### INTRODUCTION AND OBJECTIVES

#### Study Design
- Simulation model that estimates overall survival (OS) for patients with advanced NSCLC in the United States from 1990 to 2015, with yearly estimates of survival among treatment groups.

#### Population and Treatments
- Adult patients with advanced NSCLC: the model predicts how OS varies by each of the first-line systemic therapies available in 1990, 2005, and 2015.

#### Model Validation
- Projected survival was validated using Surveillance Epidemiology and End Results (SEER) outcomes for analysis years where SEER outcomes are available (1990-2010).

### METHODS

#### Table 1: Market Share in NSCLC, Overall Survival Inputs, and Data Sources

<table>
<thead>
<tr>
<th>Year</th>
<th>First-Generation Platinum-Doublet</th>
<th>Second-Generation Platinum-Doublet</th>
<th>Third-Generation Platinum-Doublet</th>
<th>Targeted Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>50.0%</td>
<td>30.0%</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>2015</td>
<td>40.0%</td>
<td>40.0%</td>
<td>10.0%</td>
<td>10.0%</td>
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</tbody>
</table>

### RESULTS

#### Figure 1: Estimated advanced non-small cell lung cancer treatment mix by analytic year.
- In 1990, advanced NSCLC patients received best supportive care only. Over the subsequent 25 years, a growing proportion received first-line systemic therapy as a number of cytotoxic and targeted therapies were approved by the U.S. Food and Drug Agency (FDA).

#### Figure 2: Survival outcome validation.
- The figure displays a comparison of survival projected by the simulation model for 2010 versus SEER outcomes for patients diagnosed with non-small cell lung cancer in 2010. Similar comparisons were done for 1990-2005.

### DISCUSSION AND CONCLUSIONS

#### Our findings
- Our findings are limited by the fact that we did not also evaluate the survival impacts of new maintenance and second-line therapies—though the survival gains attributable to these therapies are likely small relative to those of first-line therapies.

#### Survival remains poor in advanced NSCLC relative to other common cancers, but the development of new first-line therapies over the past 25 years has resulted in modest per-patient survival gains, and substantial population-level life-years gains.

### REFERENCES