

# LUNG CANCER SURVIVAL AMONG MALE FLORIDA CAREER AND VOLUNTEER FIREFIGHTERS

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## Introduction

- ❑ Lung cancer (LC) is a leading cause of cancer incidence and death in the United States.
- ❑ Firefighters (FF) are exposed to many known carcinogens and chemical compounds by inhalation.
- ❑ There are few epidemiologic studies of LC survivorship among career and volunteer FF.

## Methods

- ❑ Data from a population-based retrospective cohort of primary LC cases in Florida was used to evaluate survival among male FF compared to non-FF (Fig 1).
- ❑ LC specific survival (CSS) defined as time from diagnosis to LC death or last follow-up. Event-free cases at the date of last follow-up and cases who died from other causes were censored.
- ❑ Kaplan-Meier method used to estimate CSS, associations with prognostic factors assessed by log-rank test, and univariable & multivariable Cox proportional-hazard regression models were adjusted for socio-demographics, clinical, treatment-specific variables.
- ❑ Crude & adjusted hazard ratios and 95% confidence intervals were calculated for occupation (career FF, volunteer FF, non-FF).

Figure 1: Firefighter Cancer Initiative Linkage Lung Cancer Study Data

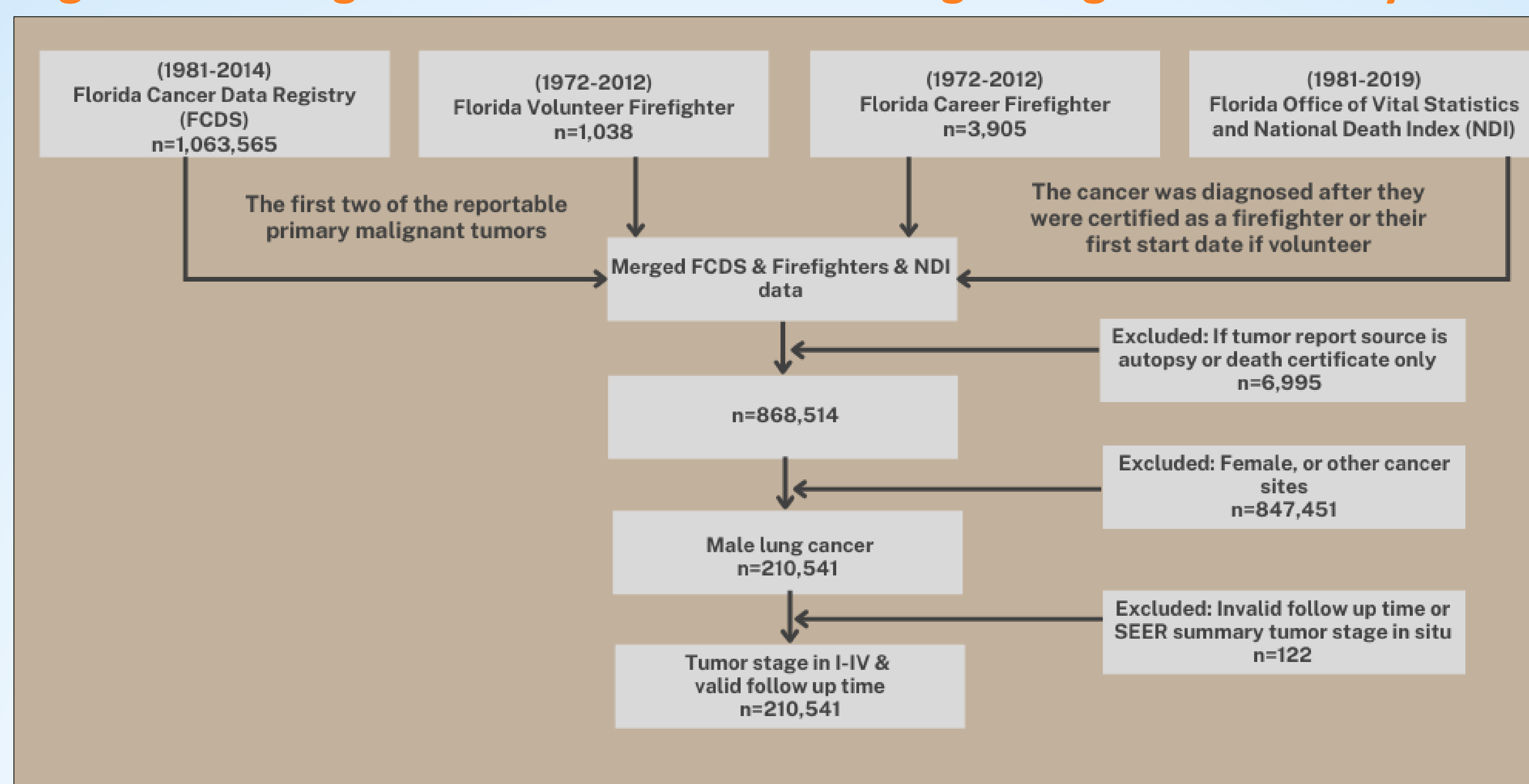


Figure 2: Cox Regression (Hazard Ratio with 95% Confidence Interval)

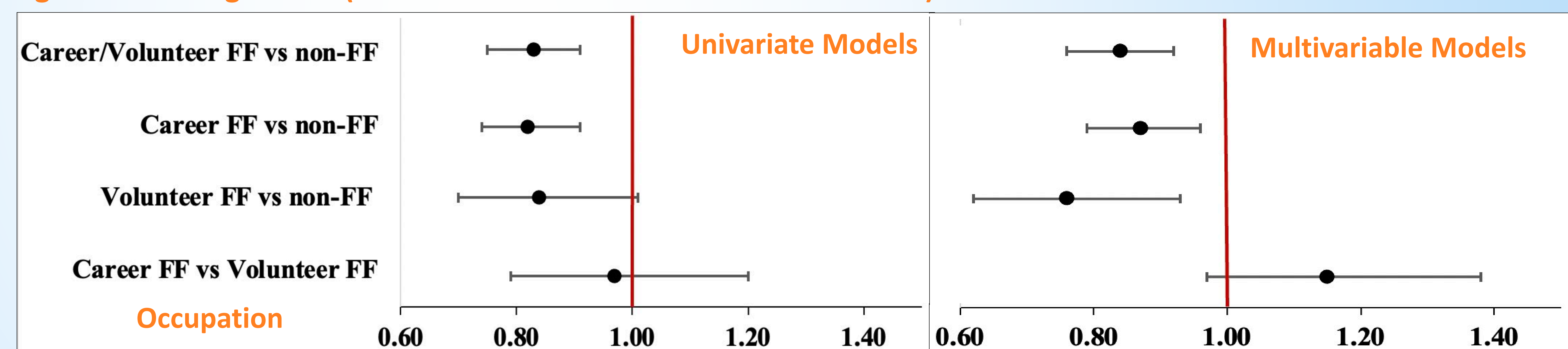
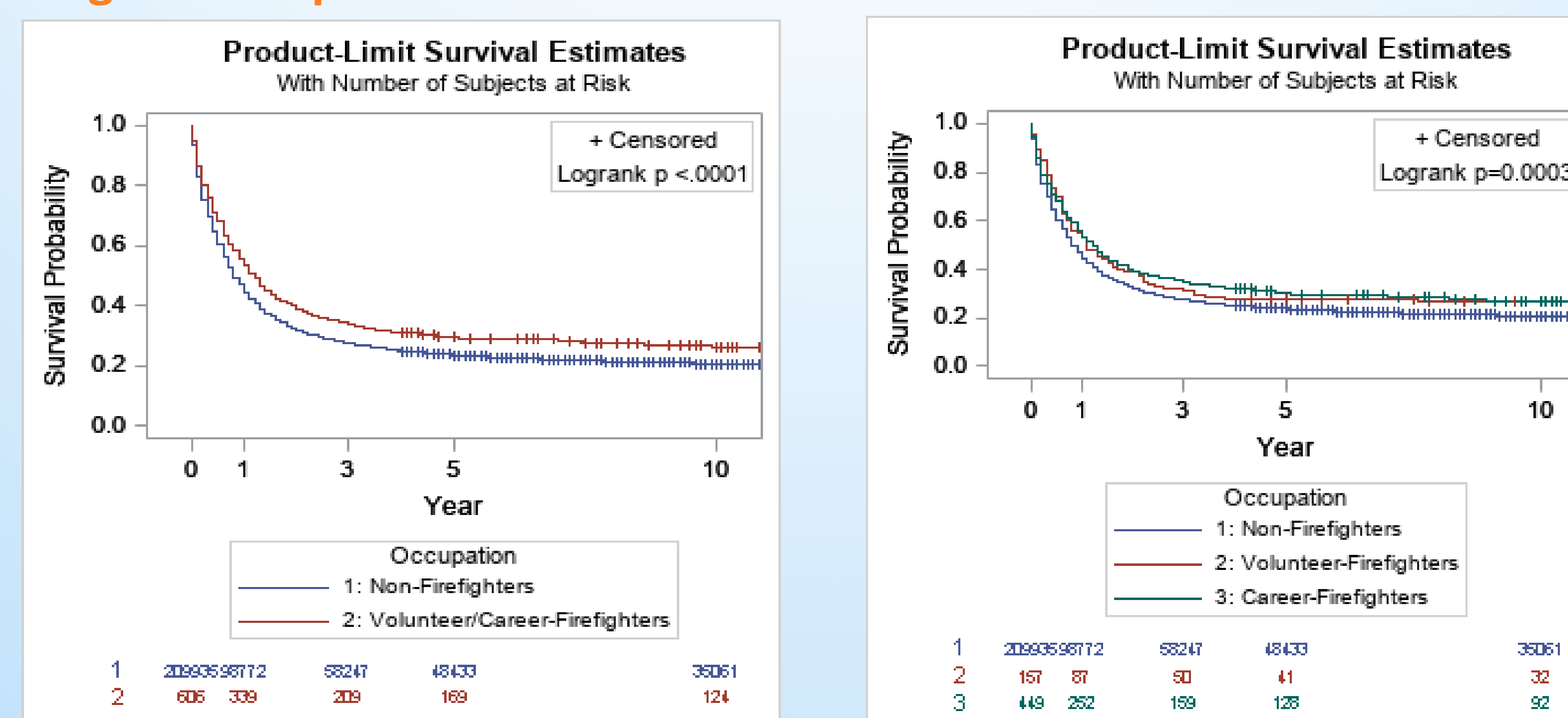


Figure 3. Kaplan-Meier Plots for Overall Survival



The Kaplan-Meier plots used all years of study data (1981-2014 for incidence cases up to 2019 for follow-up). The plots were created for the first 10-year clarity of the survival curves. Statistical analyses were performed using SAS version 9.4 (SAS Institute Inc., Cary, NC).

## Results

- ❑ Of 210,541 male LC cases, 449 were career and 157 were volunteer FF.
- ❑ LC-death was higher among volunteer FF (75.2%) than career FF (73.7%) but lower than non-FF (80%).
- ❑ Compared to non-FF, all FF, career FF, & volunteer FF had a significantly lower risk of LC-death (17%, 13%, & 24%, respectively). (Figure 2)
- ❑ There were no significant survival differences between career & volunteer FF.

## Conclusions

- ❑ Lung cancer survivorship is significantly better among FF compared to non-FF.
- ❑ These findings could be driven, in part, by a healthy worker effect.
- ❑ FF may have better access to health insurance coverage and cancer care.
- ❑ Many career and some volunteer FF have advanced medical training (e.g., EMT, paramedic), which could lead to greater involvement in, and compliance with, cancer treatment.