A3
A SPATIAL DISTRIBUTION OF ADULT OBESITY PREVALENCE IN DENVER, COLORADO: AN EMPIRICAL BAYES APPROACH
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OBJECTIVES: Measuring obesity prevalence across geographic areas must take into account environmental and socioeconomic factors that contribute to spatial auto-correlation across neighboring areas. Dependency among observations across a geographic area violates statistical independence assumptions and bias estimates. Empirical Bayes estimators “smooth” variables with spatial autocorrelation, which limits the overall mean square-error and controls for bias estimates. METHODS: Using a new system for BMI surveillance in Colorado, we modeled the spatial auto-correlation of adult (≥ 18 years old) BMI (≥ 30 kg/m²) in Denver County using patient-level electronic health record data from Kaiser Permanente Colorado (KPCO) between 2009-2011. We modeled the spatial Bayes model to calculate smoothed obesity prevalence across census tracts. SAS 9.2 was used to clear and aggregate data. GeoDa was used to calculate the Moran’s I statistic to test for spatial autocorrelation across census tracts and smooth BMI data. KP Maps was used to map smooth obesity prevalence. RESULTS: Among patients with a valid BMI, we measure patient counts > 10 across 143 census tracts in Denver County, for a total sample size of 46,241 adults. Crude obesity prevalence for adults was 27.01% (95% CI 25.50-28.51%) and ranged from 10.98-45.73% across census tracts. Smoothed obesity prevalence was 26.93% (95% CI 25.63-28.24) and ranged from 13.19-42.03%. The Moran’s I statistic for crude obesity prevalence was 0.7407 (p ≤ 0.001) and the Moran’s I statistic for the smoothed obesity prevalence was 0.7469 (p ≤ 0.001), suggesting adult obesity prevalence was distributed in a non-random pattern. CONCLUSIONS: Results reveal smoothed obesity prevalence for adults are non-random in Denver County at the census tract level. Clusters of smoothed obesity are highly significant (alpha < 0.05). Across census tracts of high obesity prevalence. Concentrations of obesity are primarily in the west and northeast of the county, with less clustering of obesity in the central and southern parts of the county.

A4
THE APPLICATION OF NATURAL LANGUAGE PROCESSING (NLP) TECHNOLOGY TO ENRICH ELECTRONIC MEDICAL RECORDS (EMRs) FOR OUTCOMES RESEARCH IN ONCOLOGY
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OBJECTIVES: Many studies which use EMRs to evaluate oncology patients and practices have caveats around partial/missing observations within patient records. We describe an approach to build a potentially richer oncology dataset, supplementing EMR with case note observations through the use of NLP, applied specifically for the classification of molecular data. METHODS: THE SenseNCOLO platform exploits the information contained in EMRs by linking and searching biomedical literature, identifying the molecular entities. Molecular entities are identified based on broad topics such as medications, signs, disease and symptoms, measurements and observations. The data is harvested from the notes fields within the electronic patient record (EPR) and can be used to extract measurements of clinical and research significance. RESULTS: Of the 18,068 included patients with a valid BMI, we measure patient counts > 10 across 143 census tracts in Denver County, for a total sample size of 46,241 adults. Crude obesity prevalence for adults was 27.01% (95% CI 25.50-28.51%) and ranged from 10.98-45.73% across census tracts. Smoothed obesity prevalence was 26.93% (95% CI 25.63-28.24) and ranged from 13.19-42.03%. The Moran’s I statistic for crude obesity prevalence was 0.7407 (p ≤ 0.001) and the Moran’s I statistic for the smoothed obesity prevalence was 0.7469 (p ≤ 0.001), suggesting adult obesity prevalence was distributed in a non-random pattern. CONCLUSIONS: Results reveal smoothed obesity prevalence for adults are non-random in Denver County at the census tract level. Clusters of smoothed obesity are highly significant (alpha < 0.05). Across census tracts of high obesity prevalence. Concentrations of obesity are primarily in the west and northeast of the county, with less clustering of obesity in the central and southern parts of the county.

A6

H1
CADTH RECOMMENDATIONS AS PREDICTORS FOR DRUG AVAILABILITY IN BRITISH COLUMBIA AND ONTARIO
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OBJECTIVES: The Canadian Agency for Drugs and Technologies in Health (CADTH) conducts health technology assessments and provides recommendations for drug listing and reimbursement. However, the health care providers of individual Canadian provinces are not obligated to follow CADTH recommendations. The aim of this study is to assess the value of CADTH recommendations as predictors of drug availability in British Columbia and Ontario. METHODS: This study included 95 CADTH recommendations for 88 drugs across 30 disease conditions. The British Columbia formularies and special access programs were searched for each of these 88 drugs (some drugs were included more than once as CADTH reviewed them for multiple indications). Agreement was defined as any case in which drugs received positive CADTH recommendations and were listed by a province’s health care plan. We used Kendall’s coefficient of concordance (K) to assess agreement among recommendations across provinces. If no drug was recommended, the recommendation was considered “negative” when CADTH recommended that a drug not be listed. RESULTS: CADTH recommendations were significantly associated with both British Columbia’s drug listings (p<0.01) and Ontario’s drug listings (p<0.01). CADTH recommendations agreed with British Columbia listing decisions for 74% of the drugs reviewed by CADTH. Ontario agreed with CADTH for 71% of the drugs. Positive CADTH recommendations in particular often translated to availability in British Columbia and Ontario. Of the 57 drugs that received positive CADTH recommendations, 82% (47) are available in BC and 93% (53) are available in Ontario. Of the 36 drugs receiving negative CADTH recommendations in BC and Ontario, 58% (21) are available in BC and 59% (21) are available in Ontario. CONCLUSIONS: A positive CADTH recommendation is a good predictor of drug availability in British Columbia and Ontario. A drug that receives a negative CADTH recommendation, however, still has a significant probability of being listed by each province’s health care system, especially through their special access programs.

H2
THE IMPACT OF NICE’S END-OF-LIFE THRESHOLD ON PATIENT ACCESS TO NEW CANCER THERAPIES IN ENGLAND AND WALES

OBJECTIVES: In January 2009 NICE introduced supplementary advice to aid patient access to end-of-life treatments. The advice allowed existing cost-effectiveness thresholds (with an estimated upper limit of £30,000 per QALY) to be extended to treatments indicated for patients with a short life expectancy, provided they apply to small patient populations and are shown to extend life by at least 3 months. Previous research has determined this extended threshold to be around £50,000 per QALY. The aim of this study was to investigate the trends in end-of-life appraisals and recommendations since their introduction in 2009. METHODS: NICE single technology appraisals for cancer therapeutics were reviewed from 2008 to 2013. ICERs were extracted from appraisals against the end-of-life criteria. Results: During the timeframe considered, 31 appraisals were evaluated against the end-of-life criteria. Of the 21 appraisals considered to meet the criteria, 13 were recommended for use on the NHS, with ICERs ranging from £31,800 to £51,800 per QALY. However, between 2009 and 2013, the average yearly ICERs for end-of-life appraisals increased from £41,633 to £72,667. This general increase was reflected by a subsequent decrease in approved treatments over time. Between 2008 and 2013, 67% of end-of-life treatments were approved, this is compared to 5 recommendations issued in 2009 alone. In 2013, no new end-of-life treatments were approved by NICE, with a lowest ICER in the submitted appraisals of £50,200 per QALY. CONCLUSIONS: The general trend of increasing ICERS in new end-of-life appraisals has resulted in fewer treatments being approved by NICE in recent years. Given the limiting effect this could have on improving patient access, this may mean that patients need to rely on other funding sources, such as the Cancer Drug Fund in England, to access novel cancer therapeutics.

H3
INCENTIVIZING VALUE IN MANAGED CARE FORMULARIES: DESIGN, IMPLEMENTATION, AND FIRST-YEAR OUTCOMES OF A VALUE-BASED FORMULARY
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OBJECTIVES: In 2009, Premera Blue Cross, a major Pacific Northwest managed care plan with 1 million enrolled lives, implemented a value based formulary (VBF) which utilizes cost-effectiveness thresholds and clinical decision making processes to determine the existence-based value of each individual drug. The value of each drug is used to determine the corresponding formulary tier placement for the drug. The objective of this study is describe the design, implementation and first-year outcomes of Premera’s VBF. METHODS: We compared observed pharmacy costs per member per month (PMPM) in the year following VBF implementation to observed pharmacy costs twelve months prior to and an expected counterfactual estimate if no changes were made to the pharmacy benefits. The counterfactual estimate was generated using autoregressive integrated moving average applied to prior thirty-six months pharmacy costs. We assessed drug use and adherence among individuals with diabetes, hypertension, or dyslipidemia utilizing an interrupted time series design with a comparison group composed of members from three employer groups which had the same pharmacy copay increases but did not implement a VBF. RESULTS: Premera pharmacy costs decreased by 3% or 11% PMPM compared to the twelve months prior to and twelve months following the implementation of the VBF, respectively. Among individuals with diabetes, hypertension, or dyslipidemia in the VBF cohort, there was no significant decline in adherence or number of users of medications for the treatment of diabetes, hypertension, or dyslipidemia. CONCLUSIONS: Despite an overall larger member cost share structure and potential health plan savings, the VBF was potentially able to maintain medication utilization in key disease states. Subsequent analyses utilizing longer follow-up and greater control for confounding will establish more valid estimates of outcomes and costs.

H4
THE POTENTIAL IMPACT OF RECOMMENDATIONS MADE THROUGH THE COMMON DRUG REVIEW PROGRAM AT THE CANADIAN AGENCY FOR DRUGS AND TECHNOLOGIES IN HEALTH
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OBJECTIVES: The Common Drug Review (CDR), a pan-Canadian program at the Canadian Agency for Drugs and Technologies in Health (CADTH), assesses the clinical effectiveness, cost effectiveness and patient evidence of new drugs to provide...