Figure 1S: Lung cancer progression in the MISCAN-Lung model

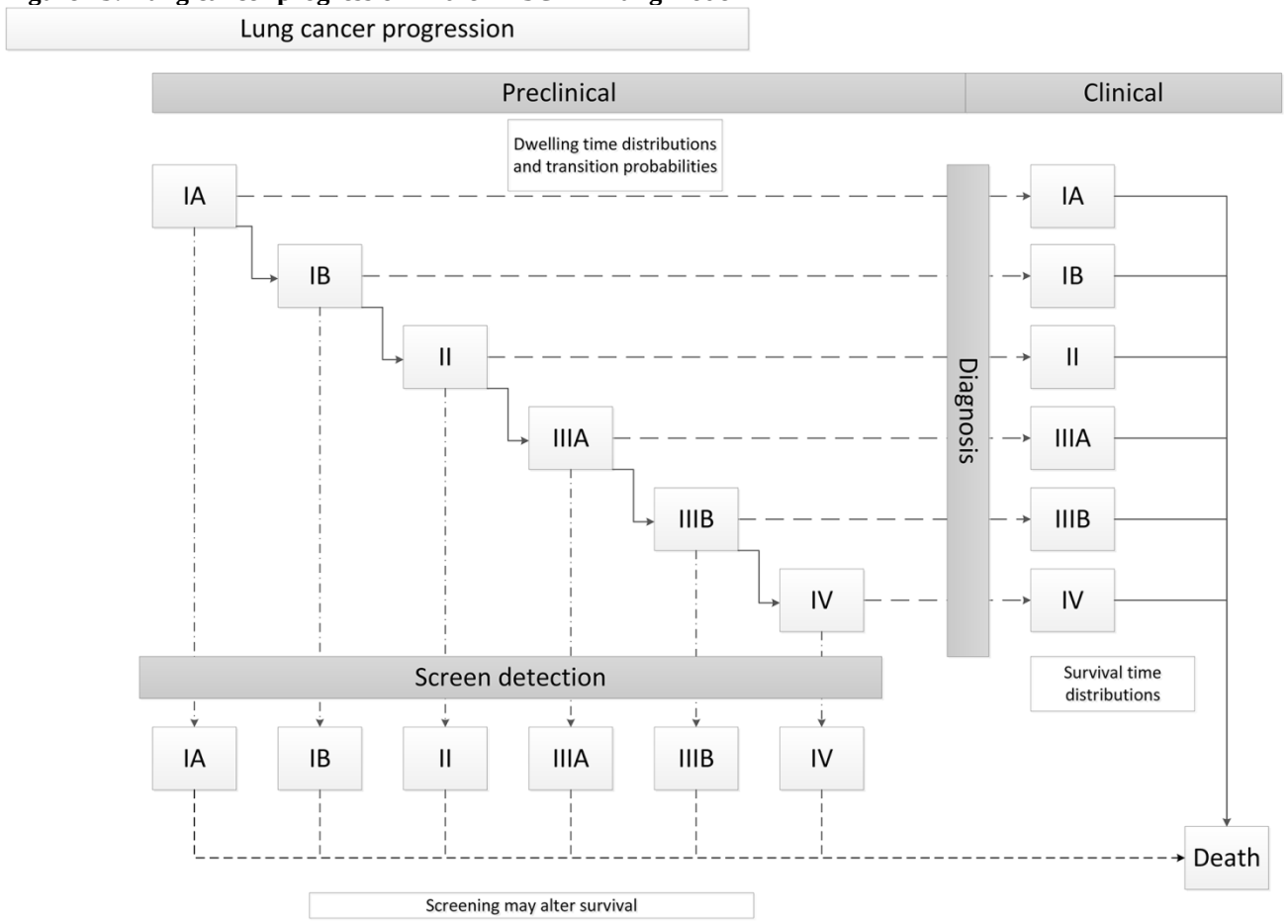

Figure notes: Once lung cancer has developed, it will progress from less advanced to more advanced preclinical stages until it is clinically detected. This process is similar for all histologies, however, the average time spent in the current state differs by histology, preclinical cancer stage and gender. The probability that a cancer progresses to a more advanced preclinical stage or is diagnosed clinically (e.g. diagnosed due to symptoms) is detailed by histology and stage in Table 1S. Screening may detect cancers in each of the preclinical screen-detectable states, depending on the sensitivity of the screening test for the specific histology and preclinical detectable state. Upon detection of lung cancer by screening, a person's life history may be altered. Detection by screening may cure a patient, allowing him to resume his normal (lung cancer free) life history. The probability of cure differs by the stage of detection and between computed tomography and chest radiography for stages IA, IB and II. After clinical detection or screen detection (without cure) the patient's duration of survival follows a histology and stage specific survival function, which is piecewise uniformly distributed. A person may also die from causes other than lung cancer. MISCAN-Lung incorporates the Smoking History Generator (SHG) application from the National Cancer Institute (NCI), which uses data on smoking habits in the U.S. population to provide probabilities for death from other causes depending on gender, smoking history and year of birth (1).

References

1. Jeon J, Meza R, Krapcho M, Clarke LD, Byrne J, Levy DT. Chapter 5: Actual and Counterfactual Smoking Prevalence Rates in the U.S. Population via Microsimulation. Risk Anal. 2012;32:S51-S68.

Figure 2S: NLST CT arm otherwise-detected lung cancers by histology and stage

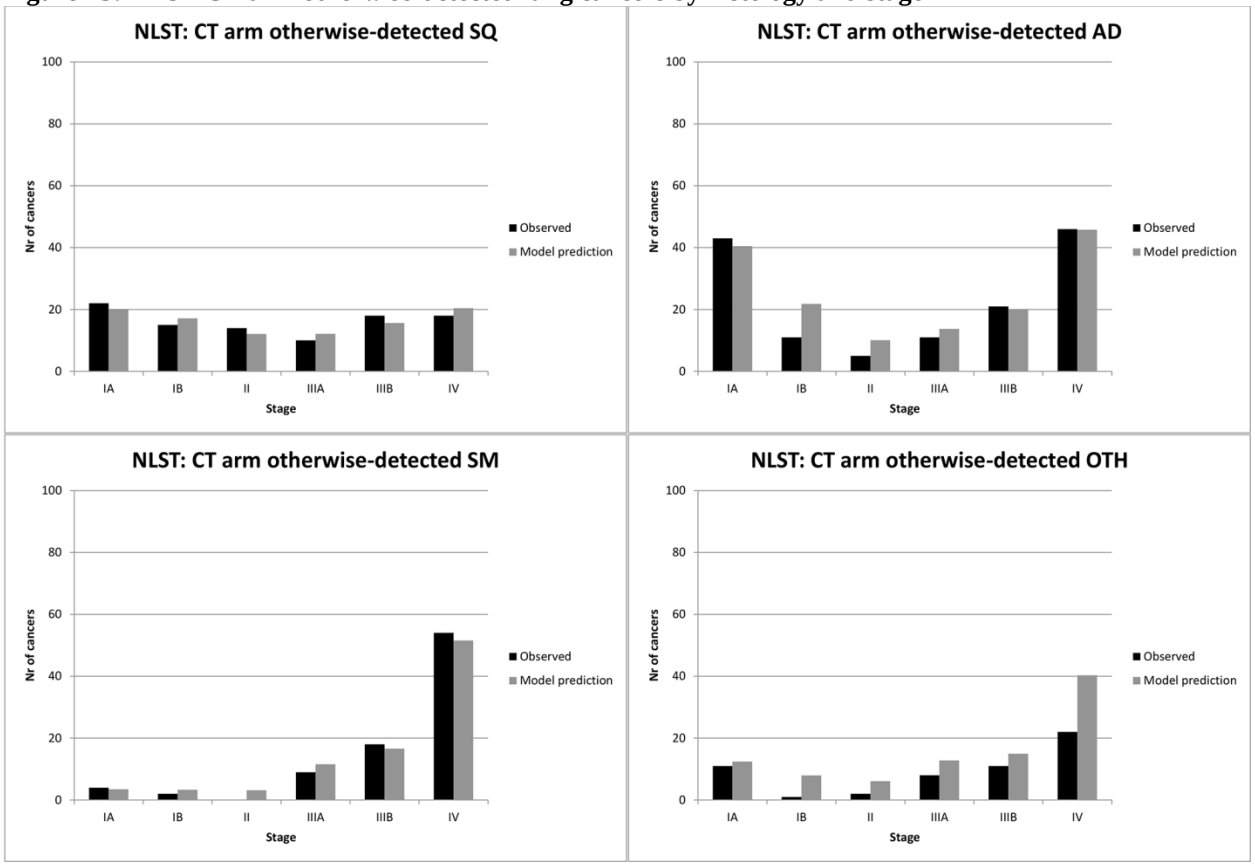

Figure notes: Abbreviations: National Lung Screening Trial (NLST), computed tomography (CT), squamous cell carcinoma (SQ), adenocarcinoma (AD), small cell carcinoma (SM) and other non-small cell carcinoma (OTH).

Figure 3S: NLST CXR arm otherwise-detected lung cancers by histology and stage

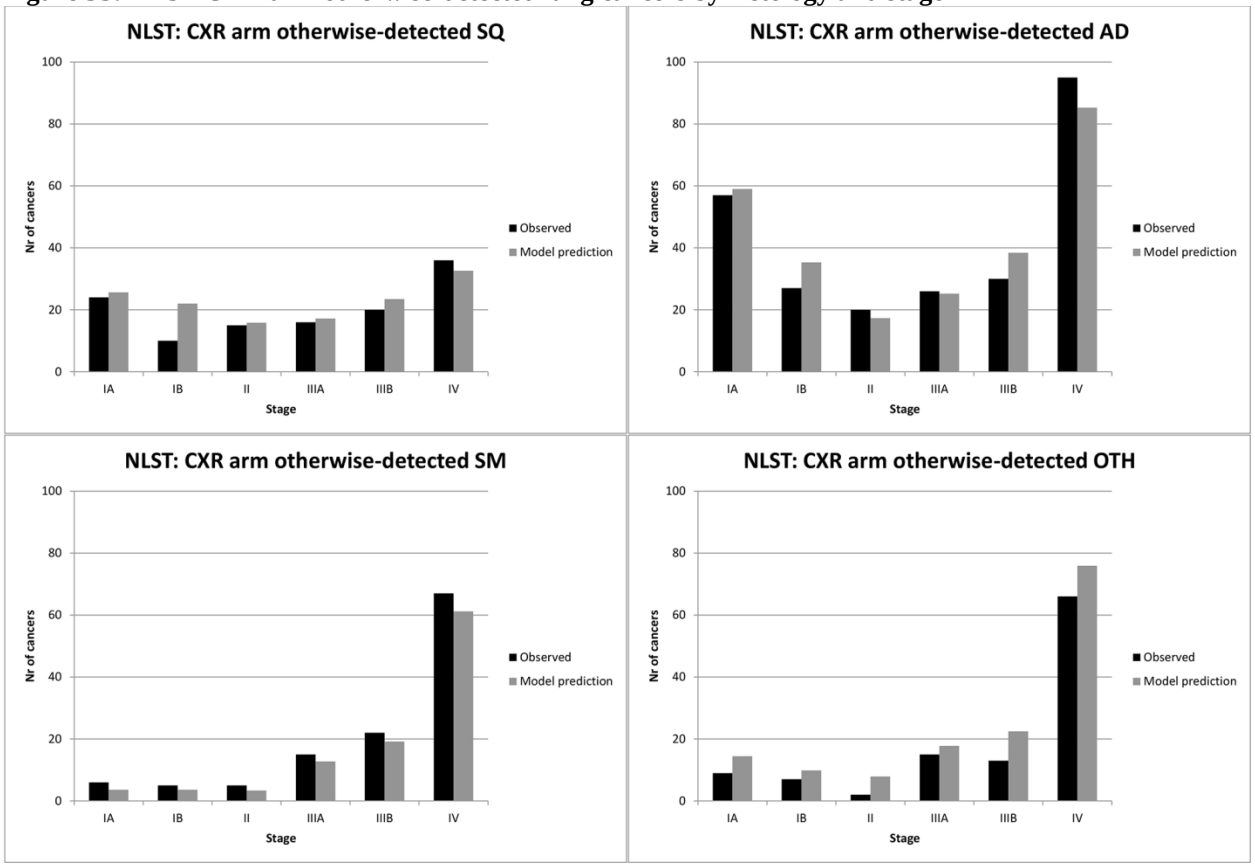

Figure notes: Abbreviations: National Lung Screening Trial (NLST), chest radiography (CXR), squamous cell carcinoma (SQ), adenocarcinoma (AD), small cell carcinoma (SM) and other non-small cell carcinoma (OTH).

Figure 4S: PLCO CXR arm otherwise-detected lung cancers by histology and stage

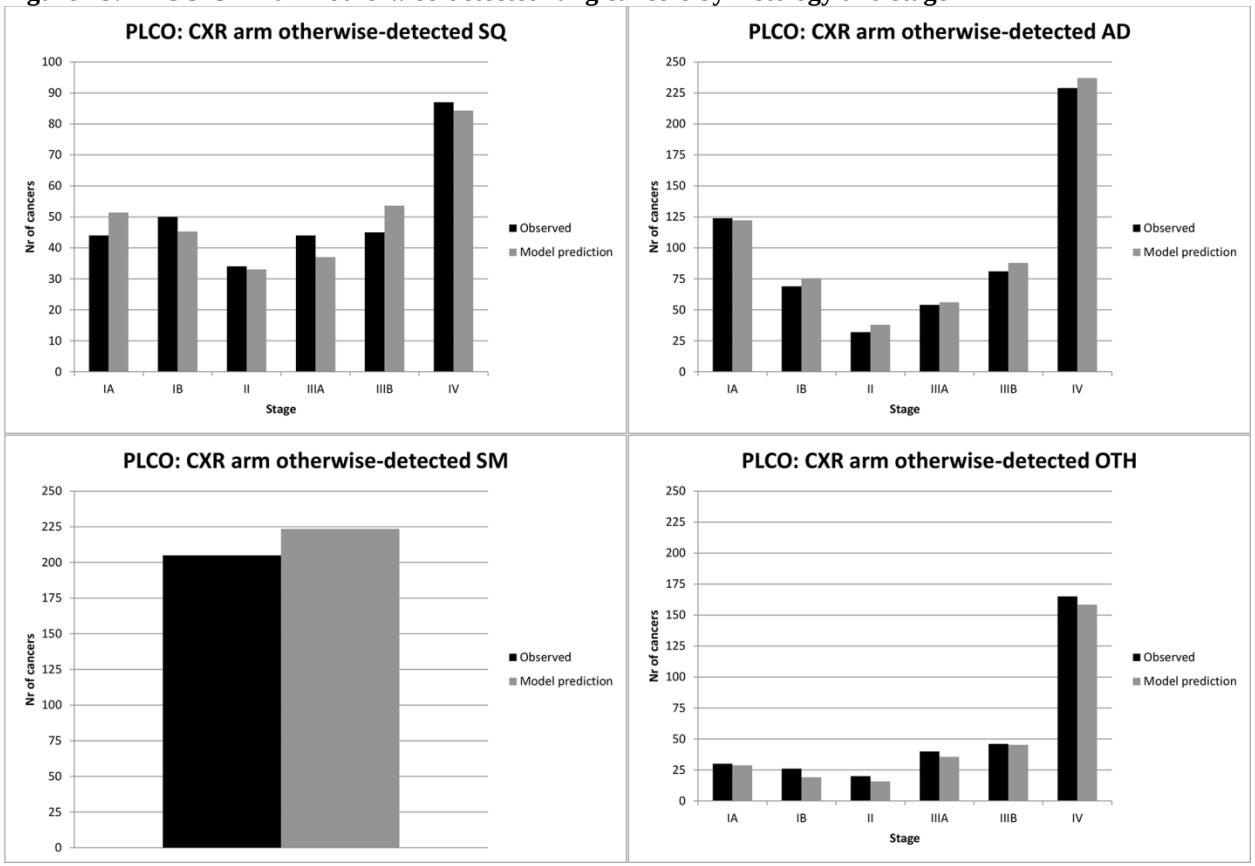

Figure notes: Abbreviations: Prostate, Lung, Colorectal and Ovarian Cancer Screening trial (PLCO), chest radiography (CXR), squamous cell carcinoma (SQ), adenocarcinoma (AD), small cell carcinoma (SM) and other non-small cell carcinoma (OTH).

Figure 5S: PLCO no-screen arm lung cancers by histology and stage

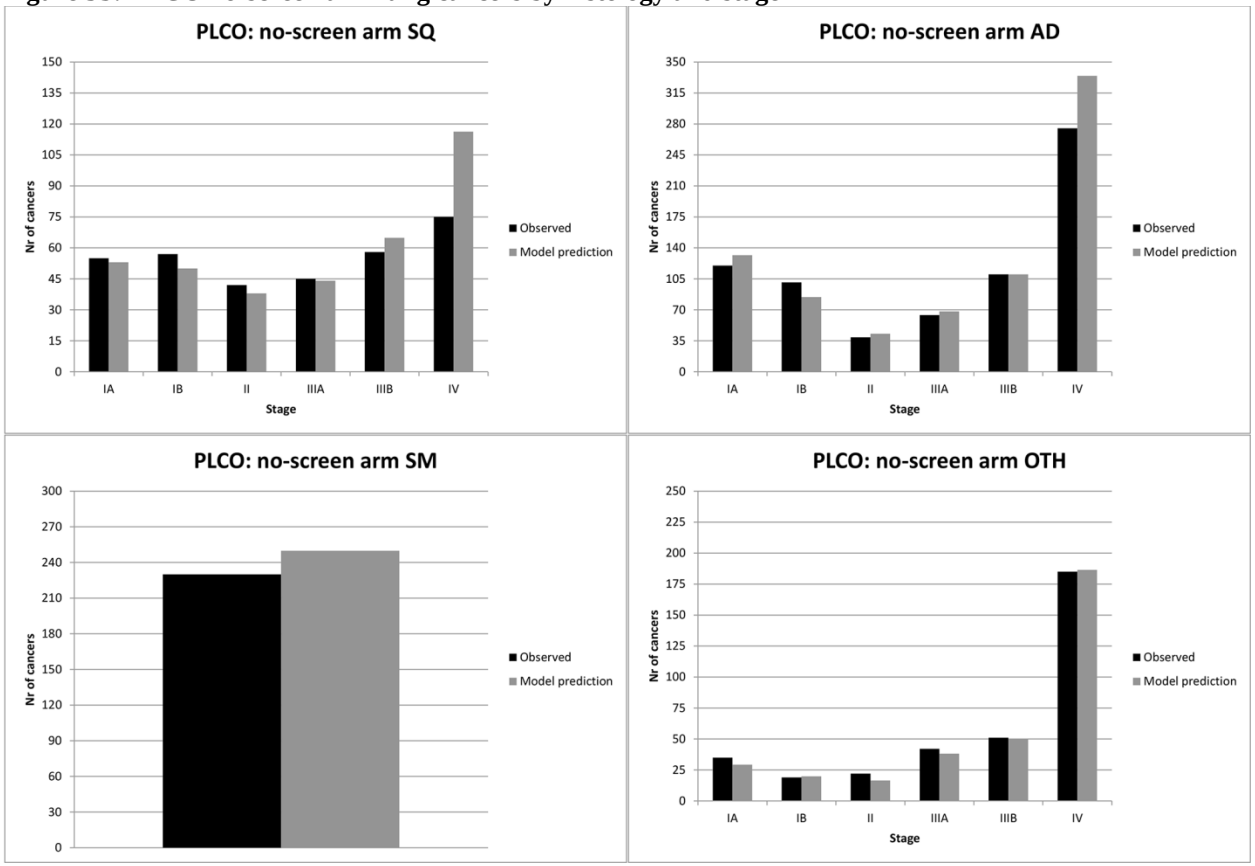

Figure notes: Abbreviations: Prostate, Lung, Colorectal and Ovarian Cancer Screening trial (PLCO), squamous cell carcinoma (SQ), adenocarcinoma (AD), small cell carcinoma (SM) and other non-small cell carcinoma (OTH).

Figure 6S: SEER-17 lung cancers in men aged 25-84 by histology and stage (years 2004-2008)

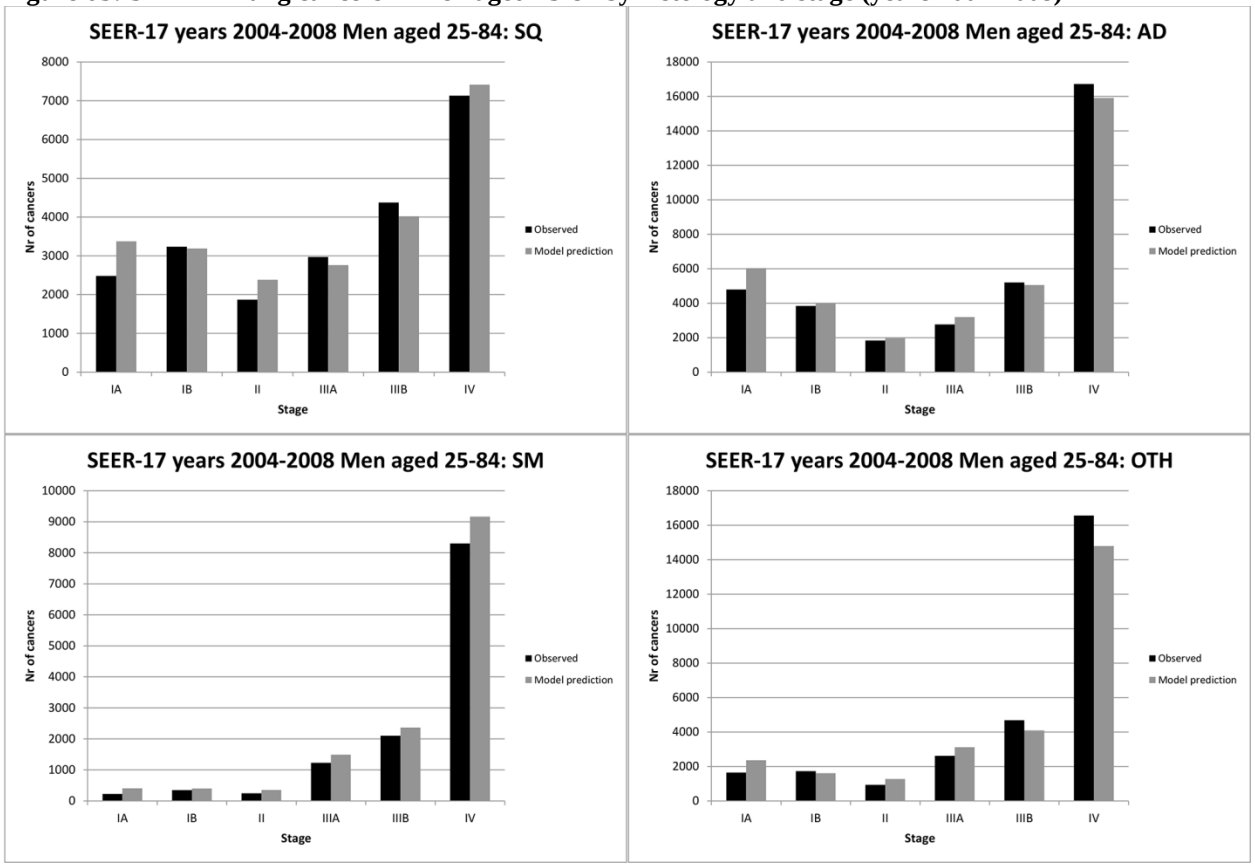

Figure notes: Abbreviations: Surveillance, Epidemiology and End Results (SEER) Program, adenocarcinoma (AD), squamous cell carcinoma (SQ), other non-small cell carcinoma (OTH) and small cell carcinoma (SM).

Figure 7S: SEER-17 lung cancers in women aged 25-84 by histology and stage (years 2004-2008)

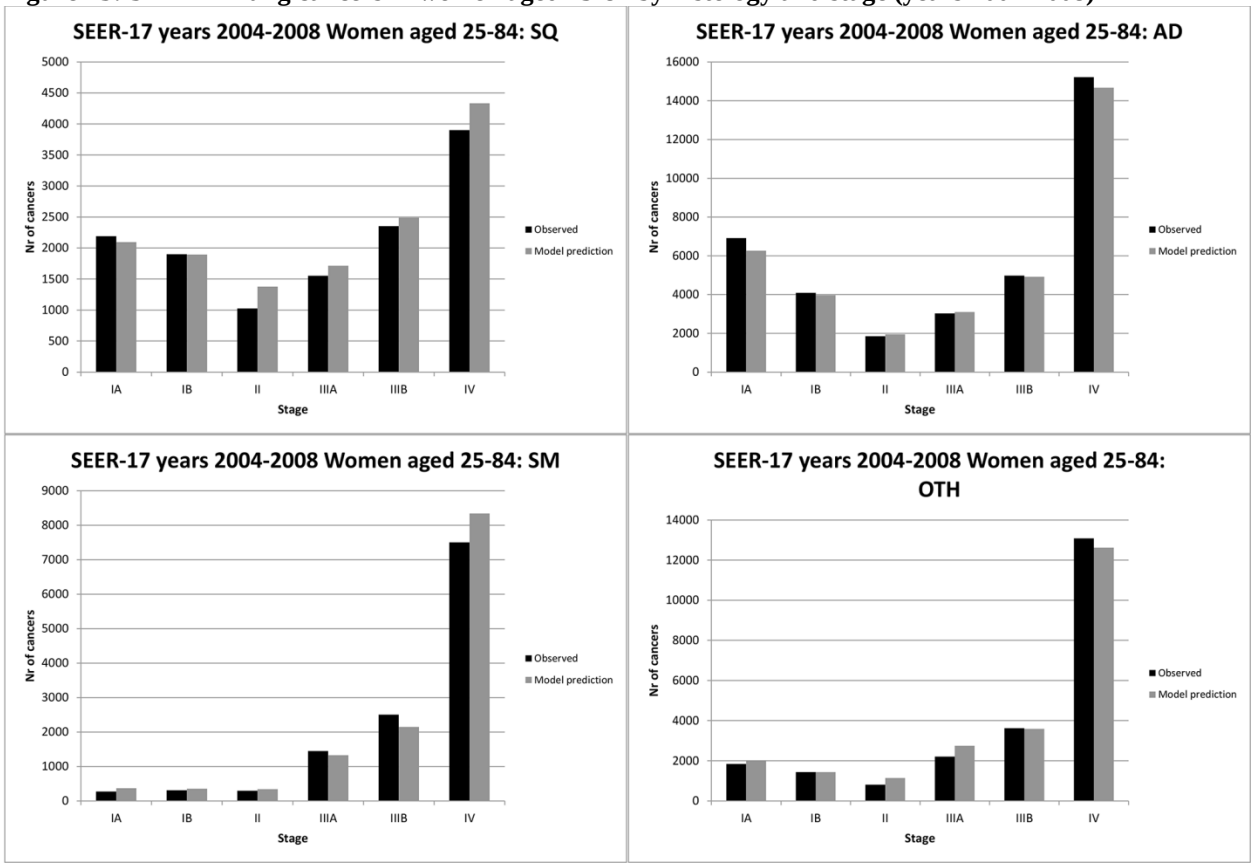

Figure notes: Abbreviations: Surveillance, Epidemiology and End Results (SEER) Program, adenocarcinoma (AD), squamous cell carcinoma (SQ), other non-small cell carcinoma (OTH) and small cell carcinoma (SM).