



The Impact of CalPERS Long-Term Care Program on End-of-Life Medical Care Costs

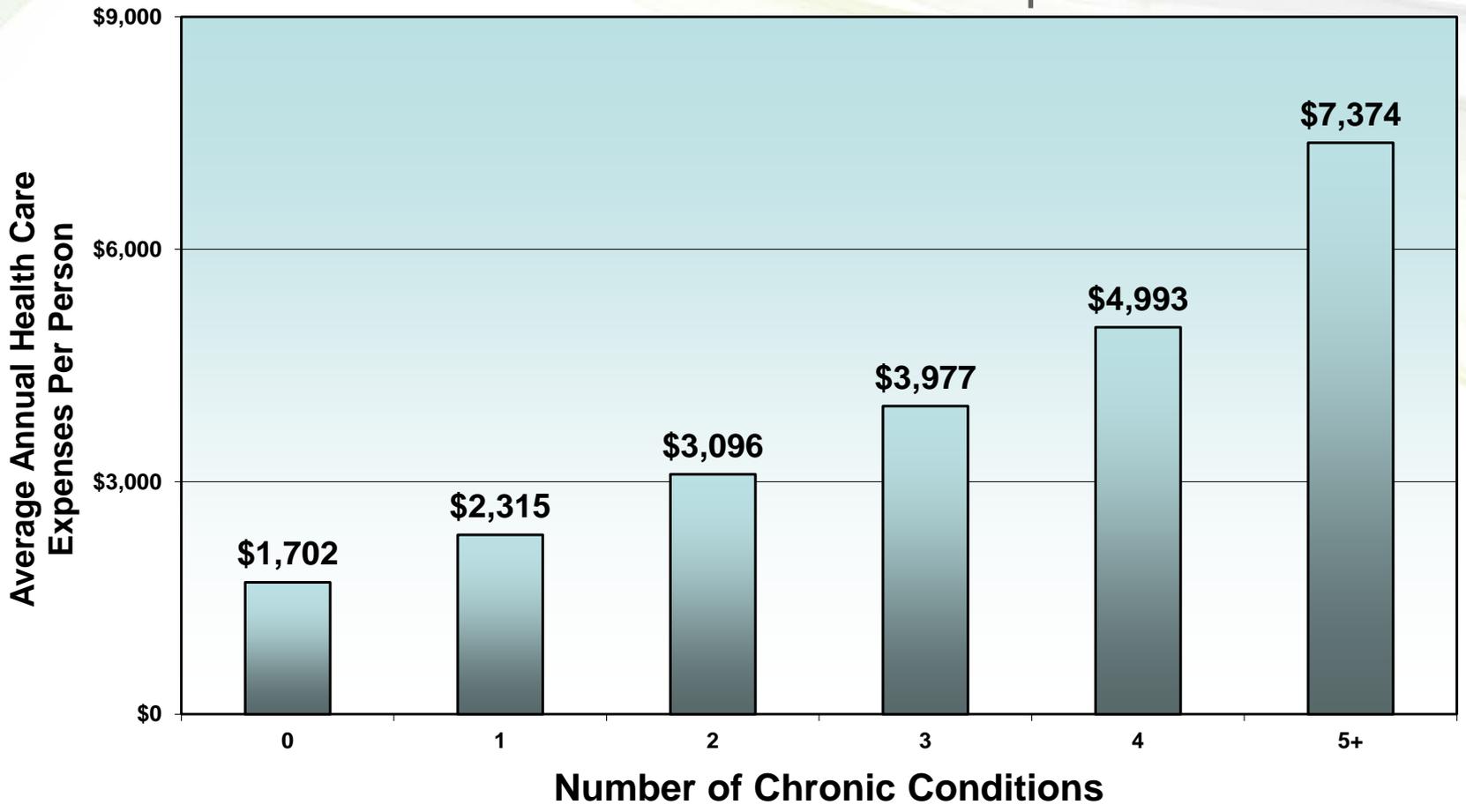
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August 20, 2013

- Background
- Study Hypothesis
- Study Design
- Sampling methodology
- Results
- Significant Findings
- Implications

Chronic Conditions Drive Cost and Utilization

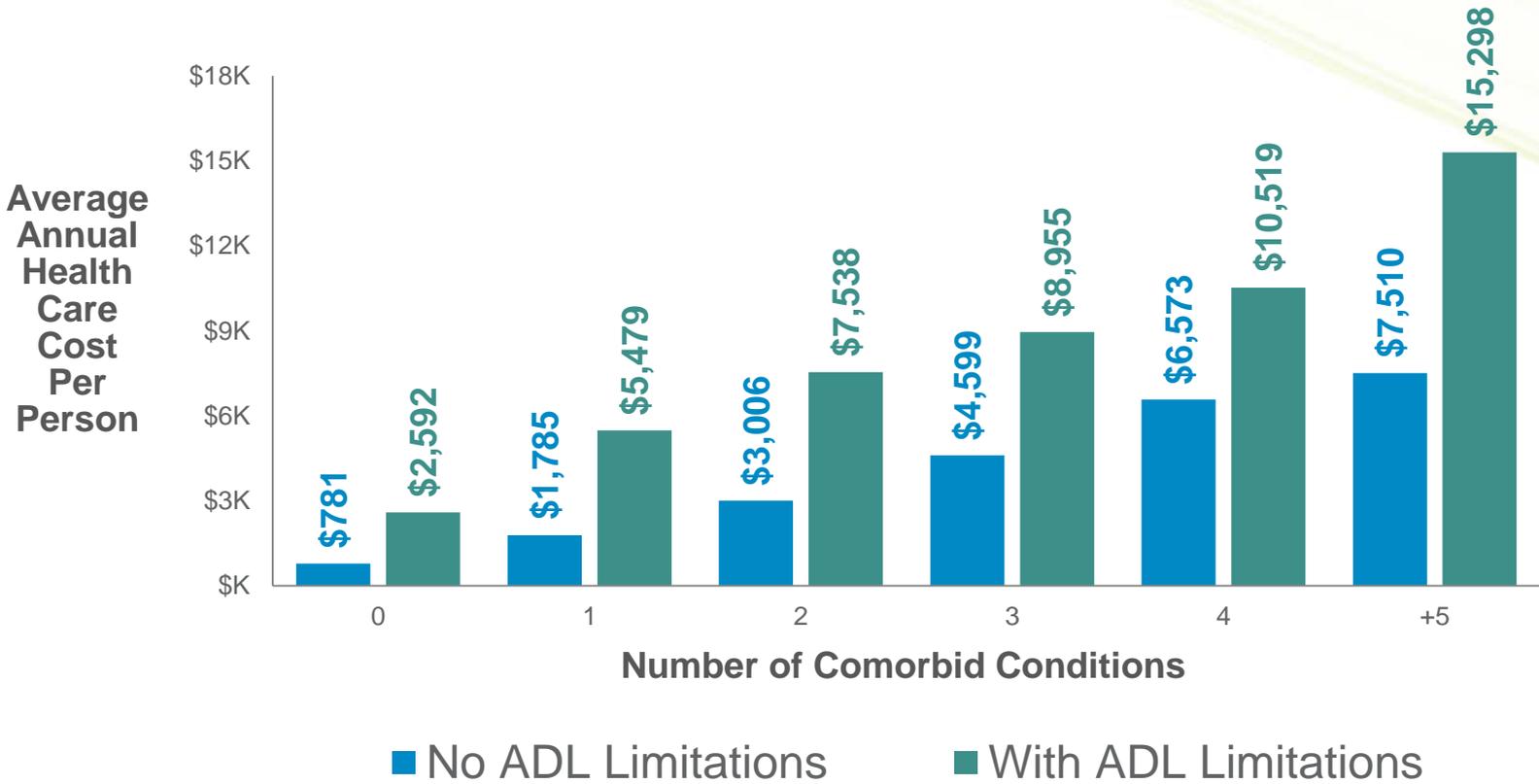
Total Annual Healthcare Expenditures



Source: Medical Expenditure Panel Survey, 2004 in G. Anderson, Chronic Conditions Sourcebook, 11-2007

With Increasing Complexity Comes Increasing Utilization and Cost (and Opportunity)

Impact of Functional Disability and Comorbidity on Health Care Costs



- Significant medical costs at the end of life
 - In 1978: 28.3% of total Medicare expenditures incurred by 5% in last year of life
 - Despite advanced directives, hospice and palliative care, end of life expenditures between 1978-06 have remained stable and substantial
- Today, a significant share of health care resources consumed in the last months of life
 - End of Life: 10-20% of overall health expenditures and 27-30% of Medicare Expenditures
 - More than 30% of Medicare resources are consumed by 5% of beneficiaries who die each year.

- Disability versus Compression of Morbidity
 - Significant compression occurs – e.g., cancer and heart disease
 - Prolonged periods of disability are still possible in the diseases of older age such as Parkinson's, dementia, arthritis, debility (and MS)
- Little is known about the impact of long term personal care at end of life
 - Instrumental activities of daily living (ADL) and activities of daily living (ADL) assistance, supervision for cognitive impairment
 - Socialization, medication management
 - Increasing need for paid and unpaid care as chronic diseases such as prevalence of Parkinson's, Alzheimer's dementia and MS increases

Impact of Paid Personal Care at the End of Life
CaIPERS OUTCOME STUDY

Availability of CalPERS LTCP paid Long-Term Care services and Care Management at the end of life will have a positive impact on health care utilization and cost of care as compared to those without access to reimbursed personal care services.

Study design and methodology

- Select a common event: last year of life
- Draw study participants from CalPERS self-insured health plan
- Select high frequency conditions causing dependency
 - Dementia, Stroke, Parkinson's disease, etc.
- Identify CalPERS LTCP members using LTC benefits during their last year of life (treatment group)
- Develop Propensity Model based upon patient characteristics and utilization at 13-24 months prior to death
- Identify *similar* CalPERS self-insured health plan members without CalPERS LTCP coverage (control group)
- Adjust for differences & compare healthcare utilization & costs

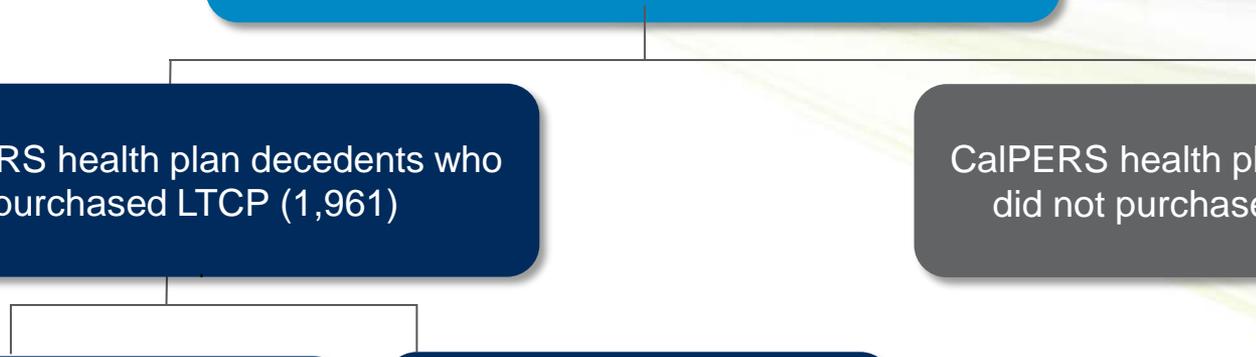
CalPERS health plan members age ≥ 65 years
who died between in 2007-2011 (21,220)

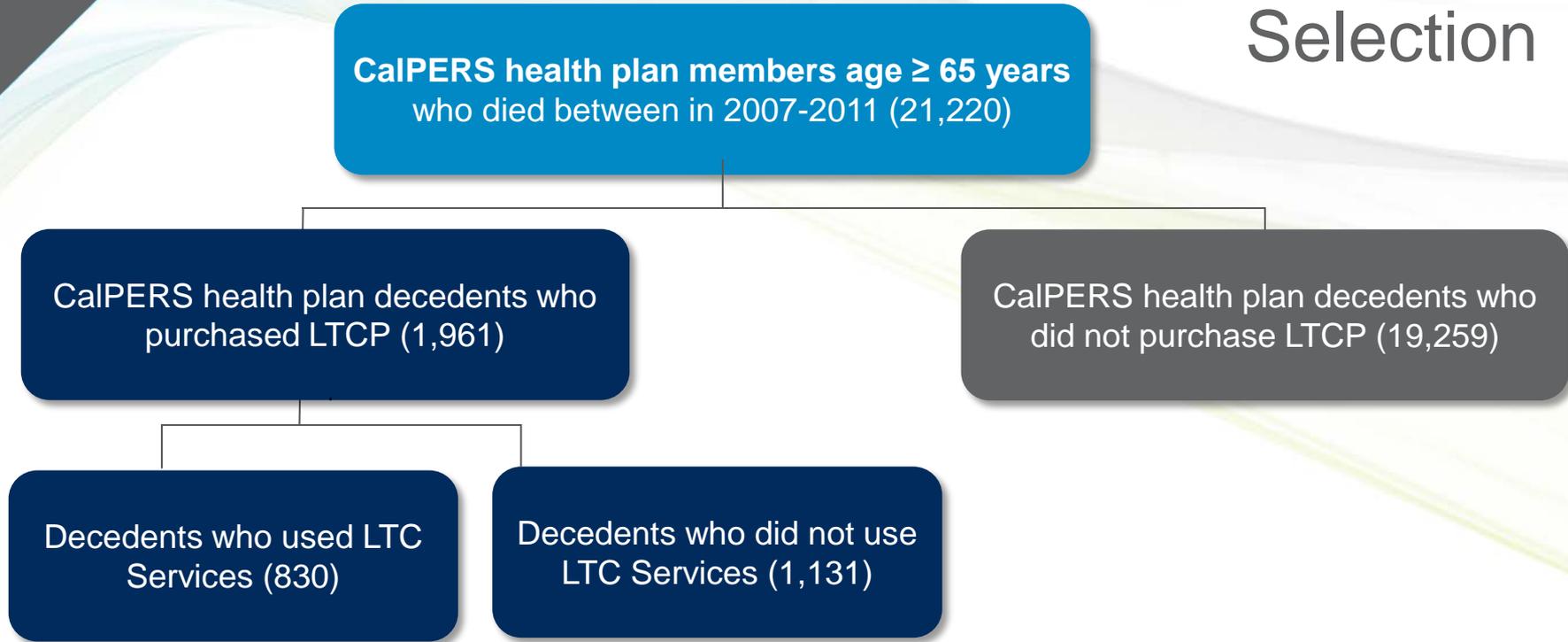
CalPERS health plan decedents who
purchased LTCP (1,961)

CalPERS health plan decedents who
did not purchase LTCP (19,259)

Decedents who used LTC
Services (830)

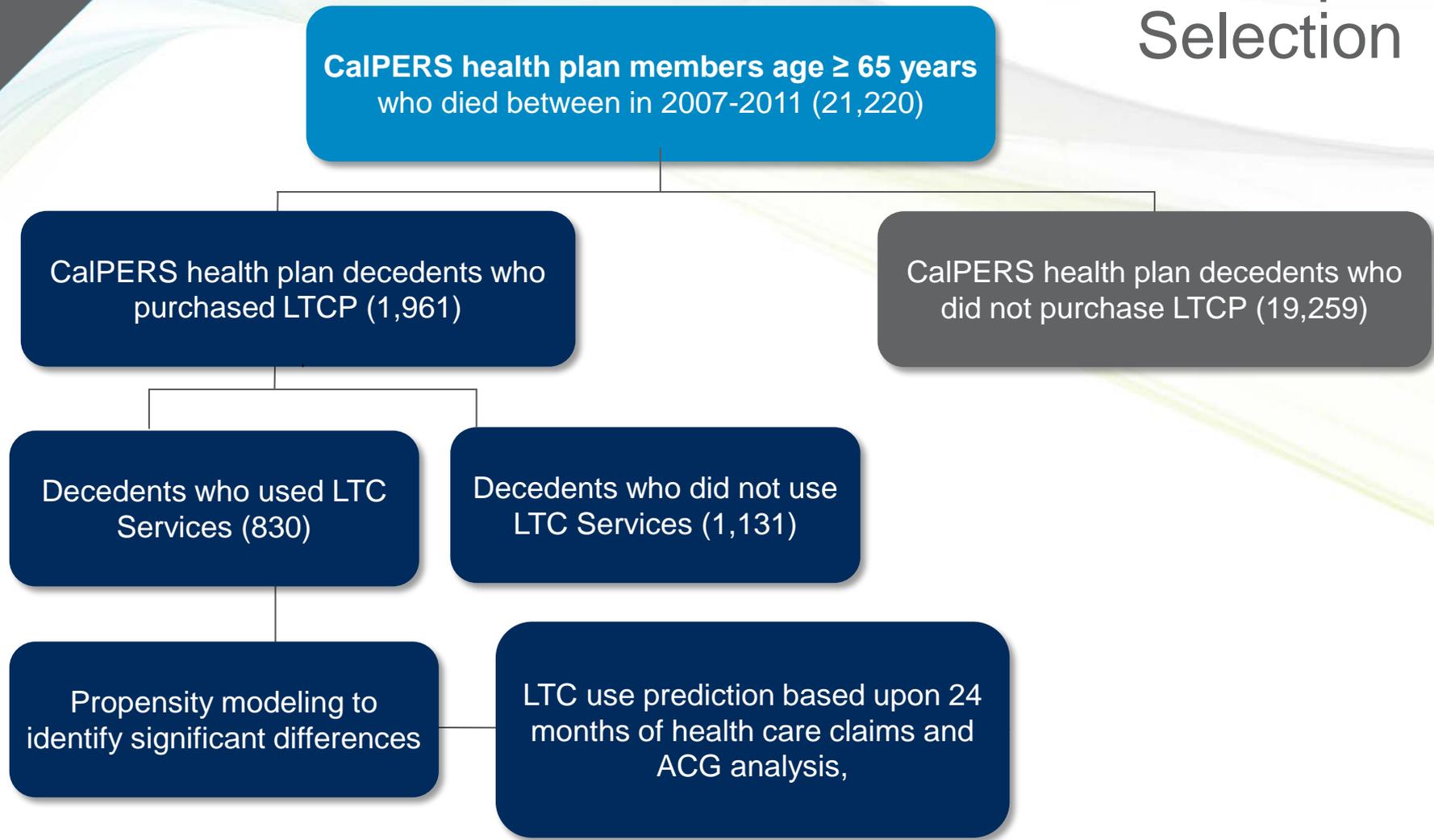
Decedents who did not use
LTC Services (1,131)

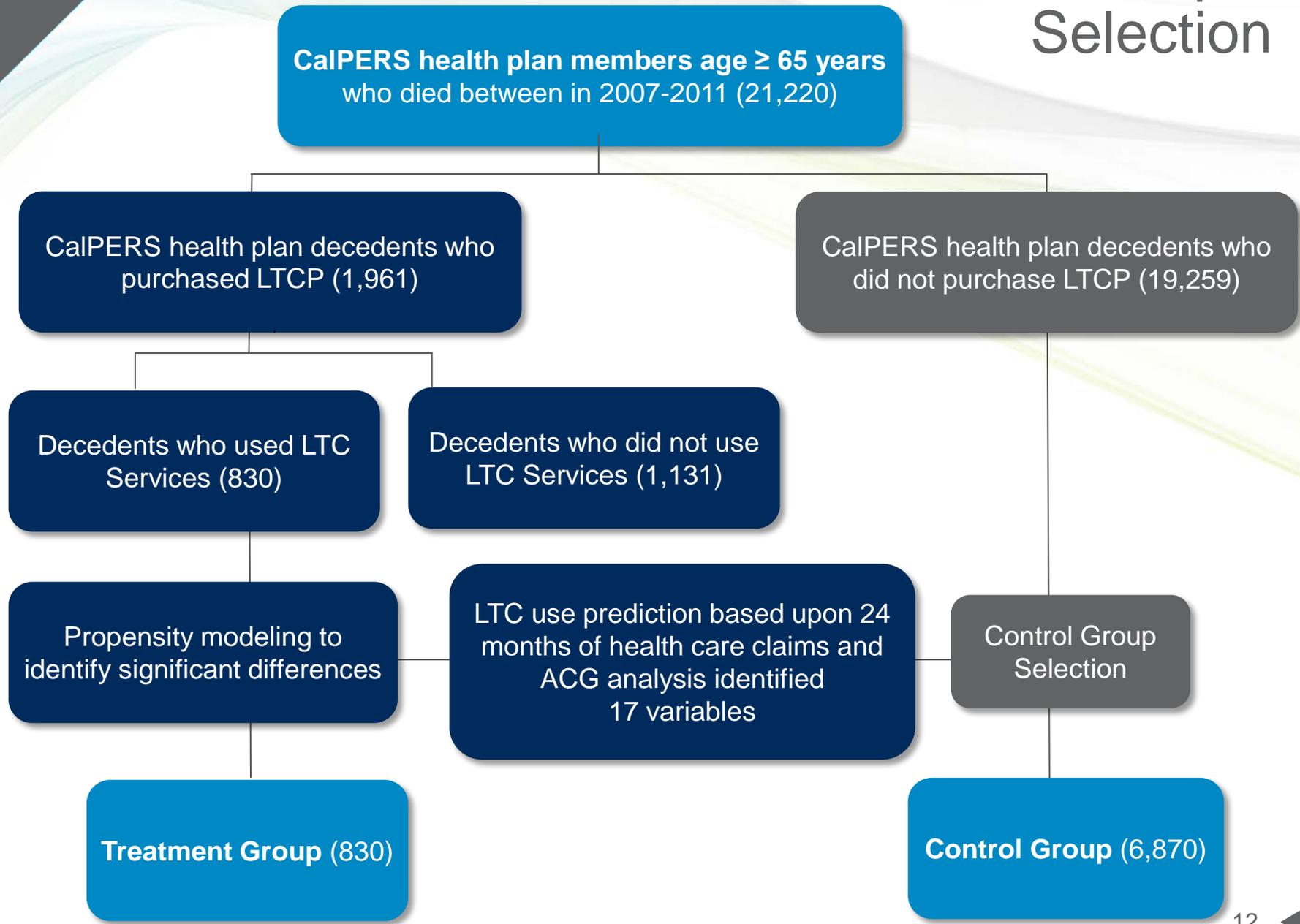




Compare Groups on over 70 variables using the ACG[®] System

- Age
- Gender
- Diagnosis, diagnoses directly related to use
- Frailty Burden
- Number of medications
- Probability of inpatient admission, both due to injury (short) and extended LOS
- Etc.





Sample characteristics: Last year of life

	Total Study Population
Total Healthcare Payments	\$33,238/patient
Inpatient Admits	64/1000
Inpatient Payments	\$22,975/patient
Home Care Visits	4,863/1000
Home Care Payments	\$665/patient
Skilled Nursing Facility Admits	227/1000
Skilled Nursing Facility Days of Care	829/1000
Skilled Nursing Facility Payments	\$922/patient
Emergency department Visits	1,078/1000
Emergency Department Payments	\$477/patient
Hospice Admits	19/1000
Hospice Days of Care (Average LOS)	8,335/1000 (19.4 days)
Hospice Payments	\$81/patient

Subject characteristics

	Treatment	Control
Number of Subjects	830	6,870
Age (years)	83.2	83.9
Gender (percentage female)	50%	54%
Frailty Burden*	44%	42%
Dementia	46%	45%
Depression	49%	48%
Count of conditions directly related to use (mean)	4.8	4.9
Diagnoses used (mean)	31.5	31.4
Major procedures performed	16%	17%
Nursing Services received	37%	34%
Medication counts (13-24 months, mean)	11.8	11.6
Probability of injury-related hospitalization (mean)	0.04	0.04
Probability of extended hospitalizations (mean)	0.14	0.14
Probability of using LTC services (propensity score, mean)	0.62	0.62

**Frailty burden is extremely high for these groups (typical Medicare cohort :~4%)*

Utilization and cost comparisons

Relative percent difference between comparison and treatment groups for each outcome

	Percent Difference*	Significance
Total medical costs	-13.8%	0.006
Total pharmacy costs	-13.2%	0.014
Inpatient admission costs	-34.0%	0.000
Emergency department costs	-0.1%	NS
Outpatient visit costs	-16.2%	0.005
Skilled nursing facility bed days	11.3%	0.046
Skilled nursing facility costs	16.0%	NS

**A negative value means the treatment group utilized fewer services or had lower costs*

Utilization and cost comparisons

Final regression results for comparison and treatment groups after adjusting for 17 Covariates

	Beta*	Significance
Inpatient admission count (sq rt)	-0.06	0.001
Inpatient bed day count (sq rt)	-0.10	0.003
Outpatient visit count (sq rt)	-0.04	NS
Skilled nursing facility admission counts (sq rt)	0.04	NS

**A negative beta coefficient means the treatment group utilized fewer services*

- In the last year of life, individuals using LTC insurance benefits for personal care and care management differed significantly from those without reimbursable LTC services
 - Lower overall total healthcare costs
 - Lower inpatient costs
 - Fewer inpatient admissions and days of care
 - Lower pharmacy costs
 - Lower outpatient visit costs

- Subgroup analysis looked end of life medical costs and utilization for those with dementia and those without dementia
 - For those without dementia
 - Significantly lower overall total medical costs, lower total pharmacy costs, lower inpatient admissions and inpatient costs, lower outpatient costs and lower skilled nursing facility admissions and days of care.
 - For those with dementia
 - Significantly fewer inpatient days of care.

- Evidence from this study suggests that the use of CalPERS LTCP reimbursed services and care management have a **significant favorable impact on a number of health care utilization and expenditures** during the last year of life
- The **positive impact was across a number of key components of utilization and costs** including a number of measures of inpatient utilization and cost as well as pharmacy costs and outpatient costs.

- This is a retrospective claims based study
- Unable to truly match on level of functional and cognitive disability
- True cost of personal care is unknown
- Unable to quantify out-of-pocket costs from both groups
- Unable to quantify the amount of voluntary care provided

- This study provides evidence that the addition of paid, formal Long Term Care services and Care Management have a positive impact by reducing both health care utilization and costs for complex, chronically ill individuals at the end of their lives.
- Broad promotion of long term care insurance is an important strategy in national efforts to control healthcare utilization and cost for complex, chronically ill individuals.



Questions and Discussion

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