

# How We Grieve: Quantifying the Health-Related Quality of Life Impacts of Losing a Co-Habiting Family Member

Cordier T, Pieratt J, Ganti M, Stevenson S, Haugh G, Gumpina R, Gato J, Renda A

Humana Inc, Louisville, KY

## Background

- Grieving the loss of a loved one has been linked to a reduction in health-related quality of life (HRQoL).<sup>1-3</sup>
- The duration and magnitude of this reduction at the population level has yet to be quantified with confidence.
- Payers and other organizations responsible for improving or maintaining high quality clinical care and supporting the health and wellness of their respective populations are in search of guidance on investment in bereavement programs.

## Objective

To characterize the impact of the death of a co-habiting family member on Healthy Days and quality-adjusted life years (QALYs) in an elderly population of Medicare Advantage enrollees with prescription drug coverage (MAPD).

## Methods

**Study Design:** Cohort

**Data Sources:**

- Medical claims and enrollment records from Humana Inc, a national health and wellbeing company offering Medicare Advantage, stand-alone prescription drug, and commercial health coverage
- Annually administered Healthy Days (HRQoL-4) surveys

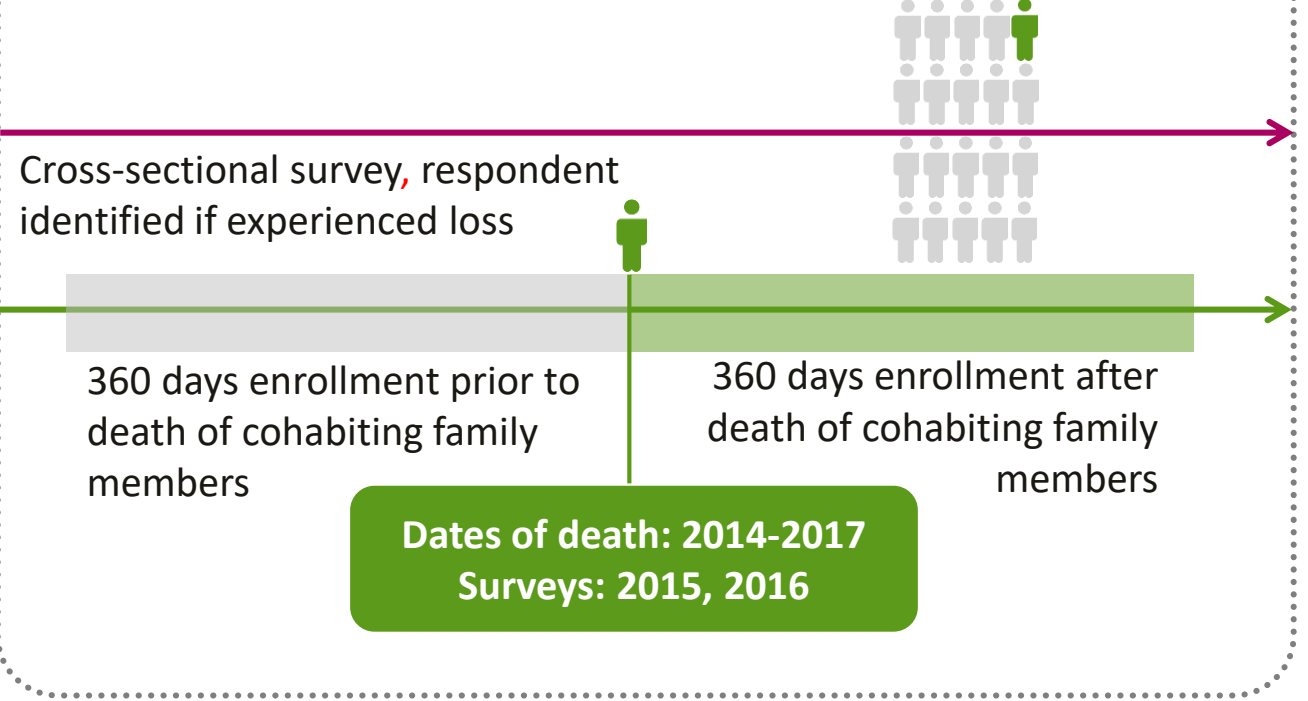
**Patient Selection Criteria:**

- Individuals in a MAPD plan who experienced the loss of a co-habiting family member also covered by Humana Inc.
- Completed a Healthy Days survey in 2015 or 2016 and within a year pre- or post-date of death
- 360 days of continuous coverage pre- and post- date of death
- Respondent had the same last name and address on record as the deceased
- Responded to all 4 questions in the Healthy Days (HRQoL-4) survey
- Respondent not deceased for ≥360 days post- the death of their cohabiting family member
- Respondents eligible for Medicare due to age over 65 (not disabled or ESRD)
- Respondent not receiving a low income subsidy for Part D coverage
- Respondent not in hospice care or institutionalized during study period

**Analysis:**

- QALYs estimated using Healthy Days to EQ-5D mapping algorithm proposed by Jia et al<sup>4</sup> with valuation on the basis of a gross domestic product multiple<sup>5</sup>
- Locally weighted regression used to fit smoothed curves defining the association over time between physically unhealthy days (PUHD)/mentally unhealthy days (MUHD) and death of the co-habitant
- Comparability of enrollees across time evaluated by examining differences in age, sex, and clinical risk over eight 90-day periods comprising the continuous enrollment period
- Data cleaning and analyses performed using SAS

## Figure 1. Study Design



## Results

Table 1. Population Characteristics

Characteristics	N=1937
Mean age, years ±SD	78 ±6.5
Women, n (%)	1,313 (67.8)
Race, n (%)	
White	1,735 (89.6)
Black	157 (8.1)
Other	45 (2.3)
State of residence, n (%)	
Florida	476 (24.6)
Louisiana	239 (12.3)
Tennessee	208 (10.7)
Texas	161 (8.3)
Kentucky	85 (4.4)
Other	768 (39.7)
Urban/rural status (USDA RUCA), n (%)	
Urban	1,520 (78.5)
Suburban	296 (15.3)
Large rural town	60 (3.1)
Small town/isolated rural	60 (3.1)
Medicare Advantage product, n (%)	
Health maintenance organization	1,247 (64.4)
Preferred provider organization	628 (32.4)
Other	62 (3.2)

RUCA, Rural Urban Commuting Area Codes Version 1.0<sup>3</sup>; USDA, United States Department of Agriculture

Figure 2. Impact of Loss of a Loved One on Physically and Mentally Unhealthy Days

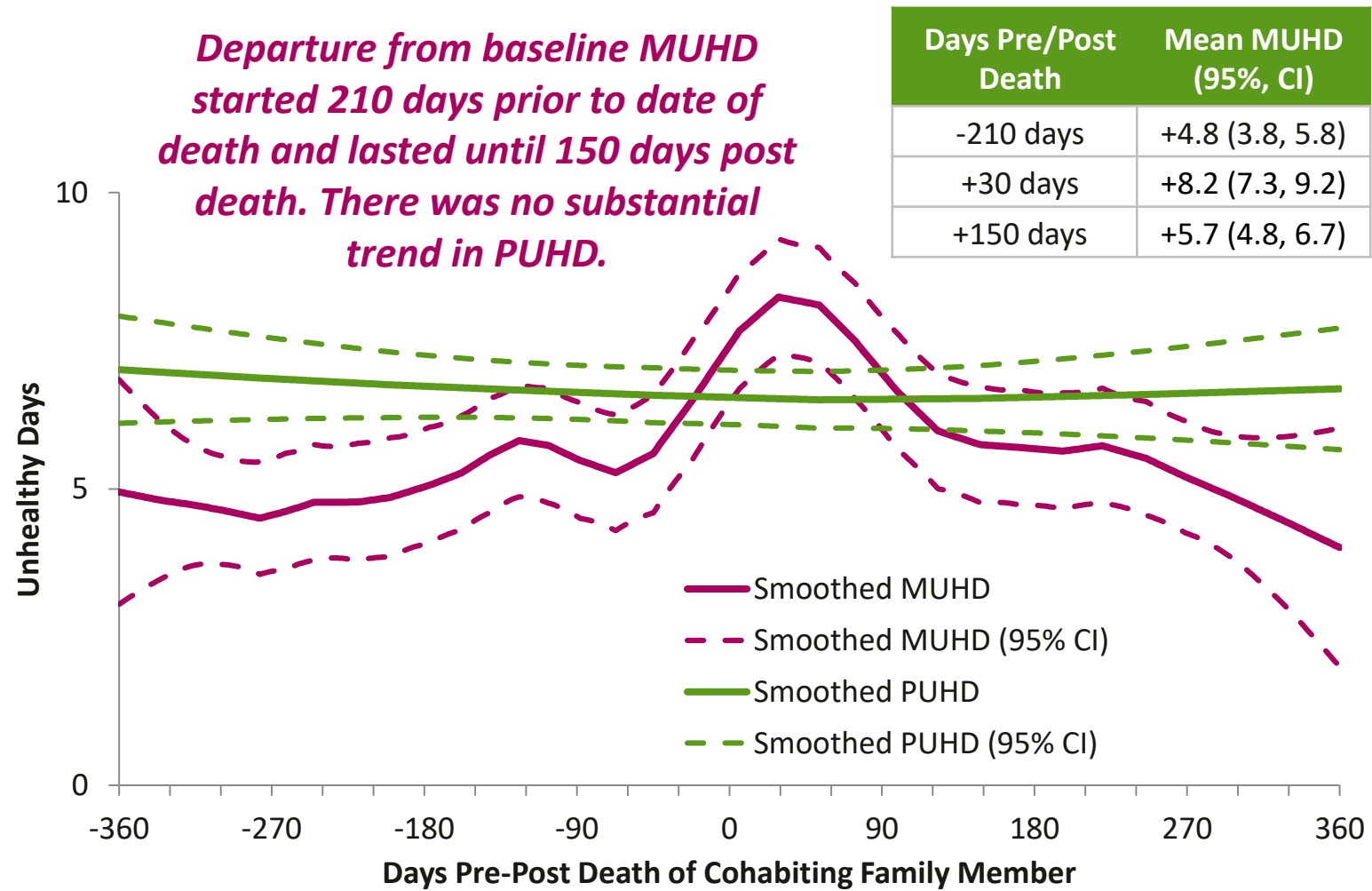


Figure 3. Impact of Loss of a Loved One on Physically and Mentally Unhealthy Days

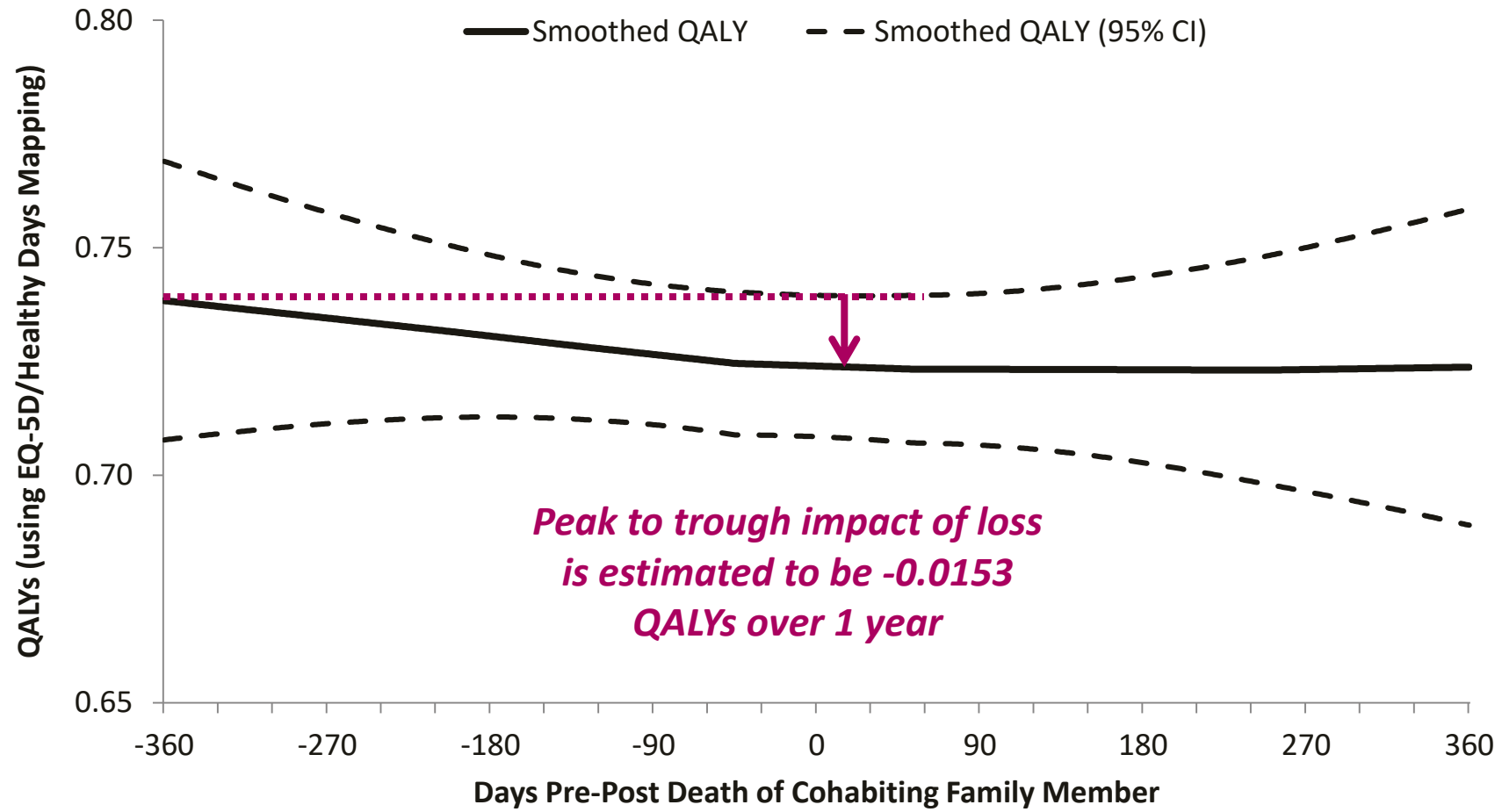


Figure 4. Diagnostics Assessing Validity of Counterfactuals Across Time

Days Pre-Post Death of Cohabiting Family Member								
	-360 to -271	-270 to -181	-180 to -91	-90 to 0	1 to 90	91 to 180	181 to 270	271 to 360
Age at Survey	77.5	77.7	77.2	78.2	78.6	78.9	78.7	79.0
Sex	69.1%	70.7%	67.4%	69.1%	70.3%	64.4%	63.6%	66.5%
Clinical Risk	1.05	1.13	1.05	1.12	1.06	1.09	1.16	1.08
% Urban	77.3%	77.2%	80.5%	80.3%	75.4%	77.6%	76.8%	83.5%
% White	88.9%	91.3%	88.3%	87.2%	91.4%	90.4%	91.2%	88.1%
% HMO	62.5%	65.4%	67.4%	65.8%	64.7%	63.0%	63.2%	61.4%
% Florida	24.2%	31.2%	27.0%	21.4%	25.4%	26.9%	16.2%	22.2%
P-value*	<0.0001							

\*P-value calculated using :MANOVA F-test for continuous variables and Mantel-Haenszel Chi-Square Test for categorical variables.

## Conclusions

- Individuals who experienced the loss of a cohabiting family member had a substantial mental HRQoL burden before and after their cohabitant's death.
- This burden was especially large during the first 1-2 months after the cohabitant's death.
- The impact of loss on QALY appears to be modest.
- These data suggest that interventions targeted at improving health-related quality of life for grieving individuals may be warranted, particularly within the months immediately before and after death.

## Limitations

- Locally weighted regression may underestimate the impact at the time of the event and overestimate the impact leading up to or post the event.
- Response to the survey may be correlated with the event, which could lead to bias.
- This analysis is also impacted by limitations inherent to all claims-based analyses (eg, missing data, coding errors, fixed variables).

## References

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## Disclosures

All authors are employees of Humana, Inc.; they have no other potential conflicts of interest to declare.