOPMENT OF A TOOL FOR IDENTIFICATION AND CLASSIFICATION OF DECISIONS IN MEDICAL ENCOUNTERS (DEC)

Eirik H. Ofstad, MD¹, Jan C. Frich, MD, PhD², Edvin Schei, MD, PhD³, Arnstein Finset, Psy.D, PhD² and Pål Gulbrandsen, MD, PhD¹, (1)Akershus University Hospital, Lørenskog, Norway, (2)University of Oslo, Oslo, Norway, (3)University of Bergen, Bergen, Norway

46. RACIAL/ETHNIC VARIATION IN THE INVOLVEMENT OF PARTNERS IN BREAST CANCER TREATMENT DECISION MAKING (DEC)

Sarah T. Hawley, PhD, MPH¹, Nancy Janz, PhD², Ann Hamilton, PhD³, Kendra Schwartz, MD, MPH⁴ and Steven Katz, MD¹, (1)University of Michigan, Ann Arbor VA Health System, Ann Arbor, MI, (2)University of Michigan, School of Public Health, Ann Arbot, MI, (3)USC, Keck School of Medicine, Los Angeles, CA, (4)Wayne State University, Detroit, MI
47. USABILITY AND EFFICACY TESTING OF A SPANISH LANGUAGE COLORECTAL CANCER SCREENING DECISION AID IN LATINOS WITH LIMITED ENGLISH PROFICIENCY (DEC)

Daniel S. Reuland, MD, MPH, University of North Carolina, Chapel Hill, NC, Linda K. Ko, PhD, MPH, University of North Carolina - Chapel Hill, Chapel Hill, NC and Michael Pignone, MD, MPH, University of North Carolina at Chapel Hill, Chapel Hill, NC

48. DEVELOPMENT AND PRELIMINARY EVALUATION OF EMERGENCY MEDICAL ALLIANCE FOR TOTAL COORDINATION IN HEALTHCARE (E-MATCH) TO RESOLVE MISMATCH BETWEEN PATIENTS NEEDS AND AVAILABLE RESOURCES (DEC)

Michi Sakai, PhD¹, Sachiko Ohta, MD², Satoko Zenitani, MPH¹, Hidetada Fukushima, MD³, Fumio Takesue, MD⁴, Kazuo Okuchi, MD³, Akinobu Tachibana⁵, Eiji Higashi⁶ and Noriaki Aoki, MD⁷, (1)Center for Health Service, Outcomes Research and Development - Japan (CHORD-J), Tokyo, Japan, (2)Health Informatics and Management Professionals (HIMAP) General Association, Tokyo, Japan, (3)Nara Medical University, Nara, Japan, (4)Nara Prefecture Government, Nara, Japan, (5)Ikoma Fire Department, Nara, Japan, (6)Nara Fire Bureau, Nara, Japan, (7)University of Texas - Houston, Houston, TX

49. HOW COST-EFFECTIVENESS ACCEPTABILITY CURVES VARY WITH THE NUMBER OF TREATMENT STRATEGIES COMPARED AND WHY THIS COMPROMISES THEIR USEFULNESS (MET)

James O'Mahony, MA, Erasmus University Medical Center, 3000 CA Rotterdam, Netherlands and Joost van Rosmalen, PhD, Erasmus MC, University Medical Center, Rotterdam, Netherlands

50. EXPERT ELICITATION TO POPULATE EARLY HEALTH ECONOMIC MODELS OF MEDICAL DIAGNOSTIC DEVICES IN DEVELOPMENT (MET)

Wieke Haakma, BSc¹, Laura Bojke, PhD, MSc, BA², Lotte Steuten, PhD³ and Maarten J. IJzerman, PhD¹, (1)University of Twente, Enschede, Netherlands, (2)University of York, York, United Kingdom, (3)University of Twente, AE Enschede, Netherlands

51. THE VALUE OF MARKERS IN PREDICTION MODELS: NET BENEFIT AND TEST HARM RATHER THAN THE C-INDEX (MET)

Ben Van Calster, PhD, Katholieke Universiteit Leuven, Leuven, Belgium, Dirk
52. COMPARISON OF VARIABLE SELECTION METHODS FOR THE GENERATION OF PARSIMONIOUS PREDICTION MODELS FOR USE IN CLINICAL PRACTICE (MET)

Brian J. Wells, MD, MS¹, Changhong Yu, MS¹, Siran Koroukian, PhD² and Michael W. Kattan, PhD¹, (1)Cleveland Clinic, Cleveland, OH, (2)Case Western Reserve University, Cleveland, OH

53. IMPROVING THE EFFICIENCY OF THE ANALYTIC HIERARCHY PROCESS (MET)

Christine M. Duffy, MD, MPH, Brown University, Providence, RI, Rahul Banerjee, BS, Brown Medical School, Providence, RI and James G. Dolan, MD, University of Rochester, Rochester, NY

54. TRANSPLANT CENSORING AND THE NATURAL HISTORY OF MELD VIA EM ESTIMATION (MET)

Gordon B. Hazen, PhD, Northwestern University, Evanston, IL, Zhe Li, Northwestern Univ, Evanston, IL and Anton Skaro, M.D., Northwestern University, Feinberg School of Medicine, Chicago, IL

55. USE OF RICHARDSON’S EXTRAPOLATION TO REDUCE TIMING ERRORS IN MARKOV MODELS (MET)

Pelham M. Barton, PhD, University of Birmingham, Birmingham, United Kingdom

56. COMPARATIVE EFFECTIVENESS RESEARCH TO AID DECISION MAKING: RELATING CLINICAL OUTCOMES AND QUALITY ADJUSTED LIFE YEARS (MET)

Jonathan D. Campbell, PhD, University of Colorado School of Pharmacy, Aurora, CO, Louis P. Garrison, Ph.D, University of Washington, Seattle, WA, Judy Zerzan, MD, MPH, Colorado Department of Health Care Policy and Financing, Denver, CO and Anne Libby, PhD, University of Colorado, Aurora, CO
57. ENTROPY-BASED EXPECTED UNCERTAINTY REDUCTION TO GUIDE THE CLINICAL EXAM (MET)

Robert M. Hamm, PhD, University of Oklahoma Health Sciences Center, Oklahoma City, OK and William H. Beasley IV, PhD, Howard Live Oak, Inc., Norman, OK

SMDM POSTER SESSION 3

Grand Ballroom AB (Hyatt Regency Chicago)

Posters:

1. THE OPTIMAL TIME TO PREPARE A FISTULA FOR HEMODIALYSIS PATIENTS (MET)

Steven M. Shechter, PhD, Nadia Zalunardo, MD, SM, FRCP(C) and M. Reza Skandari, PhD Student, University of British Columbia, Vancouver, BC, Canada

2. IMPROVING PAIN ASSESSMENT IN CLINICAL PRACTICE (DEC)

Liana Fraenkel, MD, MPH, VA CT Healthcare System; Yale School of Medicine, New Haven, CT, Paul R. Falzer, PhD, VA CT Healthcare System, West Haven, CT, Terri Fried, MD, Yale School of Medicine, West Haven, CO, Minna Kohler, Yale University, New Haven, CT, Robert Kerns, PhD, VA CT Healthcare System; Yale University School of Medicine, West Haven, CT, Ellen Peters, Ph.D., Decision Research, Eugene, OR and Howard Leventhal, PhD, Rutgers University, New Brunswick, NJ

3. ATTITUDES TOWARDS EUTHANASIA INFLUENCES VALUES ELICITED WITH THE TTO METHOD (DEC)

Liv Ariane Augestad, MD1, Kim Rand-Hendriksen, Cand.Psychol1, Ivar Sønbø Kristiansen, MD, PhD, MPH2 and Knut Stavem, MD, MPH, PhD1, (1)Akershus University Hospital, Lørenskog, Norway, (2)University of Oslo, Oslo, Norway
4. A GUIDING FRAMEWORK FOR THE EVALUATION OF VALUES CLARIFICATION EXERCISES (DEC)

R. Trafford Crump, Ph.D., University of Calgary, Calgary, AB, Canada and William Wedley, Ph.D., Simon Fraser University, Burnaby, BC, Canada

5. PSYCHIATRIC PATIENTS' ATTITUDES TOWARDS SHARED DECISION MAKING (DEC)

Lilisbeth Perestelo Perez, PhD¹, Carlos De las Cuevas, PhD², Amado Rivero-Santana, PhD³, Jeanette Perez-Ramos, MPsyh³, Marién Gonzalez-Lorenzo, PhD³, Juan De la Fuente, PhD⁴ and Emilio Sanz, PhD⁵, (1)Canary Islands Health Service. Ciber de Epidemiología y Salud Pública (CIBERESP), Tenerife, Spain, (2)University of La Laguna, 38004, Spain, (3)Canary Islands Foundation for Health and Research (FUNCIS), Santa Cruz de Tenerife, Spain, (4)University Hospital Nuestra Señora de la Candelaria, Santa Cruz de Tenerife, Spain, (5)University of La Laguna, Santa Cruz de Tenerife, Spain

6. IS THERE LESS SHARED DECISION MAKING WHEN THE PROVIDER MAKES A RECOMMENDATION? (DEC)

Marissa Frongillo, B.A., Sandra Feibelmann, M.P.H. and Karen R. Sepucha, PhD, Massachusetts General Hospital, Boston, MA

7. INTEGRATING QUANTITATIVE PREFERENCE-RELATED EVIDENCE INTO HEALTH TECHNOLOGY ASSESSMENT: THE CASE OF VENTILATION FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE (DEC)

Ann-Sylvia Brooker, MSc, PhD, Steven M. Carcone, MSc and Murray D. Krahn, MD, MSc, Toronto Health Economics and Technology Assessment (THETA) Collaborative, Toronto, ON, Canada

8. MINORITY CANCER SURVIVORS' PERCEPTIONS AND EXPERIENCE WITH CANCER CLINICAL TRIALS PARTICIPATION (DEC)

Margaret M. Byrne, PhD¹, Jamie L. Studts, PhD², Susan Schmitz¹, Andrea Vinard¹, Martha Gonzalez¹, Heraldo D’Almeida¹, Colleen Bauza¹, N. Nicole Whitehead¹, Sue Stablefood³, Angela Fagerlin, PhD⁴ and Sarah T. Hawley, PhD, MPH⁵, (1)University of Miami, Miami, FL, (2)University of Kentucky College of Medicine, Lexington, KY, (3)University of New England, Portland, ME, (4)University of Michigan, Ann Arbor, MI, (5)University of Michigan, Ann Arbor VA Health System, Ann Arbor, MI
9. CAN HEALTH COACHING HELP PATIENTS WITH SPINAL STENOSIS MAKE AN INFORMED TREATMENT CHOICE? (DEC)

Susan Berg, MS, CGC\(^1\), Sherry Thornburg, MPH\(^2\), Jon Lurie, MD\(^1\), Stephen Kearing, MS\(^3\), Kate F. Clay, MA, BSN\(^1\), William Abdu, MD\(^1\), Sohail Mirza, MD\(^1\), Harold Sox, MD\(^4\), Kevin F. Spratt, PhD\(^1\), Martha Travis-Cook\(^1\) and Dale Collins Vidal, MD, MS\(^1\), (1)Dartmouth Hitchcock Medical Center, Lebanon, NH, (2)The Dartmouth Institute, Center for Informed Choice, Lebanon, NH, (3)Dartmouth Medical School, Lebanon, NH, (4)The Dartmouth Institute, Lebanon, NH

10. ATTITUDES TOWARD PRENATAL TESTING AND PREGNANCY TERMINATION AMONG A DIVERSE POPULATION OF PARENTS OF CHILDREN WITH INTELLECTUAL DISABILITIES (DEC)

Miriam Kuppermann, PhD, MPH\(^1\), Sanae Nakagawa, MA\(^1\), Shana Raquel Cohen, PhD\(^2\), Irenka Dominguez-Pareto, MA\(^2\), Brian L. Shaffer, MD\(^3\) and Susan D. Holloway, PhD\(^2\), (1)University of California, San Francisco, CA, (2)University of California, Berkeley, CA, (3)Oregon Health and Sciences University, Portland, OR

11. ASSESSING WOMEN’S SOURCES OF CHILDBIRTH INFORMATION: ARE THEY ADEQUATELY INFORMED ABOUT INDUCTION OF LABOR AND CESAREAN DELIVERY? (DEC)

Anjali Kaimal, MD, MAS\(^1\), Sanae Nakagawa, MA\(^2\), Aaron B. Caughey, MD, MPP, MPH, PhD\(^3\) and Miriam Kuppermann, PhD, MPH\(^2\), (1)Massachusetts General Hospital, Harvard Medical School, Boston, MA, (2)University of California, San Francisco, San Francisco, CA, (3)Oregon Health & Sciences University, Portland, OR

12. TRAINING HEALTH PROFESSIONALS IN SHARED DECISION MAKING: AN INTERNATIONAL ENVIRONMENTAL SCAN (DEC)

France Légaré, MD, PhD, CHUQ Research Center-Hospital St-François d'Assise, Knowledge Transfer and Health Technology Assessment, Quebec, QC, Canada, Mary Politi, PhD, Washington University School of Medicine, St. Louis, MO, Renée Drolet, PhD, Research Center of Centre Hospitalier Universitaire de Québec, Hopital St-François D'Assise, Québec, QC, Canada, Dawn Stacey, PhD, University of Ottawa, Ottawa, ON, Canada, Hilary L. Bekker, PhD, MSc, BSc, University of Leeds, Leeds, United Kingdom and CPD-SDM Group, Laval University, Québec, QC, Canada
13. COMPARISON OF PREFERENCE ASSESSMENT METHODS BASED ON PROSTATE CANCER PATIENT CHARACTERISTICS (DEC)

Melissa S. Yale, MS\(^1\), Gregory L. Green, MPH\(^2\), Laura P. Sands, PhD\(^1\), Eunjung Lim, PhD\(^1\), David M. Latini, PhD\(^3\), Mary-Margaret Chren, MD\(^2\) and Sara J. Knight, PhD\(^2\), (1)Purdue University, West Lafayette, IN, (2)San Francisco VA Medical Center, San Francisco, CA, (3)Baylor College of Medicine, Houston, TX

14. PILOT SURVEY OF PHYSICIAN PREFERENCES FOR TEST THRESHOLDS FOR PEDIATRIC NEUROIMAGING GUIDELINES (DEC)

Carrie Daymont, MD, MSCE, University of Manitoba, Winnipeg, MB, Canada and Michael Moffatt, MD, Winnipeg Regional Health Authority, Winnipeg, MB, Canada

15. COMPARING ANNOUNCED WITH UNANNOUNCED STANDARDIZED PATIENTS FOR ASSESSING DIAGNOSTIC ERROR (DEC)

Alan Schwartz, PhD\(^1\), Saul J. Weiner, MD\(^2\) and Amy Binns-Calvey\(^1\), (1)University of Illinois at Chicago, Chicago, IL, (2)University of Illinois at Chicago and Jesse Brown VA Medical Center, Chicago, IL

16. SURGICAL TREATMENT CONSULTATIONS WITH LUNG CANCER PATIENTS: A QUALITATIVE AND SURVEY-BASED PILOT STUDY (DEC)

Joshua Hemmerich, PhD\(^1\), Mark K. Ferguson, MD\(^1\), Arthur Elstein, PhD\(^2\), Rita Gorawara-Bhat, PhD\(^1\), Cynthia Warnes, RN, BSN\(^1\), Eva Melstrom, BA\(^1\) and William Dale, MD, PhD\(^3\), (1)The University of Chicago, Chicago, IL, (2)The University of Illinois at Chicago, Wilmette, IL, (3)University of Chicago, Chicago, IL

17. WHAT DEFINES QUALITY IN RISK COMMUNICATION? (DEC)

Jesper B. Nielsen, PhD, MSc, University of Southern Denmark,, DK-5000 Odense C, Denmark, Dorte Gyrd-Hansen, University of Southern Denmark, Odense, Denmark and Ivar Sønbø Kristiansen, MD, PhD, MPH, University of Oslo, Oslo, Norway

18. CAN A DECISION SUPPORT PROGRAM HELP A COHORT OF MS PATIENTS WITH DEPRESSION? IMPLEMENTATION OF A DECISION SUPPORT PROGRAM IN A MULTIPLE SCLEROSIS-PSYCHIATRIC CLINICAL MICROSYSTEM (DEC)

Brant J. Oliver, NP, MPH, MSN\(^1\), Susan Berg, MS, CGC\(^1\) and Stephen Kearing,
19. ASSESSING THE NEED FOR AND DEVELOPING A MENOPAUSAL SYMPTOM DECISION AID IN A WOMEN’S HEALTH SPECIALTY PRACTICE (DEC)

Priscilla M. Flynn, DrPH and Amy T. Wang, MD, Mayo Clinic, Rochester, MN

20. HEALTH LITERACY, GENETIC LITERACY, AND NUMERACY IN A DIVERSE POPULATION OF PREGNANT WOMEN: IMPLICATIONS FOR PRENATAL TESTING DECISION MAKING (DEC)

Anjali Kaimal, MD, MAS¹, Bogdana Kovshilovskaya², Sanae Nakagawa, MA², Mary E. Norton, MD³ and Miriam Kuppermann, PhD, MPH², (1)Massachusetts General Hospital, Harvard Medical School, Boston, MA, (2)University of California, San Francisco, San Francisco, CA, (3)Stanford University, Stanford, CA

21. QUALITATIVE ASSESSMENT OF INFORMATION-SEEKING BEHAVIOR AND LEARNING PREFERENCES AMONG POSTGRADUATE PHYSICIAN ASSISTANTS AND NURSE PRACTITIONERS (DEC)

Kenneth E. Korber, PA, University of Illinois Medical Center, Arlington Heights, IL

22. ENHANCED SELF-EFFICACY REGARDING SKIN CANCER TREATMENT: THE IMPORTANCE OF INDIVIDUAL DIFFERENCE FACTORS VERSUS EXPOSURE TO A PATIENT DECISION AID (DEC)

Dana L. Alden, PhD, University of Hawaii at Manoa, Honolulu, HI, Qimei Chen, PhD, University of Hawaii, Honolulu, HI and Jennifer Aaker, PhD, Standford University, Palo Alto, CA

23. DISCIPLINARY ACTIONS IN A NO-FAULT SYSTEM: ACTUAL RISK, RISK BIASES AND RISK PERCEPTION PREDICTORS? (DEC)

Geir Godager and Sverre Grepperud, University of Oslo, Oslo, Norway
24. BUDGET IMPACT OF RAPID HIV TESTING AND COUNSELING IN STD CLINICS IN THE UNITED STATES: A THRESHOLD ANALYSIS (ESP)

Ashley A. Eggman, MS¹, Jared A. Leff, MS¹, Paco C. Castellon, MPH², Laurel E. Hall, BS², Erin Antunez, MS³, Tim Matheson, PhD³, Louise F. Haynes, MSW⁴, Susan Tross, PhD⁵, Lauren Gooden, MPH², Daniel J. Feaster, PhD², Lisa R. Metsch, PhD², Grant N. Colfax, PhD³ and Bruce R. Schackman, PhD¹, (1)Weill Cornell Medical College, New York, NY, (2)Miller School of Medicine, Miami, FL, (3)San Francisco Department of Public Health, San Francisco, CA, (4)Medical University of South Carolina, Charleston, SC, (5)Columbia University, New York, NY

25. ARE INDICATORS OF QUALITY CARE FOR COMORBID CONDITIONS ASSOCIATED WITH COSTS OF CARE FOR PROSTATE, BREAST, AND COLORECTAL CANCER SURVIVORS AND MATCHED CONTROLS? (ESP)

Kevin D. Frick, PhD¹, Claire Snyder, PhD², Robert Herbert¹, Amanda Blackford, ScM², Bridget Neville, MPH³, Michael Carducci, MD², Antonio Wolff, MD² and Craig Earle, MD, MSc⁴, (1)Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, (2)Johns Hopkins School of Medicine, Baltimore, MD, (3)Dana-Farber Cancer Institute, Boston, MA, (4)Institute for Clinical Evaluative Sciences, Toronto, ON, Canada

26. WEALTH GRADIENT IN CESAREAN BIRTHS IN INDIA: IMPLICATIONS FOR PUBLIC HEALTH POLICY (ESP)

Aparajita Zutshi, PhD and Arkadipta Ghosh, PhD, Mathematica Policy Research, Princeton, NJ

27. DOES IT MAKE SENSE TO IDENTIFY GENETIC PREDISPOSITION IN PRIMARY PREVENTION OF COMMON ADULT DISEASE (ESP)

Jennie Kempster, M.S., University of California, San Diego, Health Services Research Center, La Jolla, CA and Ted Ganiats, MD, University of California San Diego, La Jolla, CA

28. ASSESSMENT OF INFLIXIMAB UTILIZATION PATTERNS ACROSS DIFFERENT SITES OF CARE FOR COMMERCIAL HEALTH PLANS (ESP)

Brad Schenkel, Julie Vanderpoel, Chureen T. Carter and Denise Zomorrodian, Centocor Ortho Biotech Services, LLC, Horsham, PA
29. REFERENCE PRICING: AN INNOVATIVE BENEFIT DESIGN FOR CONTROLLING MEDICAL EXPENDITURES (ESP)

Jennifer Schneider Chafen, M.D., M.S.¹, Anastasia Toles, M.D., MPH², Cathie Markow, MBA, RN², Maeve O’Meara² and Dena M. Bravata, MD, MS¹, (1)Stanford University, Stanford, CA, (2)Castlight Health, San Francisco, CA

30. MEASURING STATED PREFERENCES TO IDENTIFY ATTRIBUTE IMPORTANCE: IS IT A CASE OF 1 ATTRIBUTE WITH N LEVELS OR N ATTRIBUTES WITH ONLY 1 LEVEL (ESP)

John F.P. Bridges, PhD and Gisselle Gallego, PhD, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

31. COST-EFFECTIVENESS OF THE MOST COMMONLY USED NON-SURGICAL TREATMENTS FOR NECK PAIN (ESP)

Gabrielle van der Velde, DC, PhD¹, Cesar Hincapié, DC², Orit Schier, MSc³, Sheila Hogg-Johnson, PhD⁴, Pierre Coté, DC, PhD⁵, Mike Paulden, MA., MSc.¹ and Murray D. Krahn, MD, MSc¹, (1)Toronto Health Economics and Technology Assessment (THETA) Collaborative, Toronto, ON, Canada, (2)University of Toronto Dalla Lana School of Public Health, Toronto, ON, Canada, (3)Dalla Lana School of Public Health, Toronto, ON, Canada, (4)Institute for Work & Health, Toronto, ON, Canada, (5)Toronto Western Research Institute, Toronto, ON, Canada

32. EIGHT YEAR COSTS OF TREATMENT FOR BREAST CANCER IN NORWAY – BY TNM STAGE AND DETECTION SETTING (ESP)

Gudrun M. Waaler, M.Phil, Ivar Sønbø Kristiansen, MD, PhD, MPH, Eline Aas, Post, doc and Tron Anders Moger, Postdoc, University of Oslo, Oslo, Norway

33. ECONOMIC EVALUATION OF PRASUGREL COMPARED TO CLOPIDOGREL AFTER PERCUTANEOUS CORONARY INTERVENTION (ESP)

Torbjørn Wisløff, M.Sc., Tove Ringerike, Ph.D and Marianne Klemp, MD, PhD, Norwegian Knowledge Centre for the Health Services, Oslo, Norway

34. THE MOST APPROPRIATE METHODOLOGY FOR DEALING WITH MONOTONICITY IN THE CONTEXT OF SUMMARY DATA (ESP)

Matt Stevenson, PhD, The School of Health and Related Research, University of Sheffield., Sheffield, England and Nicholas Latimer, Msc, BSc, University of Sheffield,
35. TEST THRESHOLDS FOR OBTAINING PEDIATRIC NEUROIMAGING IN CLINICAL PRACTICE GUIDELINES (ESP)

Carrie Daymont, MD, MSCE, University of Manitoba, Winnipeg, MB, Canada and Michael Moffatt, MD, Winnipeg Regional Health Authority, Winnipeg, MB, Canada

36. MINIMAL MODELING APPROACHES TO VALUE OF INFORMATION ANALYSIS (ESP)

David Owen Meltzer, MD, PhD¹, Ties Hoomans, PhD¹, Jeanette W. Chung, PhD² and Anirban Basu, PhD³, (1)University of Chicago, Chicago, IL, (2)The University of Chicago, Chicago, IL, (3)University of Washington, Seattle, WA

37. SYSTEMATIC REVIEW OF THE ECONOMIC AND EPIDEMIOLOGICAL BURDEN OF BLEEDING-RELATED COMPLICATIONS IN AUSTRALIA (ESP)

Jonathan T. Tan, Ph.D¹, Lachlan B. Standfield¹ and Laurent Metz, MD, MBA, MS², (1)Health Technology Analysts Pty Ltd, Sydney, Australia, (2)Johnson & Johnson Medical, Singapore, Singapore

38. MODELLING PATIENTS’ PSYCHOLOGICAL CHARACTERISTICS, SELF-CARE BEHAVIOURS AND CLINICAL OUTCOMES TO INFORM A PATIENT-LEVEL SIMULATION MODEL OF DIABETES (ESP)

Jen Kruger, BSc¹, Alan Brennan, BSc, MSc., PhD¹, Praveen Thokala, PhD¹, Patrick Fitzgerald, PhD¹, Rod Bond, BSc, DPhil², Debbie Cooke, PhD³ and Marie Clark, PhD¹, (1)University of Sheffield, Sheffield, United Kingdom, (2)University of Sussex, Brighton, United Kingdom, (3)University College London, London, United Kingdom

39. CHARACTERIZING THE UTILIZATION OF MAGNETOENCEPHALOGRAPHY IN THE DETERMINATION OF SURGICAL CANDIDACY IN CHILDREN AND ADOLESCENTS WITH MEDICALLY REFRACTORY EPILEPSY – A FIELD EVALUATION TO INFORM HEALTH POLICY (ESP)

James M. Bowen, BScPhm, MSc¹, O. Carter Sneed III, MD, FRCPC², Robert Hopkins, MA³, Irene Elliott, MHSc, NP, Peds, RN, (EC)⁴, Natasha Burke, BSc³, Jacqui Atkin⁴, Mara Hebbard, RN⁴, Laurel Brown, MHSc⁴, Feng Xie, PhD³, Jean-Eric Tarride, PhD, MA³, Daria J. O'Reilly, PhD, MSc³ and Ron Goeree, MA³, (1)St.
40. INFLUENCE OF FINANCING AND PAYMENT MECHANISMS ON MEDICAL DECISION MAKING: NORMAL DELIVERY VS. CESAREAN SECTION (ESP)

Varduhi Petrosyan, MS, PhD, Meri Tadevosyan, MPH(c) and Arusyak Harutyunyan, MD, MPH, American University of Armenia, Yerevan, Armenia

41. HYPERTENSION ASSOCIATED MEDICATION EXPENDITURE AMONG ADULTS IN THE UNITED STATES (ESP)

Lili Yan, PhD, Carma Ayala, PhD, Mary George, MD and Guijing Wang, PhD, Centers for Disease Control and Prevention, Atlanta, GA

42. COST-EFFECTIVENESS OF A HYPERTENSION CONTROL INTERVENTION IN THREE CHINESE COMMUNITY HEALTH CENTERS (ESP)

Yamin Bai, M.S.¹, Yanfang Zhao, M.S.², Huicheng Wang, M.S.¹, Kejun Liu, M.S.³, Zhong Dong, M.S.², Xinwei Zhang, M.S.⁴, Ying Deng, M.S.⁵, Guijing Wang, PhD⁶ and Wenhua Zhao, M.S.¹, (1)China CDC, Beijing, China, (2)Beijing CDC, Beijing, China, (3)China Ministry of Health, Beijing, China, (4)Zhejiang CDC, Zhejiang, China, (5)Sichuan CDC, Sichuan, China, (6)U.S. CDC, Atlanta, GA

43. TRANSLATION OF COMPARATIVE EFFECTIVENESS RESEARCH – A CONCEPTUAL FRAMEWORK TO GUIDE POLICY-MAKERS (ESP)

Tania P. Lourenco, MSc, PhD and William F. Lawrence, Agency for Healthcare Research and Quality, Rockville, MD

44. COST-EFFECTIVENESS OF PULMONARY VEIN ABLATION FOR ATRIAL FIBRILLATION IN CANADA (ESP)

Gordon Blackhouse, MSc.¹, Nazila Assasi, MD, PhD², Feng Xie, PhD¹, Diana Robertson¹, Kathryn Gaebel³, Jeff S. Healey¹, Daria O’Rielly⁴, J. Tarride¹ and Ron Goeree¹, (1)McMaster University, Hamilton, ON, Canada, (2)St. Joseph’s Healthcare/McMaster University, Hamilton, ON, Canada, (3)St Josephs Healthcare, Hamilton, ON, Canada, (4)McmAster University, Hamilton, ON, Canada
45. HOSPITAL-NURSING HOME PATIENT FLOWS DURING HURRICANE KATRINA (ESP)

David H. Howard, PhD¹, Kun Zhang, MA¹ and E. Parker Lee, MPH², (1)Emory University, Atlanta, GA, (2)Emory University, Atlanta, GA

46. ASSOCIATION BETWEEN THE AVAILABILITY OF MEDICAL ONCOLOGISTS AND RECEIPT OF CHEMOTHERAPY (ESP)

Chun Chieh Lin, PhD, MBA and Katherine S. Virgo, PhD, MBA, American Cancer Society, Atlanta, GA

47. ONLINE RESOURCES FOR CANCER CARE: A QUALITY ASSESSMENT OF EVIDENCE-BASED GUIDELINES AND PROTOCOLS (ESP)

Julia M. Langton, MPsych, PhD and Sallie-Anne Pearson, PhD, University of New South Wales, Sydney, Australia

48. LANDSCAPE OF BIOLOGIC FORMULARY MANAGEMENT AND PATIENT ACCESS IN PSORIASIS (ESP)

Chureen T. Carter¹, Ahmad Naim¹, Silas Martin¹, Kathy Annunziata² and Deborah Freedman², (1)Centocor Ortho Biotech Services, LLC, Horsham, PA, (2)Kantar Health, New York, NY

49. CONSEQUENCES OF WITHDRAWING THE SECOND TUMOUR NECROSIS FACTOR &ALPHA; ANTAGONIST IN SEQUENTIAL TREATMENTS OF ACTIVE ANKYLOSING SPONDYLITIS: A HEALTH-ECONOMICAL PERSPECTIVE USING A POPULATION DYNAMICS SIMULATION MODEL (ESP)

An Tran-Duy, PhD, Maastricht University, Maastricht, Netherlands, Annelies Boonen, PhD, Maastricht University Medical Center, Maastricht, Netherlands and Johan L. Severens, PhD, Erasmus University Rotterdam, Rotterdam, Netherlands

50. LONGITUDINAL ANALYSIS OF GOLIMUMAB UTILIZATION: EVIDENCE FROM THE WOLTERS KLUWER SOURCE®LX NATIONAL HEALTH CLAIMS DATABASE (ESP)

Susan C. Bolge¹, Lorie Ellis¹, Amy Ryan², Sara Haas², Candace Gunnarsson² and Neeta Tandon¹, (1)Centocor Ortho Biotech Services, LLC, Horsham, PA, (2)S2 Statistical Solutions, Inc., Cincinnati, OH
51. DOES PQRI MAKE A DIFFERENCE? (ESP)

Gay Canaris, MD, MSPH, Amy S. Neumeister, MD, Liyan Xu, MD, MS, Jane M. Carrothers, BS, MBA, Audrey Paulman, MD, MMM and Thomas G. Tape, M.D., University of Nebraska Medical Center, Omaha, NE

52. WITHDRAWN - AN ASSESSMENT OF THE MODIFIED RANKIN SCALE AS A STROKE OUTCOME MEASURE IN ECONOMIC ANALYSES OF ACUTE ISCHEMIC STROKE OUTCOMES (ESP)

Kirsteen R. Burton, MBA, MSc, MD, University of Toronto, Toronto, ON, Canada and Dorcas E. Beaton, PhD, St. Michael's Hospital, Toronto, ON, Canada

53. DATA ANALYSIS WITH LARGE NUMBERS OF MISSING BODY MASS INDEX VALUES (ESP)

Paul Kolm, PhD, Claudine Jurkowitz, MD, MPH, Zugui Zhang, PhD and James Bowen, Christiana Care Health System, Newark, DE

54. STEPS TO UTILIZATION OF NEW METHODOLOGICAL INSIGHTS IN POLICY DECISIONS (ESP)

Elisabeth L. Terhell, PhD, Netherlands Organization for Health Research and Development, Den Haag, Netherlands and Wim G. Goettsch, PhD, ir, Netherlands Healthcare Insurance Board, Diemen, Netherlands

55. DEVELOPING AN INTEGRATED RESEARCH PROGRAMME TO EXPLORE PATIENT BEHAVIOUR, CLINICAL OUTCOMES AND HEALTH ECONOMICS IN TYPE 1 DIABETES (ESP)

Alan Brennan, BSc, MSc, PhD, Jen Kruger, BSc, Simon Heller, BA, MB, BChir, DM, FRCP and Praveen Thokala, PhD, University of Sheffield, Sheffield, United Kingdom

56. PSORIASIS AND PSORIATIC ARTHRITIS PATIENT PRODUCTIVITY BURDEN IN THE UNITED STATES (ESP)

Chureen T. Carter¹, Ahmad Naim¹, Silas Martin¹, Amir Goren², Kathy Annunziata² and Deborah Freedman², (1)Centocor Ortho Biotech Services, LLC, Horsham, PA, (2)Kantar Health, New York, NY
57. GOLIMUMAB BUDGET IMPACT MODEL (ESP)

Susan C. Bolge¹, Stephen L. Slabaugh¹, Andrea Szkurhan², Jayson Quach² and Neeta Tandon¹, (1)Centocor Ortho Biotech Services, LLC, Horsham, PA, (2)Dymaxium, Ltd., Toronto, ON, Canada

58. CULTURAL VARIABILITY AMONG HISPANICS ON KNOWLEDGE OF THE HUMAN PAPILLOMAVIRUS (ESP)

Julie Kornfeld, PhD¹, Margaret M. Byrne, PhD¹, Robin Vanderpool, DrPH², Ian J. Bishop, BA¹ and Erin Kobetz, PhD¹, (1)University of Miami, Miami, FL, (2)University of Kentucky College of Public Health, Lexington, KY

59. OB-GYNS' KNOWLEDGE AND OPINIONS ABOUT THE USPSTF 2009 BREAST CANCER SCREENING GUIDELINES AND NUMBER NEEDED TO TREAT FOR MAMMOGRAPHY SCREENING (ESP)

Britta L. Anderson, PhD and Jay Schulkin, PhD, American College of Obstetricians and Gynecologists, WAshington, DC

60. OVERVIEW AND EVALUATION OF DECISION-ANALYTIC MODELS FOR THE TREATMENT OF CHRONIC MYELOID LEUKEMIA (ESP)

Ursula Rochau, MD¹, Ruth Schwarzer, MA, MPH, ScD¹, Gaby Sroczynski, MPH, Dr.PH¹, Beate Jahn, PhD¹, Dominik Wolf, MD, PD², Guenther Gastl, MD, Univ.-Prof.² and Uwe Siebert, MD, MPH, MSc, ScD³, (1)UMIT - University for Health Sciences, Medical Informatics and Technology, ONCOTYROL - Center for Personalized Cancer Medicine, Hall i.T., Austria, (2)Medical University Innsbruck, Austria, Innsbruck, Austria, (3)UMIT-Univ. f Health Sciences;ONCOTYROL-Center f Personal. Cancer Med;Harvard School of Public Health;Harvard Med. School, Boston, Hall i.T., Austria
1. VIRTUAL EXPERIENCE AS A PROXY FOR NUMERACY IN PROBABILITY COMMUNICATION (DEC)

**Mark D. Horowitz, MS**¹, Robert B. Allen, Ph.D.² and Prudence W. Dalrymple, Ph.D.², (1)Drexel University, Ambler, PA, (2)Drexel University, Philadelphia, PA

2. AN IN-DEPTH REVIEW OF THE HISTORY AND USE OF THE CONTROL PREFERENCE SCALE (DEC)

**Suzanne K. Linder, Ph.D.**, André W. Hite Jr., B.S., M.P.H., Zubin N. Segal, M.P.H. and Robert J. Volk, PhD, The University of Texas MD Anderson Cancer Center, Houston, TX

3. VALUES AND PREFERENCES IMPORTANT IN CONTRACEPTIVE DECISION MAKING: A QUALITATIVE STUDY (DEC)

**Tessa Madden, MD, MPH**¹, Gina Secura, PhD, MPH², Ragini Maddipati, MSW² and Jeffrey Peipert, MD, PhD², (1)Washington University School of Medicine, Saint Louis, MO, (2)Washington University in Saint Louis, Saint Louis, MO

4. WHAT DO HEALTH CARE PROVIDERS THINK ABOUT SHARED DECISION MAKING? (DEC)

Karen R. Sepucha, PhD and **Sandra Feibelmann, M.P.H.**, Massachusetts General Hospital, Boston, MA
5. USAGE AND CHARACTERISTICS OF PATIENT SATISFACTION WEBSITES (DEC)

Jennifer Schneider Chafen, M.D., M.S.¹, Jason Mann, M.D., Ph.D.², Cathie Markow, MBA, RN², Anastasia Toles, M.D., MPH² and Dena M. Bravata, MD, MS¹, (1)Stanford University, Stanford, CA, (2)Castlight Health, San Francisco, CA

6. AWARENESS OF DYING; IT NEEDS WORDS (DEC)

M.E. Lokker, RN, MSc¹, L. van Zuylen, MD, PhD¹, L. Veerbeek, PhD², C.C.D. van der Rijt, MD, PhD, Prof³ and A. van der Heide, MD, PhD³, (1)Erasmus Medical Centre, Rotterdam, Netherlands, (2)Comprehensive Cancer Centre, Leiden, Netherlands, (3)Erasmus MC University Medical Centre, Rotterdam, Netherlands

7. DISCRETE CHOICE VERSUS CONSTANT SUM PAIRED COMPARISONS FOR ELICITING SOCIETAL PREFERENCES FOR HEALTHCARE RESOURCE ALLOCATION (DEC)

Chris Skedgel, Allan Wailoo and Ron Akehurst, The University of Sheffield, Sheffield, United Kingdom

8. ASSESSMENT OF PARENTAL HEALTH STATE PREFERENCES FOR DIAGNOSTIC EVALUATION AND CLINICAL OUTCOMES IN URINARY TRACT INFECTION IN YOUNG CHILDREN (DEC)

Galina Lipton, MD¹, Eve Wittenberg, PhD, MPP², Jamie Nichols³, Mariah Rich, BS⁴ and Marvin Harper, MD¹, (1)Childrens Hospital Boston, Harvard Medical School, Boston, MA, (2)Heller School for Social Policy and Mgmt., Waltham, MA, (3)Northeastern University, Boston, MA, (4)Harvard School of Public Health, Boston, MA

9. NAMING THE DOWNSIDES OF SURGERY: RACIAL AND GENDER VARIATIONS IN PERCEIVED HAZARDS OF SURGICAL CARE (DEC)

Mark D. Neuman, M.D., M.Sc., Jason H. Karlawish, M.D., Chidimma Osigwe, BA, Said Ibrahim, M.D., M.P.H. and Fran A. Barg, Ph.D., University of Pennsylvania, Philadelphia, PA

10. “THE HARDEST DECISION I EVER HAD”: PARENT DECISION MAKING ABOUT TNF-ALPHA; INHIBITOR TREATMENT (DEC)

Ellen A. Lipstein, MD, MPH, Daniel J. Lovell, MD, MPH, Lee A. Denson, MD, David
11. EXACKTE2: EXPLORING DYADIC RELATIONSHIPS WITHIN PATIENT-PHYSICIAN CONSULTATIONS USING THE ACTOR-PARTNER INTERDEPENDENCE MODEL (DEC)

France Légaré, MD, PhD¹, Stéphane Turcotte, MSc², Hubert Robitaille, PhD³, Moira Stewart, MD, PhD⁴, Dominick Frosch, PhD⁵, Jeremy Grimshaw, MBChB, PhD, FRCGP⁶, Michel Labrecque, MD, PhD⁷, Mathieu Ouimet, Ph.D⁸, Michel Rousseau, Ph.D⁹, Dawn Stacey, Ph.D⁹, Trudy van der Weijden¹⁰ and Glyn Elwyn, MD, PhD¹¹, (1)CHUQ Research Center-Hospital St-François d’Assise, Knowledge Transfer and Health Technology Assessment, Quebec, QC, Canada, (2)CHUQ Research Center-Hospital St-François d’Assise, Knowledge Transfer and Health Technology Assessment, Québec, QC, Canada, (3)Research center of Centre hospitalier universitaire de Québec, Québec, QC, Canada, (4)University of Western Ontario, London, ON, Canada, (5)Palo Alto Medical Foundation Research Institute, Palo Alto, CA, (6)Ottawa Health Research Institute, Ottawa, ON, Canada, (7)Université Laval, Quebec, QC, Canada, (8)Université Laval, Québec, QC, Canada, (9)University of Ottawa, Ottawa, ON, Canada, (10)Maastricht University, Maastricht, Netherlands, (11)Cardiff University, Cardiff, United Kingdom

12. HEALTH CARE MANAGERS’ PERSPECTIVE ON SHARED DECISION MAKING IN SPAIN (DEC)

Lilisbeth Perestelo Perez, PhD¹, Jeanette Perez-Ramos, MPsyCh², Amado Rivero-Santana, PhD², Marién Gonzalez-Lorenzo, PhD², Roberto Martin-Fernandez² and Pedro Serrano-Aguilar, PhD³, (1)Canary Islands Health Service. Ciber de Epidemiología y Salud Pública (CIBERESP), Tenerife, Spain, (2)Canary Islands Foundation for Health and Research (FUNCIS), Santa Cruz de Tenerife, Spain, (3)Canary Islands Health Service. Ciber de Epidemiología y Salud Pública (CIBERESP), Santa Cruz de Tenerife, Spain

13. DONATING YOUR BLOOD? ON THE ROLE OF ASSOCIATIONS, BELIEFS AND MOOD STATES IN DONOR DECISIONS (DEC)

Marieke De Vries, PhD¹, Rob W. Holland, PhD², Berlinda Hermsen, PhD³ and Ad Van Knippenberg, PhD³, (1)Leiden University Medical Center, Leiden, Netherlands, (2)Radboud University Nijmegen, Nijmegen, Netherlands, (3)Behavioural Science Institute, Nijmegen, Netherlands
14. ASSESSING THE ONLINE INFORMATION SEEKING PATTERNS OF PHYSICIANS (DEC)

H. Nevins, MSPH and M. Abdolrasulnia, PhD, CE Outcomes, LLC., Birmingham, AL

15. DOES IMPROVED NUMERACY MAKE THE GLASS HALF FULL? CANCER PATIENTS' OPTIMISM, NUMERACY, AND PERCEPTIONS OF THE COSTS OF TREATMENT (DEC)

Yu-Ning Wong, MD, MSCE¹, Kush Sachdeva, MD², Olivia Hamilton³, Naa Eghan¹, Brian Egleston¹, Tammy Stump¹, Melanie Pirollo², J. Robert Beck, MD¹ and Neal J. Meropol, MD⁴, (1)Fox Chase Cancer Center, Philadelphia, PA, (2)South Jersey Hospital, Vineland, NJ, (3)University of Pennsylvania, Philadelphia, PA, (4)University Hospitals Seidman Cancer Center, Case Comprehensive Cancer Center, Case Western Reserve University., Cleveland, OH

16. SENSITIVITY OF THE EQ-5D FOR MEASURING MENTAL HEALTH IN AFRICAN-AMERICAN TEENAGERS (DEC)

Justin B. Ingels, MS, MPH, University of Georgia, Athens, GA and Phaedra Corso, PhD, College of Public Health, Athens, GA

17. THE INFLUENCE OF POPULAR MEDIA ON PERCEPTIONS OF PERSONAL AND POPULATION RISK IN POSSIBLE DISEASE OUTBREAKS (DEC)

Meredith E. Young, PhD¹, Nicholas King, PhD¹, Sam Harper, PhD¹ and Karin Humphreys, PhD², (1)McGill University, Montreal, QC, Canada, (2)McMaster University, Hamilton, ON, Canada

18. EVALUATION OF A DECISION AID FOR ANTIPSYCHOTIC MEDICATION (DEC)

Lisa A. Mistler, MD, MS, University of Massachusetts, Grafton, MA, Laurie A. Curtis, Advocates for Human Potential Inc., Middlesex, VT and Irma H. Mahone, University of Virginia, Charlottesville, VA

19. REVISITING THE ONTOLOGY OF SHARED DECISION-MAKING IN PALLIATIVE CARE USING CRITICAL DISCURSIVE PSYCHOLOGY (DEC)

Emmanuelle Belanger, MSc¹, Charo Rodriguez, MD, PhD¹, Danielle Groleau, PhD¹, Mary Ellen Macdonald, PhD¹, France Légaré, MD, PhD² and Robert
20. SHARED DECISION MAKING IN THE CARE OF PATIENTS WITH CHRONIC VISION IMPAIRMENT (DEC)

Lori L. Grover, OD, Johns Hopkins University School of Medicine, Baltimore, MD, Kendall L. Krug, OD, Krug Optometry, Hays, KS and Kevin D. Frick, PhD, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

21. HOW DO BREAST IMAGING CENTERS COMMUNICATE RESULTS TO PATIENTS? RESULTS OF A NATIONAL SURVEY (DEC)

Erin N. Marcus, M.D., M.P.H., Tulay Koru-Sengul, MHS, PhD, Feng Miao, M.S. and Lee Sanders, M.D., M.P.H., University of Miami Miller School of Medicine, Miami, FL

22. DECIDEO : INFORMED DECISION AND PARTICIPATION OF WOMEN TO THE NATIONAL SCREENING FOR BREAST CANCER : A QUALITATIVE OVERVIEW (DEC)

Aurélie Bourmaud, MD¹, Mathieu Oriol, MD², Véronique Regnier, PhD¹, Nora Moumjid, PhD³, Patricia Soler, MD⁴ and Franck Chauvin, MD, PhD¹, (1)Cancerology Institute of Loire and Jean Monnet University, Saint Etienne, France, (2)Institut de Cancérologie de la Loire, Saint Priest en Jarey, France, (3)Gresac - Umr 5823 Cnrs, Lyon, France, (4)ADEMAS 69, Lyon, France

23. PREDICTION MODEL FOR CAESAREAN SECTION RISK IN WOMEN WITH GESTATIONAL HYPERTENSION OR PREECLAMPSIA AT TERM (ESP)

Karin van der Tuuk, M.D.¹, Mariëlle van Pampus, M.D., Ph.D.¹, Corine Koopmans, M.D., Ph.D.¹, Jan Aarnoudse, M.D., Ph.D.¹, Paul van den Berg, M.D., Ph.D.¹, Ben W.J. Mol, PhD, MD² and Henk Groen, M.D., Ph.D.¹, (1)University of Groningen, Groningen, Netherlands, (2)Academic Medical Centre, Amsterdam, Netherlands

24. ARE INDIVIDUALS SENSITIVE TO HEALTH INEQUALITIES? THE IMPACT OF FRAMING ON JUDGMENTS ABOUT HEALTH INEQUALITIES (ESP)

Meredith E. Young, PhD, Nicholas King, PhD and Sam Harper, PhD, McGill University, Montreal, QC, Canada
25. DISEASE BURDEN OF CHRONIC HEPATITIS B AMONG IMMIGRANTS IN CANADA (ESP)

William W. L. Wong, Ph.D.¹, Gloria Woo, PhD², Jenny Heathcote, MD¹ and Murray D. Krahn, MD, MSc¹, (1)University of Toronto, Toronto, ON, Canada, (2)Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada

26. CANTRANCE: FROM CANCER COMPARATIVE EFFECTIVENESS STUDIES TO DISEASE-SPECIFIC MORTALITY (ESP)

Jeanette K. Birnbaum, MPH, University of Washington, Seattle, WA, Jeffrey Katcher, Fred Hutchinson Cancer Research Institute, Seattle, WA and Ruth Etzioni, PhD, Fred Hutchinson Cancer Research Center/ University of Washington, Seattle, WA

27. DOSE-RESPONSE RELATIONSHIP BETWEEN HOSPITAL SURGICAL VOLUME AND PATIENT SAFETY (ESP)

Tina Hernandez-Boussard, PhD, MPH¹, Kathryn M. McDonald, MM² and John M. Morton, MD, MPH², (1)Stanford University, Palo Alto, CA, (2)Stanford University, Stanford, CA

28. DEVELOPMENT OF A COMPUTER-ADAPTIVE INSTRUMENT TO MEASURE DISABILITY IN OLDER ADULTS (ESP)

Christine M. McDonough, PhD, PT¹, Ilona Kopits, MD, MPH², Peng Sheng Ni, M.D., M.P.H.¹, Tian Feng, MS¹ and Alan M. Jette, Ph.D., P.T.¹, (1)Boston University School of Public Health, Boston, MA, (2)Boston University Medical Center, Boston, MA

29. OBESITY AND MORTALITY IN PERSONS WITH AND WITHOUT OBESITY-RELATED DISEASES: USING DATA FROM NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY III (ESP)

Su-Hsin Chang, PhD¹, Lisa M. Pollack, MPT, MA² and Graham A. Colditz, MD, DrPH¹, (1)Division of Public Health Sciences, Washington University School of Medicine, St. Louis, MO, (2)Washington University in St. Louis, St. Louis, MO
30. MATERNAL PREFERENCES FOR CESAREAN: DO WOMEN GET WHAT THEY WANT? (ESP)

Ivar Sønbø Kristiansen, MD, PhD, MPH and Dorthe Fuglenes, MD, University of Oslo, Oslo, Norway

31. FACTORS ASSOCIATED WITH THE CHOICE OF BIOLOGIC DISEASE MODIFYING ANTI-RHEUMATIC DRUGS AMONG RHEUMATOID ARTHRITIS PATIENTS IN CALIFORNIA MEDICAID (ESP)

Li-Hao Chu, MPH¹, Aniket A. Kawatkar, PhD, MS¹ and Michael B. Nichol, PhD², (1)Kaiser Permanente Southern California, Pasadena, CA, (2)University of Southern California, Los Angeles, CA

32. A DECISION SUPPORT TOOL FOR CATEGORIZING PATIENT ACUITY AT EMERGENCY DEPARTMENT (ESP)

Yan Sun, PhD¹, Bee Hoon Heng, MBBS, MSc(Public, Health)², Swee Eng Choo, BSc, (Nursing)³, Che Kheng Ooi, MBBS, MSc(HSR)³ and Seow Yian Tay, MBBS, MSc(Medical, Informatics)³, (1)National Healthcare Group, Singapore, Singapore, (2)National Healthcare group, Singapore, Singapore, (3)Tan Tock Seng Hospital, Singapore, Singapore

33. EVALUATING A PROPOSED SWOG TRIAL OF BREAST CANCER TUMOR MARKERS: A VALUE OF RESEARCH AND BIOBANK ANALYSIS (ESP)

Rahber Thariani, PhD¹, Josh J. Carlson, PhD¹, Lotte Steuten, PhD², Lynn Henry, MD, PhD³, Julie Gralow, MD¹, Scott Ramsey, MD, PhD⁴, Anirban Basu, PhD¹ and David L. Veenstra, PharmD, PhD¹, (1)University of Washington, Seattle, WA, (2)University of Twente, AE Enschede, Netherlands, (3)University of Michigan, Ann Arbor, MI, (4)Fred Hutchinson Cancer Research Center/ University of Washington, Seattle, WA

34. SYSTEMS APPROACH TO DISEASE MODELING (ESP)

Tuan Dinh, PhD and Peter Alperin, MD, Archimedes Inc., San Francisco, CA
35. BUDGETARY IMPACT OF ADDING ROFLUMILAST TO MANAGED CARE FORMULARY IN THE TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (ESP)

Shawn X. Sun, PhD\(^1\), Vladimir Zah, PhD(c)\(^2\) and Steven I. Blum, MBA\(^1\), (1)Forest Research Institute, Jersey City, NJ, (2)ZRx Outcomes Research Inc, Toronto, ON, Canada

36. FROM POLICY TO PRACTICE: PRIMARY CARE PHYSICIAN PERSPECTIVES ON VALUE AND ITS INFLUENCE ON MAKING CLINICAL DECISIONS (ESP)

Diane Gray, MA, MBBS, MSc, Weil Cornell Medical College, New York, NY

37. ROBUSTNESS OF COST-EFFECTIVENESS ESTIMATES FOR CINACALCET IN SECONDARY HYPERPARATHYROIDISM BASED ON THE ADVANCE TRIAL (ESP)

Rob Boer, PhD\(^1\), Anjana Lalla, MS\(^1\) and Vasily Belozeroff, PhD, MSc\(^2\), (1)Cerner LifeSciences, Beverly Hills, CA, (2)Amgen, Inc., Thousand Oaks, CA

38. USING DATA FROM SYSTEMATIC REVIEWS OR MULTIPLE SOURCES IN DECISION ANALYSES IMPACTS CONCLUSIONS (ESP)

Rahul Mhaskar, PhD\(^1\), Helen Georgiev, MPH\(^2\), Hesborn Wao, PhD\(^2\), Ambuj Kumar, MD, MPH\(^3\) and Benjamin Djulbegovic, MD, PhD\(^4\), (1)University of South Florida, Tampa, FL, (2)University of South Florida, Tampa, FL, (3)Center for Evidence Based Medicine, University of South Florida, Tampa, FL, (4)University of South Florida & H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL

39. ASSESSING THE BROADER BENEFITS OF VACCINATION TO INFORM NATIONAL PRIORITY SETTING (ESP)

Mark Jit, PhD\(^1\), Rohan Deogaonkar, BSc\(^2\), Inge van der Putten, BSc\(^3\), Silvia Evers, PhD\(^3\) and Raymond Hutubessy, PhD\(^4\), (1)Health Protection Agency, London, United Kingdom, (2)University of Birmingham, Birmingham, United Kingdom, (3)Maastricht University, Maastricht, Netherlands, (4)World Health Organization, Geneva, Switzerland

40. SYSTEMATIC REVIEW OF THE ECONOMIC AND EPIDEMIOLOGICAL BURDEN OF BLEEDING-RELATED COMPLICATIONS IN INDIA (ESP)

Jonathan T. Tan, Ph.D\(^1\), Lachlan B. Standfield\(^1\), Jayashree Mapari\(^2\) and Laurent
41. PRICE TRANSPARENCY: AN INNOVATIVE MEANS OF CONTROLLING MEDICAL EXPENDITURES? (ESP)

Jennifer Schneider Chafen, M.D., M.S.¹, Anastasia Toles, M.D., MPH², Cathie Markow, MBA, RN², Maeve O’Meara² and Dena M. Bravata, MD, MS¹, (1)Stanford University, Stanford, CA, (2)Castlight Health, San Francisco, CA

42. COST-EFFECTIVENESS OF MEDICARE PART D PLANS IN SCHIZOPHRENIA (ESP)

Kenneth J. Smith, MD, MS, Seo Hyon Baik, PhD, Charles F. Reynolds, MD, Bruce L. Rollman, MD, MPH, Lei Zhou, MS and Yuting Zhang, PhD, University of Pittsburgh, Pittsburgh, PA

43. ADOPTION DECISIONS FOR NEW RADIOTHERAPY TECHNOLOGY FOR BREAST CANCER (ESP)

Heather Taffet Gold, PhD¹, Kimberly Pitrelli, MA¹, Mary Katherine Hayes, MD² and Madhuvanti Murphy, DrPH², (1)New York University School of Medicine, New York, NY, (2)Weill Cornell Medical College, New York, NY

44. OUTPATIENT TREATMENT OF PANIC DISORDER SIGNIFICANTLY IMPROVES ABSENTEEISM AND PRESENTEEISM AT WORK (ESP)

JongMin Woo, Inje University Seoul Paik Hospital, Seoul, South Korea

45. PATIENT-REPORTED PSORIASIS DISEASE FLARING AND IMPACT OF FLARE FREQUENCY ON HUMANISTIC OUTCOMES (ESP)

Chureen T. Carter¹, Silas Martin¹, Marco DiBonaventura², Kathy Annunziata² and Deborah Freedman², (1)Centocor Ortho Biotech Services, LLC, Horsham, PA, (2)Kantar Health, New York, NY

46. COST OF THERAPIES TO INDUCE REMISSION IN PATIENTS WITH WEGENER’S GRANULOMATOSIS (ESP)

Awa Ndir, MPH¹, Christian Pagnoux, MD, MPH², Alfred Mahr, MD, PhD³, Loïc

Metz, MD, MBA, MS³, (1)Health Technology Analysts Pty Ltd, Sydney, Australia, (2)Johnson & Johnson, Pune, India, (3)Johnson & Johnson, Singapore, Singapore
47. TRENDS IN THE USE OF INDIRECT COMPARISONS AND NETWORK META-ANALYSIS – EXPERIENCE FROM DRUG SUBMISSIONS FOR REIMBURSEMENT IN CANADA (ESP)

Chris G. Cameron, BSc, EngDip, MSc, Canadian Agency for Drugs and Technologies in Health, Ottawa, ON, Canada and Karen M. Lee, MA, Canadian Agency for Drugs and Technologies in Health (CADTH), Ottawa, ON, Canada

48. EVALUATION OF CANCER INCIDENCE IN AUSTRIA AND TREATMENT PATHWAY IDENTIFICATION IN INTRAMURAL AND EXTRAMURAL HEALTH CARE BASED ON LONGITUDINAL ACCOUNTING DATA (ESP)

Günther Zauner¹, Patrick Einzinger², Niki Popper¹, Gottfried Endel³ and Felix Breitenecker², (1)Dwh Simulation Services, Vienna, Austria, (2)Vienna University of Technology, Vienna, Austria, (3)Main Association of Austrian Social Security Institutions, Vienna, Austria

49. IMPACT OF NONCOMPLIANCE WITH DIABETES CARE GUIDELINES ON EMERGENCY ROOM VISITS AND HOSPITALIZATIONS IN A CALIFORNIA MEDICAID TYPE 2 DIABETES MELLITUS POPULATION (ESP)

Michael B. Nichol, PhD¹, Joanne Wu, MD, MS¹, Julie L. Priest, MSPH² and C. Ron Cantrell, Ph.D.², (1)University of Southern California, Los Angeles, CA, (2)GlaxoSmithKline, Research Triangle Park, NC

50. MULTIPLE CRITERIA DECISION ANALYSIS FOR HEALTH TECHNOLOGY ASSESSMENT (ESP)

Praveen Thokala, PhD, University of Sheffield, Sheffield, United Kingdom

51. PERCEPTIONS AND REALITIES OF FOOD FORTIFICATION IN PREVENTING ANEMIA (ESP)

Nune Truzyan, DVM, MPH, Byron Crape, MSPH, PhD, Varduhi Petrosyan, MS, PhD and Ruzanna Grigoryan, MD, MPH, American University of Armenia, Yerevan, Armenia
52. PATIENT PERCEPTIONS AND EXPERIENCES WITH SITES OF CARE (SOCS) AMONG PATIENTS WITH IMMUNOLOGY CONDITIONS CURRENTLY USING INTRAVENOUS (IV) BIOLOGIC THERAPY (ESP)

Susan C. Bolge, Julie Vanderpoel, Helen Eldridge, Samir Mody, Jennifer Lofland and Michael P. Ingham, Centocor Ortho Biotech Services, LLC, Horsham, PA

53. VARIATION AMONG US STATES IN INPATIENT COST OF DIABETES-RELATED LOWER EXTREMITY AMPUTATION: IS THERE A REGIONAL PATTERN? (ESP)

Sheldon X. Kong, Ph.D.¹, Larry Radican, Ph.D.¹ and Hongjun Yin, Ph.D.², (1)Merck & Company, Inc., Whitehouse Station, NJ, (2)Long Island University, Brooklyn, NY

54. THE POTENTIAL OF EARLY MODELING OF NEW TECHNOLOGIES TO HELP INFORM DECISION-MAKING (ESP)

Tania P. Lourenco, PhD, University of Aberdeen, Aberdeen, United Kingdom and Luke Vale, MA, PhD, University of Newcastle, Newcastle, United Kingdom

55. COMPARATIVE EFFECTIVENESS OF ANTIARRHYTHMIC DRUG THERAPY IN ATRIAL FIBRILLATION: FOCUS ON CARDIOVASCULAR HOSPITALIZATION AND MORTALITY OUTCOMES (ESP)

Matthew Solomon, MD, Ph.D., Stanford University, Stanford, CA, Darius Lakdawalla, Ph.D., University of Southern California, Los Angeles, CA, Mintu Turakhia, MD, MAS, Stanford University School of Medicine, Stanford, CA, Mehul Jhaveri, PharmD, MPH, sanofi-aventis U.S., Bridgewater, NJ, Pamela Davis, MD, sanofi-aventis US, Bridgewater, NJ and Lily Bradley, MBA, Precision Health Economics, Santa Monica, CA

56. SURVIVAL-BASED QUALITY OF LIFE ASSESSMENTS (ESP)

Walton Sumner, MD, Washington University, St. Louis, MO, Steven Kymes, Ph.D., Washington University School of Medicine, Saint Louis, MO, Jinzhong Xu, PhD, American Board of Family Medicine, Lexington, KY and Michael Hagen, MD, University of Kentucky, Lexington, KY
57. CAN DECISION TREE ANALYSIS BE USED TO IDENTIFY THE OPTIMAL EVENT PATHWAY TO REACH AN ACCURATE DIAGNOSIS? THE MAZE OF CARE STUDY IN OVARIAN CANCER (ESP)

Lisa M. Hess, PhD, MA, MS, BA¹, Michael W. Method, MD, MPH, MBA², Frederick B. Stehman, MD¹, Tess D. Weathers, MPH¹, Paridha Gupta, MPH¹ and Jeanne M. Schilder, MD¹, (1)Indiana University School of Medicine, Indianapolis, IN, (2)Northern Indiana Cancer Research Consortium, South Bend, IN

58. BIOLOGIC EXPERIENCE AND SYSTEMIC MEDICATION USE AMONG COMMERCIALLY INSURED PSORIASIS PATIENTS RECEIVING USTEKINUMAB (ESP)

Chureen T. Carter¹, Silas Martin¹, Leigh Denny¹ and DB Smith², (1)Centocor Ortho Biotech Services, LLC, Horsham, PA, (2)IMS Health, Watertown, MA

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