predictive models to identify 'high risk' readmission patients such as LACE. Historically, in-hospital severity predictive models have been developed for various services and disease states. Some of the most widely used severity measures are the Modified Early Warning Score (MEWS), Glasgow Coma Score (GCS), Acute Physiology, and the American Society of Anesthesiologists (ASA) Score. We wish to compare in-hospital severity scores to predict 30 day readmission. **Methods:** A retrospective a cohort of patients was assembled who were admitted to two Geisinger hospitals during calendar year 2012. Admissions related to a child's birth, unknown acuity, and in-hospital deaths. Data was obtained during the year preceding the admission and outcomes were assessed up to 30 days post-discharge. Additional data including initial laboratory results, comorbidities, length of stay, and discharge disposition was obtained. For severity scores measured longitudinally during the admission, we selected the initial, last, and worse. A base model of known readmission predictors was built using logistic regression with a flexible specification of continuous measures, and the severity scores were considered individually by forcing them into the model. The net reclassification index (NRI) was used to quantify improvement in prediction. **Results:** A total of 41,413 admissions met cohort entry criteria (mean age 58.5 y, 45% (18,628) male). Readmissions within 30 days occurred 13.3% (5,502) during 2012 with another 2.9% (1,217) that died without a readmission. The base model consisting of demographics, comorbidities, discharge disposition, and utilization in past year resulted in an area under the ROC curve (AUC) of 0.710. LACE significantly contributed to the model (AUC = 0.715, NRI = 2.0%, OR = 1.12 [1.10, 1.13], P <0.001). The last reported GCS was significantly associated with 30-day readmission (OR = 1.05 [1.02, 1.09]), however there was no increase in the AUC and the NRI was non-significant. The MEWS was not significantly associated with readmission. **Conclusions:** The usefulness of in-hospital severity scores was not consistent in their association with readmission. Additional research is needed to understand performance in subgroups and to utilize serial measurements when available.

Keywords: Readmission; Severity

doi:10.3121/cmr.2014.1250.ps1-42

Healthcare Disparities

D3-1:

HMO Research Network Rural Health Scientific Interest Group (Rural Health-SIG): Highlights from Four Member Sites and Opportunities for Collaboration

David McClure[1]; Jeffrey Van Wormer[1]; Stephen Waring[2]; Thomas Elliot[2]; Lisa Bailey-Davis[3]; Laurel Copeland[4]

[1]Marshfield Clinic Research Foundation; [2]Essentia Institute of Rural Health; [3]Geisinger Health System; [4]Scott & White Healthcare

Background/Aims: Compared to their urban counterparts, rural residents have persistent health disparities and remain medically underserved. However as shown last year by the Rural Health SIG, many diseases and health conditions strongly impact rural and urban dwellers (Copeland et al, HMORN 2013 PS3-47). To put this in perspective, we describe the member populations and highlight the research specialties from four of seven Rural Health-SIG sites with a substantial number of members living in rural areas. **Methods:** We identified member population sizes, areas of scientific emphasis, and research resources for Essentia Institute of Rural Health (EIRH), Geisinger Center for Health Research (GCHR), Marshfield Clinic Research Foundation (MCRF), and Scott & White Center for Applied Health Research (SWR). Sources were VDW documentation, HMO Research Network Members-Areas of Scientific Emphasis Based on Self-Report (2011/2012), and publicly available websites for each of the sites. **Results:** Currently, there are over 1 million members in 2012 VDW enrollment (EIRH: 565,603; GCHR: 310,834; MCRF: 195,182; SWR: 94,351) of which at least half live in rural areas and at least 30% receive government funded health insurance assistance (Medicare, Medicaid, or state subsidies). Collectively, we have ongoing research activity in all areas of HMORN scientific interest. Areas of significant emphasis (multiple projects per year) for at least two sites include: obesity, active living, healthy eating; dissemination science and translation of research into practice; patient decision-making and health literacy; quality improvement and health care delivery; genetics, genomics, bio-repositories; health informatics; heart/vascular, lung and blood diseases; neurological disorders; and aging. Moreover, all four sites reported significant emphasis in community engagement and community-based participatory research. In comparison to the 11 other, primarily urban HMORN member sites, eight reported some emphasis in this area and none reported significant emphasis. Patient-reported outcome capability is also rapidly developing at Rural Health SIG sites in response to deployment of electronic medical record systems and the quest to achieve Accountable Care Organization status. **Conclusions:** Rural Health SIG Investigators have broad expertise in many areas of scientific interest within the HMORN that apply to improving the health of rural and urban residents. We welcome invitations to collaborate.

Keywords: Healthcare disparities; Rural health

doi:10.3121/cmr.2014.1250.d3-1

D3-2:

Forecasting Disease Burden and Health Utilization in Uninsured Populations in California Health Insurance Exchange Pricing Regions

Tuan Dinh[1]

[1]Kaiser Permanente Northern California

Background/Aims: Starting in January 2014, millions of currently uninsured Californians will be able to purchase health insurance on the California Health Insurance Exchange (HIE). For planning purposes, it is important to estimate disease burden and demands for services in uninsured populations. The Archimedes Model is a trial-validated, clinically detailed simulation model of human physiology, disease progression, and healthcare delivery. The Archimedes Model synthesizes evidence from hundreds of data sources to create virtual patients that are representative of the US population, in terms of demographic distribution, disease progression, clinical outcomes, patient and provider behaviors; office visits and hospital admissions; tests and treatments; care delivery protocols; compliance; and costs. Kaiser Permanente and Archimedes collaborated to develop a capability based on the Archimedes Model to forecast disease burden and healthcare utilization in uninsured populations for each of the 18 California Health Insurance Exchange pricing regions. **Methods:** We used data from 20 diverse California and US surveys and databases as inputs into the Archimedes Model to create realistic individuals that closely match the uninsured populations in each pricing region, with respect to demographics, socioeconomic status, and medical conditions. Within the Archimedes Model, the relationships between biomarkers, medication adherence and usage, disease progression, clinical outcomes, care processes and healthcare utilizations are well-established and carefully validated against many independent datasets. We use the Archimedes Model to combine datasets with overlapping information and to fill in the missing information for uninsured Californians, then forecast the clinical outcomes and health utilizations in the next 10 years for this population as well as the benefits and costs of different prevention and disease management strategies. **Results:** We created 19 datasets that are representative of the pricing regions on the Health Insurance Exchange and cover a wide range of outcomes and conditions, including diabetes, cardiovascular diseases, cancers, COPD, asthma, childbirths and mental health. **Conclusions:** Health plans and insurers can use the information provided by the datasets for resource allocation and capacity planning. Local officials will able to use these datasets measure today's health of their communities and forecast tomorrow's health.

Keywords: Uninsured; Healthcare utilization

doi:10.3121/cmr.2014.1250.d3-2

D3-3:

Differing Quality or Differing Expectations: Should One Adjust for Patient Race/Ethnicity when Assessing Patient Satisfaction?

Sukyung Chung[1]; Latha Palaniappan[1]; Edith Gamboa[1]; Hal Luft[1]

[1]Palo Alto Medical Foundation Research Institute

Background/Aims: The literature indicates Asians rate their health care experience lower than do non-Hispanic whites (NHWs). Cultural norms in rating similar experience may contribute to this, but before any adjustment, one should make sure differing ratings do not reflect true quality differences. We examined whether adjustment for the race/ethnicity (R/E) of survey