30 years of medical record data before enrollment, we can also relate mid-life treatments and cardiac risk factors like hypertension to late-life brain function, neuroimaging, and pathologic changes. **Conclusions:** Seattle's ACT study establishes proof of concept of a "living laboratory" for studies of aging and dementia in older adults and has demonstrated protective effects of exercise, importance of vascular risk factors, and population-based studies of MCI and late-life neuropathologic phenomena. Achieving the ACT study's full potential will require support of infrastructure needs beyond the study's data and unique population base and setting.

## P4-035	ARE HERPES SIMPLEX VIRUS OR HELICOBACTER PYLORI INFECTIONS RISK FACTORS OF DEMENTIA?

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Background: Herpes Simplex Virus (HSV) infection has been proposed as a possible risk factor of Alzheimer's Disease notably because it is neurotropic, ubiquitous in the general population and able to establish lifelong latency in the host. A higher prevalence of *Helicobacter pylori* (*Hp*) infection was also found in Alzheimer's disease or MCI patients. We investigated whether HSV or *Hp* infection was a risk factor for developing dementia over a 14 years period. **Methods:** Sera from 512 elderly initially free of dementia included in the PAQUID cohort and followed for 14 years were analysed. Subjects were considered as infected by HSV if the presence of anti-HSV IgG or IgM antibodies was detected. Subjects were considered as infected by *Hp* if immunoblot assay was positive. Cox proportional hazard models were used to study the risk of developing dementia. **Results:** During the follow-up, 97 incident cases of dementia were diagnosed. Controlled for age, gender, educational level, baseline MMSE and Apolipoprotein E4 (APOE4) status, IgM-positive subjects showed a significant higher risk of developing dementia (HR= 2.06; 95% CI [1.15 - 3.69]; p<0.015), although no significant increased risk was observed in IgG-positive subjects (HR=1.77; 95%CI [0.87 - 3.59]; p<0.11). Subjects infected with *Hp* also showed a higher risk of developing dementia (HR= 1.61; 95% CI [0.99 - 2.61]; p<0.06). **Conclusions:** Reactivation of HSV seropositivity is highly correlated with incident AD. *Hp* infection also tends to increase the risk of developing dementia. Chronic infections may therefore be contributive to the neural tissue damage observed in neurodegenerative diseases.

## P4-036	IDENTIFYING COMMUNITY-DWELLING INDIVIDUALS WITH ALZHEIMER'S DISEASE USING OBSERVATIONAL DATA

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Background: Using diagnosis codes in administrative data to estimate the prevalence of Alzheimer's disease (AD) has been shown to introduce errors of omission and commission. The objectives of this study were to identify the most sensitive and specific alternative disease definition for case ascertainment and to provide insight on causes of widely-varied cost estimates in the cost-of-illness literature. **Methods:** Retrospective cross-sectional analyses were performed on a nationally representative sample of elderly, community-dwelling Medicare beneficiaries using the 1999-2004 waves of the Medicare Current Beneficiary Survey (MCBS) (n=57,669). Individuals with AD were identified based on six definitions according to (1) survey report only, (2) diagnosis only, or (3) use of Alzheimer's prescription medicine only, or some combination of the three. Agreement between different case definitions was assessed using a Venn diagram, kappa coefficient, sensitivity and specificity. We also explored the extent to which estimates in overall health care and prescription drug expenditures

vary by how Alzheimer's cases are defined. **Results:** Using any of the three case definitions, 3,198 individuals (5.55%) were identified as having AD. Using survey report alone yielded more cases (n=1,994 or 3.46%) than diagnosis codes alone (n=1,589 or 2.76%) or Alzheimer's medication use alone (n=1,160 or 2.01%). Kappa coefficients were low, ranging from 0.37 to 0.40. Using diagnosis in medical claims as a definitive measure for AD (i.e., "gold standard"), survey report was specific (97.7%) but had low sensitivity (44.2%) and Alzheimer's medication use was slightly more specific (98.9%) but less sensitive (34.8%). Per capita health expenditures ranged from $16,547 to $24,937, and drug expenditures ranged from $2,303 to $3,519, depending on how AD was defined. **Conclusions:** Different case definitions identify different subsets of individuals with AD. Self-report appears to be a highly specific approach to identifying Alzheimer's cases without the loss of sensitivity found in Alzheimer's medication use. As a consequence of different disease definitions employed, the costs of AD varied widely. One should exercise caution in interpreting current cost-of-illness studies and in applying these estimates to policy initiatives.

## P4-037	CARDIOVASCULAR DISEASE, APOLIPOPROTEIN E4 AND DEMENTIA IN THE U.S. POPULATION: THE AGING DEMOGRAPHICS AND MEMORY STUDY

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Background: The identification of risk factors for dementia is important to aid prediction and to identify potential interventions for treatment and prevention. Evidence from highly selected clinical samples and geographically limited population studies suggests that cardiovascular disease and apolipoprotein E4 are risk factors for dementia, though their combined effects in the US population remain uncertain. **Objective:** To examine the associations among cardiovascular disease, use of cardiovascular medications, apolipoprotein E4 and risk for dementia in the US population. **Methods:** We used data from the Aging Demographics and Memory Study (ADAMS), the first population-based study of dementia in the US to include subjects from all regions of the country, while at the same time using a single standardized diagnostic protocol in a community-based sample. A sample of 856 individuals aged 70 years or older who were participants in the ongoing Health and Retirement Study (HRS) received an extensive in-home clinical and neuropsychological assessment in 2001-2003 to determine a dementia diagnosis. The relation of cardiovascular risk factors (diabetes and hypertension), cardiovascular disease (heart disease and stroke), use of cardiovascular medications, and apolipoprotein E4 genotype (allele combinations 2/4, 3/4, and 4/4 vs. 2/2, 2/3, and 3/3) to risk for dementia was modelled using logistic regression. Analyses were adjusted for source HRS interview (2000 or 2002), age, sex, race, and education. **Results:** Apolipoprotein E4 (odds ratio [OR] 2.8, 95% confidence interval [CI] 1.7, 4.6), treated stroke (OR 4.7, 95% CI 2.5, 8.8), untreated stroke (OR 5.6, 95% CI 2.7, 11.5), and untreated hypertension (OR 2.4, 95% CI 1.0, 5.4) all increased the odds of dementia, whereas treated hypertension decreased the odds of dementia (OR 0.6, 95% CI 0.3, 1.0). No significant association was found between dementia diagnosis and diabetes (with or without medication treatment for diabetes), or heart disease (treated or untreated). **Conclusions:** Data from the first population-based dementia study that is representative of the US population suggest that stroke, untreated hypertension and Apolipoprotein E4 increase the risk of dementia. The use of antihypertensive medications was associated with a significant decrease in the risk of dementia.