4 large healthcare systems with laboratory-confirmed HCV. A total of 4,781 patients completed surveys in 2011-2012 (completion rate = 60%). Survey data included demographics, PHQ-8 depression, SF-8 physical health, level of social support, stress exposures, and from the medical record, HCV treatment history and the Charlson comorbidity score. **Results:** The mean age of patients was 57 (SD = 18), 71% (95% CI = 70-72) were Caucasian, 57% (95% CI = 56-58) male, 47% (95% CI = 46-49) had been treated for HCV, 51% (95% CI = 50-53) reported past injection drug use, 60% were HCV genotype 1, and 15% (95% CI = 14-15) had confirmed sustained viral response (SVR) to HCV therapy. Altogether, 30% of patients (95% CI = 28-31) met criteria for current depression on the PHQ-8 and 25% (95% C = 23-26) had poor physical health on SF-8. In multivariate logistic analyses, the best predictors of depression included female gender (OR = 1.34, $P < 0.001$) age (OR = 0.83, $P < 0.001$), Caucasian race (OR = 1.42, $P < 0.001$), unemployment (OR = 2.98, $P < 0.001$), high stressor exposure vs. low (OR = 2.61, $P < 0.001$), low social support vs. high (OR = 1.73, $P < 0.001$), history of drug rehabilitation (OR = 1.45, $P < 0.001$), and higher Charlson comorbidity scores (OR = 1.17, $P < 0.001$). Having SVR to HCV therapy, was protective for depression (OR = 0.77, $P = 0.017$). The best predictors of poor physical health included Caucasian race (OR = 1.46, $P < 0.001$), unemployment (OR = 3.96, $P < 0.001$), higher Charlson scores (OR = 1.28, $P < 0.001$), high stressor exposure vs. low (OR = 1.78, $P < 0.001$), and moderate social support vs. low (OR = 1.48, $P < 0.001$). Counter to expectation, injection drug use history was protective of poor physical health (OR = 0.71, $P < 0.001$). **Conclusions:** Among HCV patients, the best predictors of depression and poor physical health were demographic factors, employment status, Charlson scores, current life stressors, and current social support. While SVR was protective for depression, HCV treatment history was generally not associated with mental health or physical health status, once other covariates were controlled.

Keywords: Chronic hepatitis C; Depression

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PS2-11:

Estimating Population Level Impact of Healthy Eating and Active Living (HEAL) Initiatives in Colorado

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Background/Aims: To promote health through the prevention and reduction of obesity, organizations are implementing healthy eating and active living (HEAL) strategies in local communities. LiveWell Colorado (LWC), a non-profit organization whose mission is to inspire and advance policy, environmental, and lifestyle changes to prevent and reduce obesity, provides funding to 24 underserved communities across Colorado to develop place-based interventions focused on built environment, food access, and policy changes that support HEAL. **Methods:** The Kaiser Permanente Evaluation Team (KPET) assists LWC communities in designing and measuring HEAL interventions that will have positive impact on population health. Working with community coordinators and local evaluators to identify key strategies, KPET estimates the impact of community efforts to prevent and reduce obesity at the population level. This evaluation methodology is referred to as "Population Dose." Dose is an estimate of the impact of community level interventions on an average resident's behavior. It is initially measured by individual strategy to determine both potential dose, based on the planned strategy, and actual dose, based on analysis of the implemented strategy. To assess Population Dose, community strategies are then clustered by behavioral outcome and given a quantitative Dose Rating that is based on reach and strength data for all strategies in each outcome category. The rating is used to estimate the impact of HEAL interventions across the entire population, not just for those that were directly affected by the intervention. **Results:** Using the Population Dose framework, KPET has seen shifts in HEAL behaviors at both the school and community levels. One example is in LiveWell Longmont, where strategies focusing on Safe Routes to School, Physical Activity Breaks, and Physical Education have an overall dose rating of 6.63% which is considered "High Dose". This rating indicates that it is highly likely that there has been an increase in physical activity of school-aged children in Longmont. **Conclusions:** The Population Dose framework is an informative tool for assessing population level impact of HEAL

strategies. It can be used to assess planned or current strategies to address obesity and assist in decisions about which outcome will have the most impact on obesity.

Keywords: HEAL; Obesity

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PS2-5:

The Impact of Diabetes Bundle Management on the Medical Cost of Diabetes: A Four-year Longitudinal Study

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Background/Aims: Type 2 diabetes is one of the nation's most prevalent chronic diseases, and the rate is increasing every year. In 2006 a diabetes system of care using a nine-component all-or-none bundle (diabetes bundle) of measures was introduced to Geisinger primary care physicians (PCP). We evaluated how the diabetes bundle impacted the medical cost of diabetes. **Methods:** A cohort of diabetes patients between 2005 and 2008 was extracted from Geisinger Health Plan (GHP) claims, among them ~45% of members were Geisinger PCP patients, and thus under diabetes bundle management, and ~55% were not, and thus taken as controls. After applying inclusion and exclusion criteria, 2189 patients in Bundle group and 3554 patients in non-Bundle control group were used for analysis. A subgroup of 3102 Medicare beneficiaries (1862 were Geisinger patients, and 1240 were not) was also analyzed. Generalized linear models were applied to determine the association between cost and Bundle/control groups, adjusting for comorbidities and patients' characteristics. The estimations of cost attributed to Bundle year by year were performed using difference-in-difference method. Separate analysis of outpatient cost and inpatient cost was also performed. Marginal effect for each comorbidities and characteristics was estimated by recycling prediction. **Results:** After adjusting for age, sex, and comorbidities, the average costs attributed to Bundle were -\$1569, \$20 and \$589 dollars for Medicare beneficiaries from 2006 to 2008 (positive means cost reduction, i.e. saving money). And they were -\$470, -\$251 and \$104 for overall patients. Bundle reduces cost for patients with comorbidities, especially for diabetes-related complications, for example, patients with chronic kidney disease (CKD) saved \$427 in 2008 than those without CKD. Reduction of inpatient cost accounted for most of saving, the average inpatient costs attributed to Bundle were \$117, \$340 and \$720 from 2006 to 2008. **Conclusions:** Patients under diabetes bundle management were beneficial in term of cost, especially for the long term cost, the benefit could be observed as early as 2 years after bundle implementation, and the reduction of inpatient cost account for most of reduced cost.

Keywords: All-or-non diabetes bundle; Cost reduction

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PS2-6:

Using Health Risk Assessments to Understand Older Adult Sedentary Time

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Background/Aims: Sedentary time (ST) is independently associated with cardio-metabolic conditions and mortality. Older adults have the highest levels of ST of all age groups. Little is known about how ST relates to BMI, health conditions, and health costs in older adults. Our aim was to use electronic health records (EHR) to better explore these relationships. **Methods:** We extracted health risk assessment data (HRA), outpatient visit diagnosis codes, and total healthcare costs from the EHR of a large health plan in WA State (Group Health). All members aged 65-99 who completed an HRA in 2011 and were continuously enrolled for 2 years, did not reside in long-term care, or have a terminal health condition were included (N = 3967; ~10% of all eligible members). ST was assessed by the International Physical Activity (IPA) Questionnaire sitting item. BMI was calculated using most recent weight and height from the EHR. Cardiovascular disease and diabetes were identified using ICD-9 codes. We used regression analysis to determine how mean ST varied with factors such as diabetes, while controlling for age,

gender, race, ethnicity, BMI, diet, and hours of PA per week. **Results:** Age and PA were strongly related to ST. Obese participants (BMI >30 (24% of the sample) had significantly higher mean ST (6.75 hours/day, $P < .001$) compared to overweight (6.06) and normal weight (5.67) older adults. Those with diabetes (14% of the sample), had significantly higher ST (6.42 hours/day) than those without (6 hours/day; $P = .01$). Total healthcare costs increase on average \$139 for each additional hour of sitting ($P = .03$). **Conclusions:** After adjusting for demographic, health behaviors, and health conditions, older adults with a higher BMI, diabetes, and higher total healthcare costs had greater self-reported ST. These patterns indicate that ST may be an important health behavior to target for intervention as people age.

Keywords: Physical activity; Electronic health records

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PS2-8:

Development and Implementation of Clinical Decision Support Tools in Epic to Standardize Dementia Diagnosis and Care at Essentia Health

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Background/Aims: The current estimated prevalence of Alzheimer's disease and related dementias in the US is over 5 million and projected to increase to over 15 million by 2050. The already overwhelming personal and economic burden this represents for patients, families, and health care providers is only expected to increase as well. Essentia Health recognizes the urgent need to standardize dementia diagnosis and management system-wide to enhance earlier detection of cognitive issues that will lead to better management of dementia and comorbid conditions to reduce the burden of this devastating disease and improve quality of life for patients and their caregivers. **Methods:** The Division of Primary Care at Essentia Health is developing a standardized approach to dementia diagnosis and care to be implemented system-wide. An advisory workgroup consisting of physicians and NPs from primary care (family practice, internal medicine), specialty care (elder care, neurology, neuropsychology), and community partners (Alzheimer's Association, Arrowhead Area Agency on Aging, Family Memory Care Consultants) continues to meet monthly to plan integration and implementation. We have initiated a pilot study in two of our primary care clinics to implement and evaluate this approach and to inform further development. **Results:** Two separate smartsets have been created—the EH Memory Screen/MiniCog Smartset (MCOG Set) and the Memory Screen/MOCA SmartSet (MOCA Set). The first is intended to guide cognitive screening at the annual wellness visit (AWV) and the other to serve as a guide for a follow-up examination if indicated from the MOCA Set. **Conclusions:** We plan to present both quantitative and qualitative information based on our experience through the first few months of implementation. This will include a thorough evaluation of the work plan as well as lessons learned to inform further implementation at EH and other systems.

Keywords: Clinical decision support; Dementia

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PS2-9:

The KPSC Experience of Recruiting 18-year old Emerging Adults

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Background/Aims: The challenges of obesity interventions have led researchers and policy makers to focus on obesity prevention. Studying normal weight individuals as they transition from adolescence into adulthood is an interesting group because they have avoided obesity thus far in their life. However, it is a period of weight gain. HMOs have unparalleled access to young adults, but they are typically hard to reach; effective methods to recruit them into studies are relatively unknown. The purpose of this study was to identify effective recruitment methods of 18 year old Kaiser Permanente Southern California (KPSC) members. **Methods:** The study population was age 18 years in 2012, had at least one outpatient visit with a body mass index (BMI) in 2012, was generally healthy, and normal weight (BMI <25kg/m²). From over 13,000 individuals that met criteria, 500 were

randomly selected (55% female) to be contacted through mail, telephone, email, or text. We asked them to complete a 9-item survey. Recruitment was conducted over 6 weeks by 2 research associates. Attempts were made to contact 320 individuals, of which 185 members had an email in our electronic records. The protocol allowed for 5 email attempts, after which telephone attempts were made. **Results:** Overall 82 persons (25.6%) completed the survey and 30 (9%) actively refused. For those with an email, 27 surveys were completed (15%), with 4 refusals. Another 23 completed the survey by telephone, with 8 refusals. Of the telephone-only persons, 32 surveys were completed and 18 refused. Incorrect contact information was found for 23 persons. At the end of 6 weeks, we did not reach the remaining members, although anecdotally we spoke to many parents. **Conclusions:** Future efforts may require more staff time. Even though the members were adults, many parents were still gatekeepers for their children. It may be more effective to target a younger age group to recruit parents as well as children to obtain informed consent.

Keywords: Emerging adults; Recruitment

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Communication/Dissemination

C2-1:

Choosing Hospice or Choosing Dying: The Cultural and Medical Meanings of "Hospice" and the Role of Provider Referrals in Transition to Hospice Care

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Background/Aims: Hospice care is widely used at the end of life yet it remains stigmatized and feared. Current research on the transition to hospice overlooks the dimension of patient choice and the symbolic importance of hospice to patients and families. Understanding the transition from the point of view of patients and family members is critical in increasing use of hospice care and decreasing "late referrals." **Methods:** This research draws on in-depth retrospective interviews with 18 patients in home hospice care in the United States and 11 family members/caregivers. **Results:** Examining narratives about transitioning to hospice reveals two insights. First, the referral is one highly variable element of a more complex process better conceptualized as a transition. Transitions may be (1) provider-driven or (2) patient/family-driven. Some patients and families play a very active role in this transition, including self-referring to hospice. Second, the style of provider referrals is commonly remembered as being very negative. Negative referrals tend to draw on a cultural meaning of hospice as "giving up" or "choosing dying", while positive referrals conceptualize hospice as a medical and psychosocial strategy that is advantageous for patients and families. **Conclusions:** Understanding referral as a discrete, but critical component of a longer strategy for transitioning to hospice care, should lead providers to carefully plan when and how they present hospice care to patients. Understanding the spectrum of patient and family perspectives can also improve providers' ability to customize their referrals and the likelihood that patients will transition to hospice care if and when it would benefit them.

Keywords: Hospice; Referral

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C2-2:

Assessing Patient Perceptions of Communication throughout Cancer Care: Results of an Initial Administration of a New Item Set

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Background/Aims: Patient-centered communication is vital to quality care. Strategies are needed for assessing patients' views on communication over the entire course of cancer care. We sought to describe cancer patients' perceptions of their communication experiences using a new set of items. Of particular interest were patients' reports of when communication "fell short" and the aspects of communication considered most important. **Methods:** We