

# Symptoms and Comorbidities of Older Adult Lung Cancer Patients in the 2017 Medicare Claims Data

Noelle A. Herrier<sup>1</sup>, Kathleen A. Griffith<sup>1,3</sup>, Alice S. Ryan<sup>2,3</sup>, Beth B. Hogans<sup>3,4</sup>

1:The George Washington University, Washington, DC; 2: The University of Maryland, Baltimore, MD; 3: The Veterans Administration Medical Center, Baltimore, MD; 4: Johns Hopkins University, Baltimore, MD

## Significance

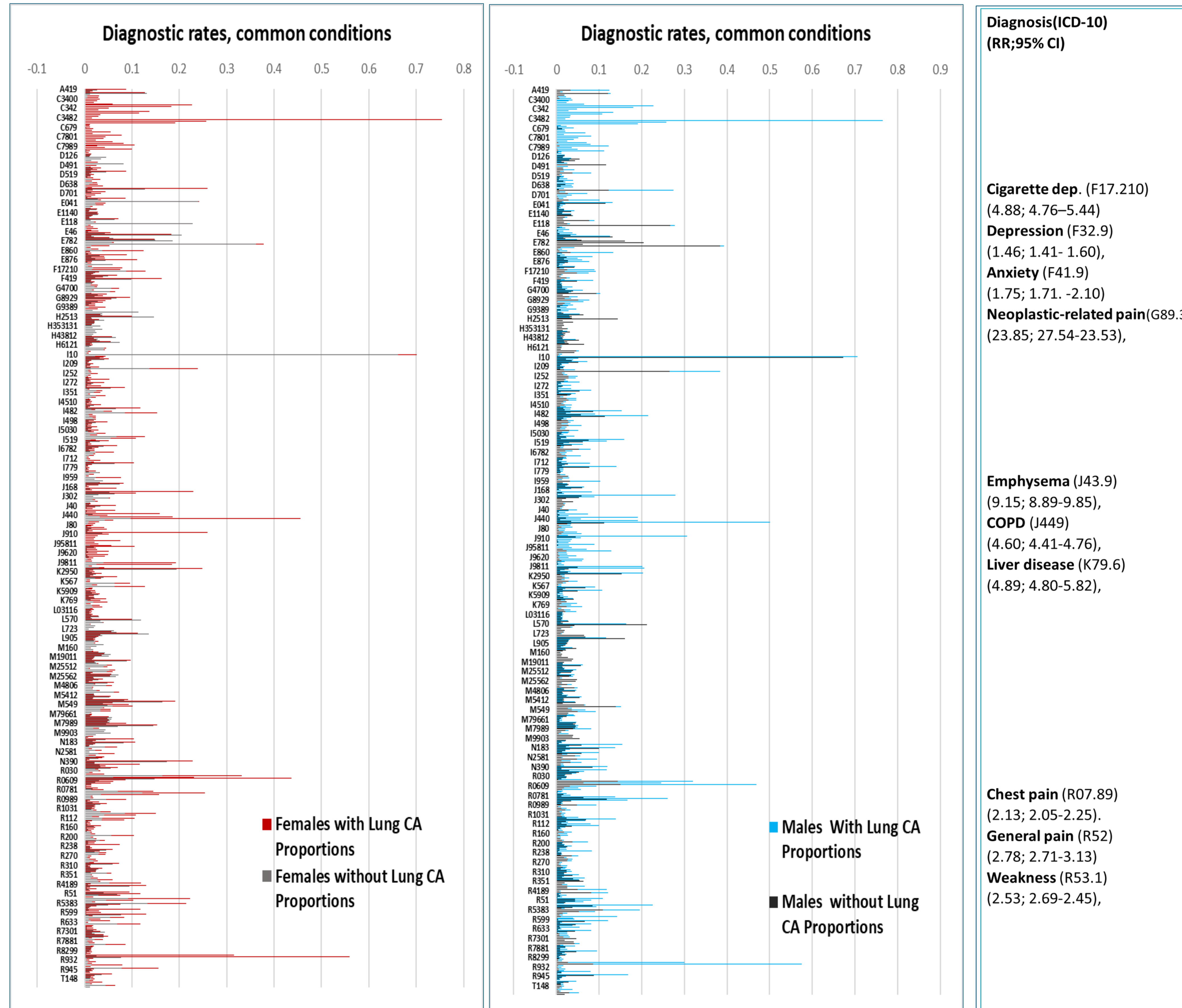
In patients with lung cancer (LC), co-morbid conditions and symptoms complicate treatment, diminish quality of life and shorten survival<sup>1</sup>. Mental health symptoms are correlated with increased physical symptoms and decreases in survival<sup>2</sup>. We aimed to describe the burden of common symptoms and comorbidities characterized by use of diagnostic codes in older adults with LC receiving Medicare-related healthcare. Based on the literature, we hypothesized increased rates of pain and mental health diagnoses in older adults with LC.

## Methods

A total of 18073 patients with LC were identified among 1,478,670 beneficiaries. We compared all ICD-10 coded diagnoses for patients with and without LC (comparison). Limiting our analysis for frequently coded ICD-10 diagnoses, we identified 651 codes utilized for older adults with lung cancer. Period prevalence and risk ratios were calculated for 38 symptoms, along with 18 major co-morbidities, all as represented by single ICD-10 codes in this pilot study. Rates were unadjusted for this representative national sample.

## Population

The study population consisted of adults age 65 and over in the 2017 5% sample of Medicare carrier file data, a standard analytical file. A total of 18073 older adults with lung cancer were identified among 1,478,670 beneficiaries.



## Results

### Gender Differences

An almost two-fold risk of anxiety (1.96; 1.90-2.74) in Men. Body mass index below 19.9 kg/m<sup>2</sup> greater risk in Men (4.68; 4.57-6.45) than women (2.62; 3.37-2.54). Compared to those without a history of LC, those with LC had increased rates of Depression, Anxiety, Pain, COPD, Liver Disease, Kidney Disease, Heart Disease/Failure, Weakness, Nausea/Vomiting, Weight Loss, Fatigue, Cough, Shortness of Breath.

## Conclusions

Patients with a LC history are more frequently diagnosed with pain, mental health disorders, and other comorbid conditions than their peers without LC; these diagnoses may affect long-term outcomes. Limitations of the study include the retrospective, cross-sectional nature of this large-scale clinical data. The data captures any recipient with a LC diagnosis in 2017, but lacks details on time since diagnosis, type of LC, stage, or treatment provided and are not adjusted for mortality.

## Implications

Many of the findings, particularly the elevated rates of pain, depression, anxiety, lung and cardiovascular co-morbidities are consistent with the findings of existing literature.<sup>1,2</sup> Future analysis of Medicare D and SEER-Medicare data may discern the impact of LC features (pathology, stage, adjuvant treatment) combined with comorbidity prevalence (pain, anxiety/depression, cardiovascular disease) on quality of life and mortality.

## References

- McFarland, D. C., Jutagir, D. R., Miller, A., & Nelson, C. (2020). Physical problem list accompanying the distress thermometer: Its associations with psychological symptoms and survival in patients with metastatic lung cancer. *Psycho-Oncology*. <https://doi.org/10.1002/pon.5367>
- Stommel, M., Kurtz, M. E., Kurtz, J. C., Given, C. W., & Given, B. A. (2004). A longitudinal analysis of the course of depressive symptomatology in geriatric patients with cancer of the breast, colon, lung, or prostate. *Health Psychology*, 23(6), 564-573. <https://doi.org/10.1037/0278-6133.23.6.564>

## Funding

Support for this work was provided by the Baltimore VA Medical Center Geriatric Research, Education, and Clinical Center and the National Institute on Aging A24 (P30 AG028747 and VA 121RX003169) and the Department of Veterans Affairs, VA Health Services Research and Development Service, VA Information Resource Center (Project Numbers SDR 02-237 and 98-004). IRB protocol approval reference: HP-00085774.

Contact: Noelle Herrier: [nherrier75@gwu.edu](mailto:nherrier75@gwu.edu)

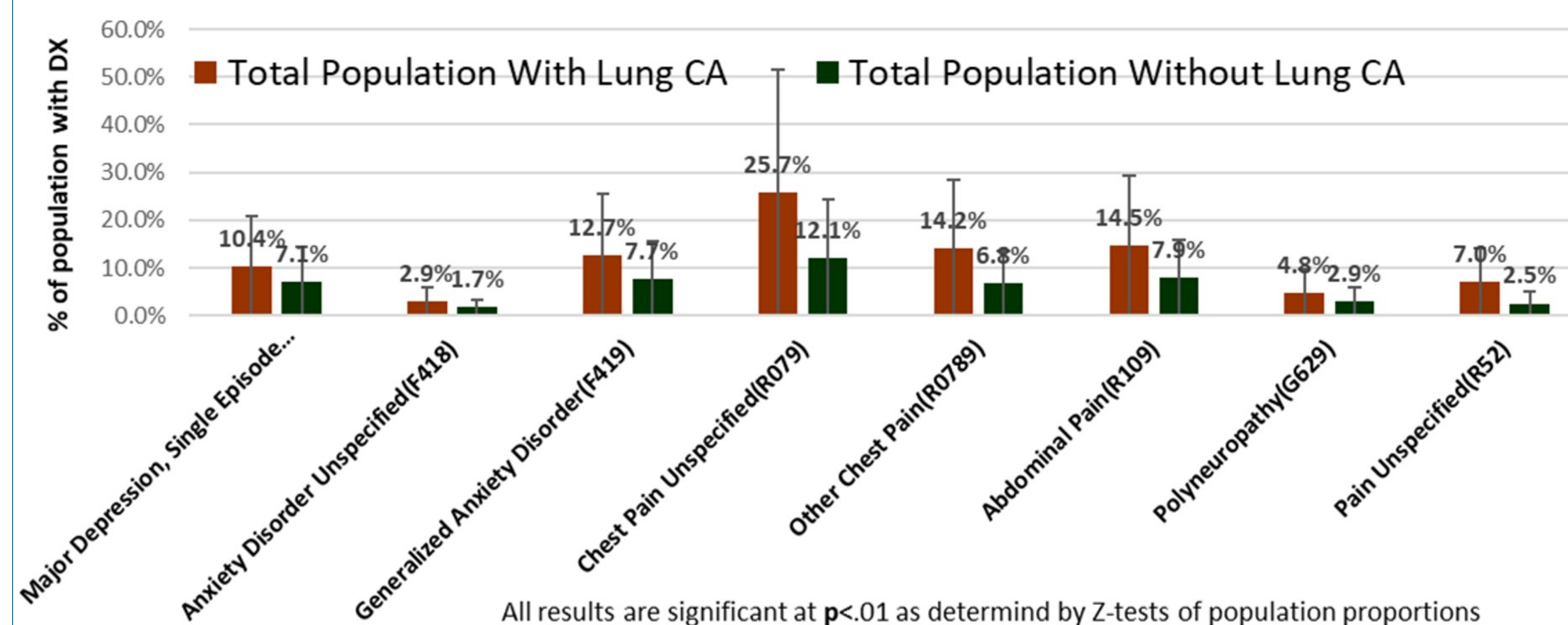
@HerrierNoelle

Number and Proportions of the 5% Carrier Claims Medicare FFS Participants with and Without Lung Cancer, By Age Cohort and Gender

	Population With Lung Cancer		Population Without Lung Cancer	
	N	%	N	%
Sample Overall	18073	1%	1460597	99%
Female	9546	52.8% (1.1%*)	843206	58%
65-75	4280	24%	420838	29%
75+	5266	29%	422368	29%
Male	8527	47.2% (1.4%*)	617391	42%
65-75	3952	22%	334176	23%
75+	4575	25%	283215	19%

Note. These are claims based point prevalence's, non-adjusted and do not substitute as incidence rates for the entire population<sup>1</sup>. \*Percentages are based on percentage of the total 5% FFS Medicare population.

Prevalence of Depression, Anxiety and Pain in Those with Lung CA, and Those Without Lung CA



All results are significant at p<.01 as determined by Z-tests of population proportions