



## Cancer Populations USA

# Squamous-cell lung cancer in the United States, 2022-2042

## Executive Summary

Date of most recent update: **May 23, 2023**

### Contents

Summary of key findings

Patient Journey Infographic, 2022

National distribution of risk and incident cases, 2022

Contents of the full report

Further information

## Summary of key findings

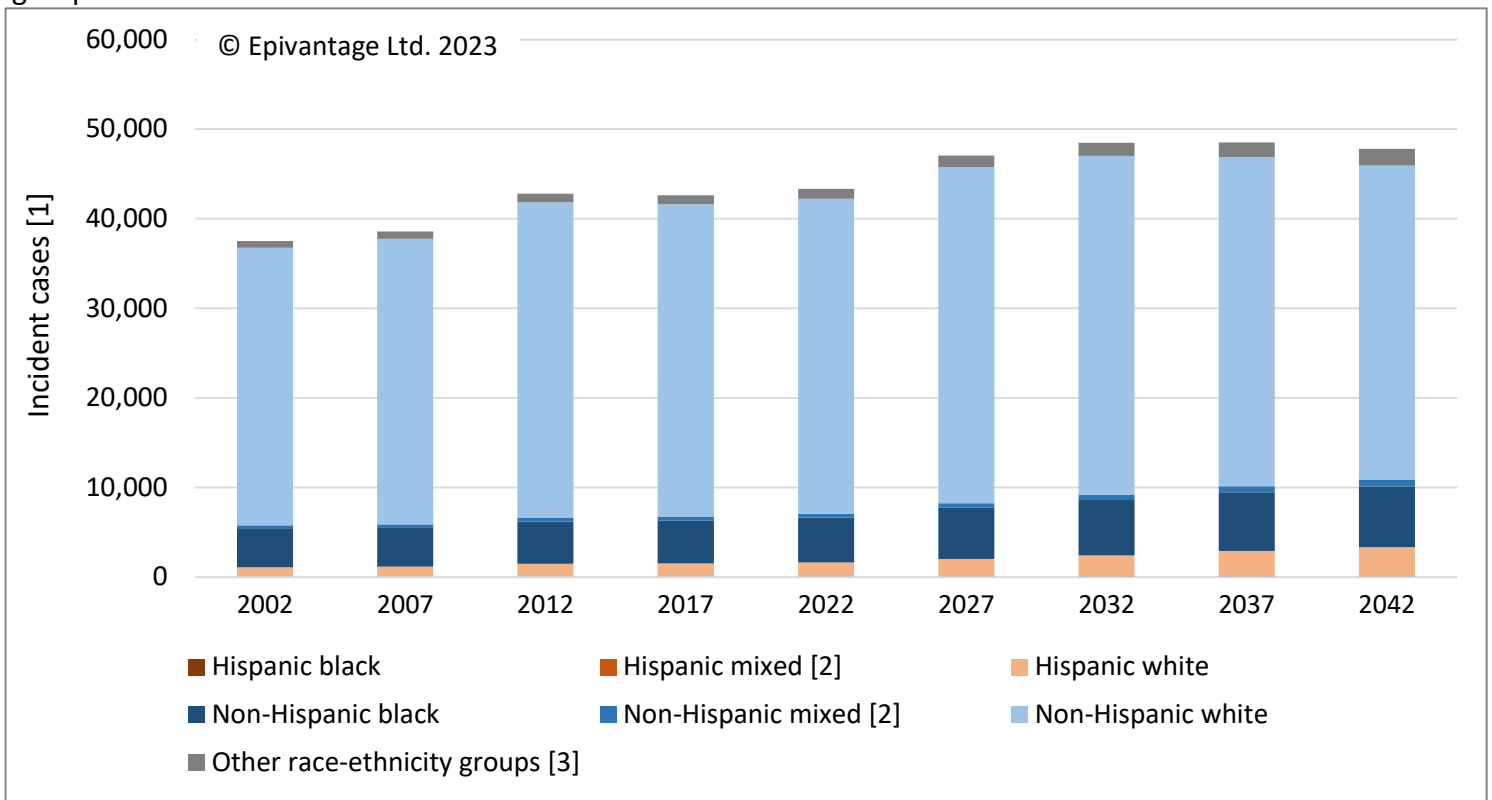
Nationally, we estimate 43,315 newly diagnosed incident cases of Squamous-cell lung cancer (SqC-LC) in 2022, of which 44% were initially diagnosed at stages of disease amenable to definitive treatment.

We estimate 34,883 advanced 1st line drug-treatable cases nationally in 2022. Of these, we estimate 21,697 (62%) are drug-treated at 1st line, and 9,527 (27%) drug-treated at 2nd line

Nationally, the number of incident cases over our 20-year forecast period will increase by 10%.

When considering trends in the risk of SqC-LC within each race-ethnicity group, according to our forecast model, the crude incidence rate across the national population will remain relatively constant, from an estimated 13.3 per 100,000 per year in 2022 to 12.6 per 100,000 per year in 2042.

Historical and forecast number of incident cases of SqC-LC in the United States 2002 to 2042, by race-ethnicity group.



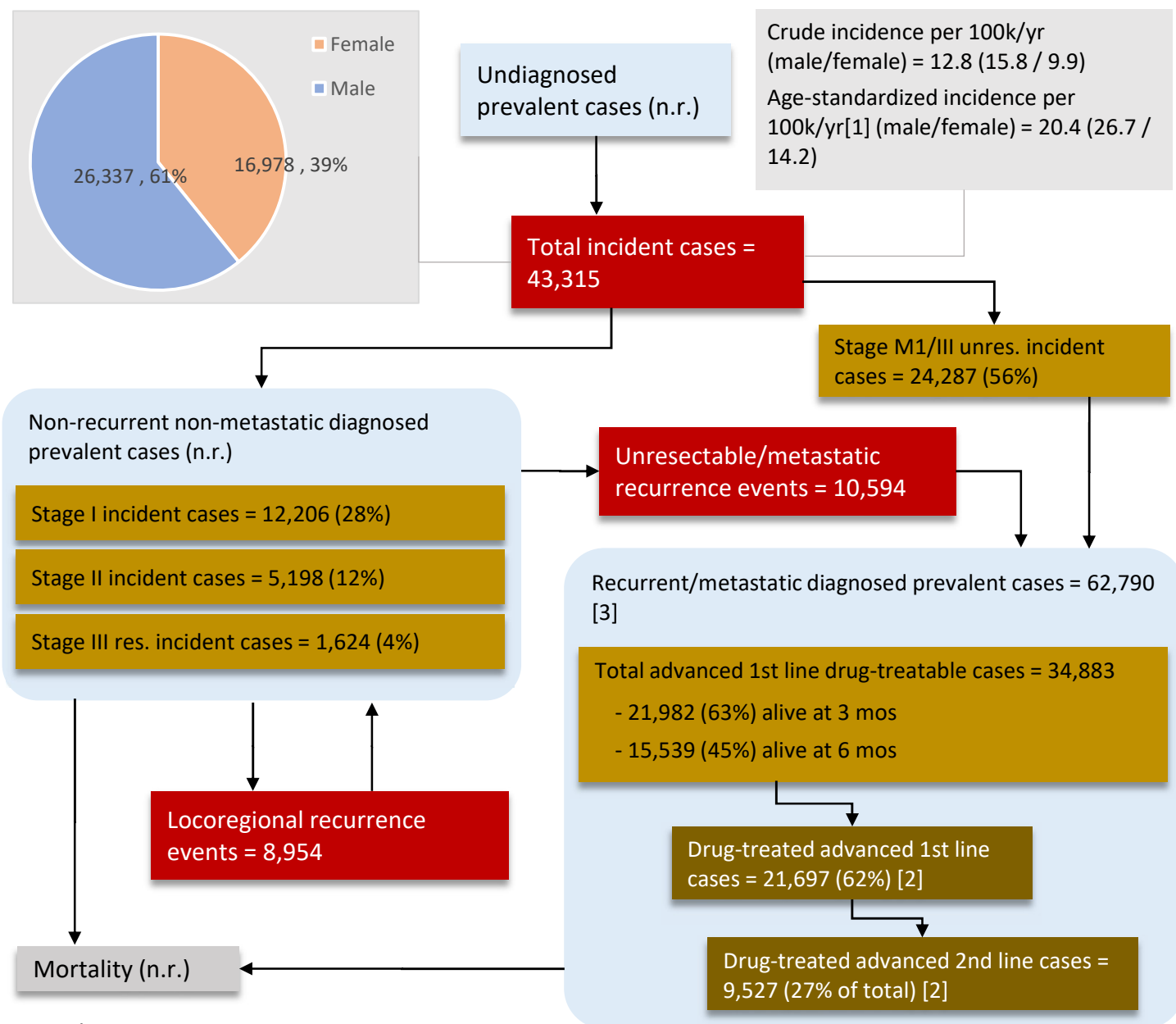
[1] incident cases refers to the number of newly diagnosed incident cases per year; [2] incident cases for mixed race groups is extrapolated from non-mixed racial group estimates within each ethnicity; [3] includes Asian, Pacific Islander, Native American and Alaskan Native race-ethnicity groups.

The age-adjusted risk of SqC-LC is highest among black non-Hispanics. The risk of SqC-LC is lower among females than in males.

## Patient Journey Infographic, 2022

The figure below depicts the size of the SqC-LC patient population in 2022 at different points in the patient journey, from diagnosis, staging, and any subsequent recurrence to advanced disease. For specific race-ethnicity groups, more granularity or for different years within the forecast period, please see the interactive version in the accompanying data dashboard.

### Patient journey of SqC-LC patients in the United States, 2022.



#### Legend

Prevalent populations	Drug-treatable populations
Incident populations	Drug-treated populations

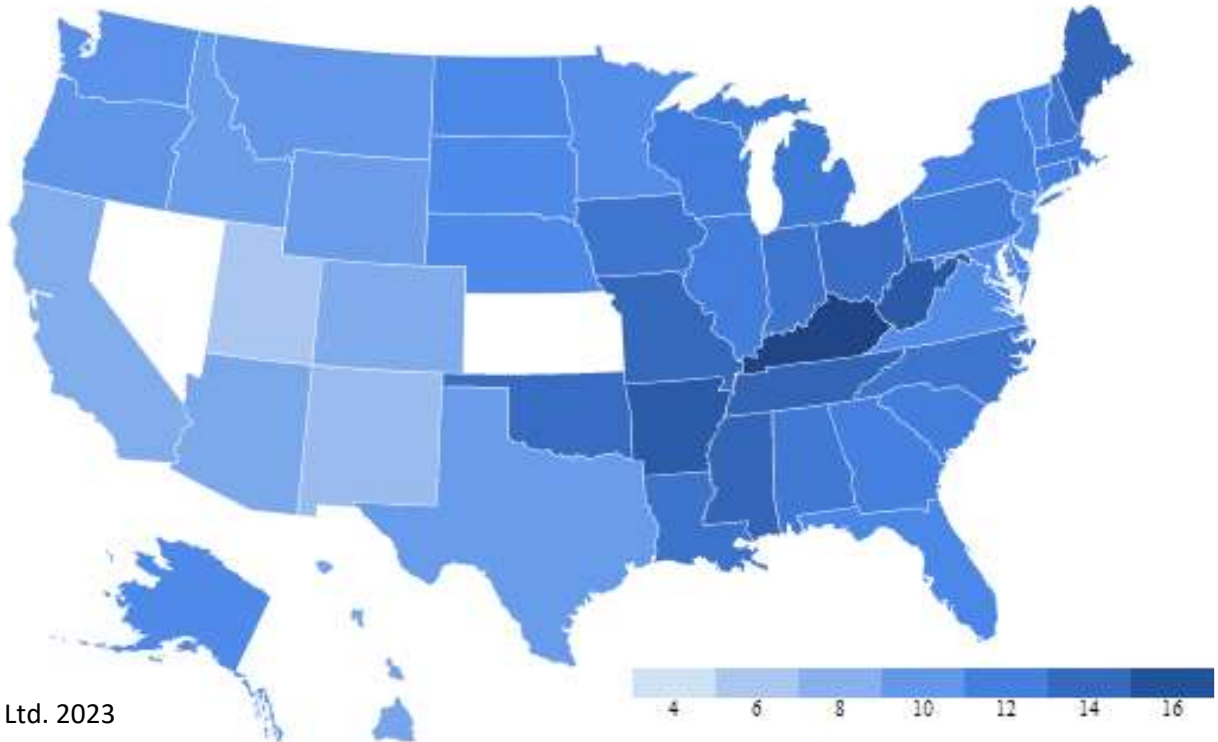
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[1] age-standardization is to an arbitrary weighting scheme that assigns equal weight to each age group. Standardized estimates to the US 2000 population are available in the main body of the report; [2] the percentage of those drug-treated in 2022 with antineoplastic drugs is based on published estimates (Maguire et al., 2019; Ryan KJ et al., 2019) and is not forecast beyond 2022, although this may be possible as a custom piece of work along with estimation of later lines of treatment and treatment patterns; contact [questions@epivantage.com](mailto:questions@epivantage.com). [3] prevalent cases estimated using the duration of unresectable/metastatic disease recorded in the MSK-MET dataset (Nguyen et al., 2022). "n.r." = not reported.

## National distribution of risk and incident cases, 2022

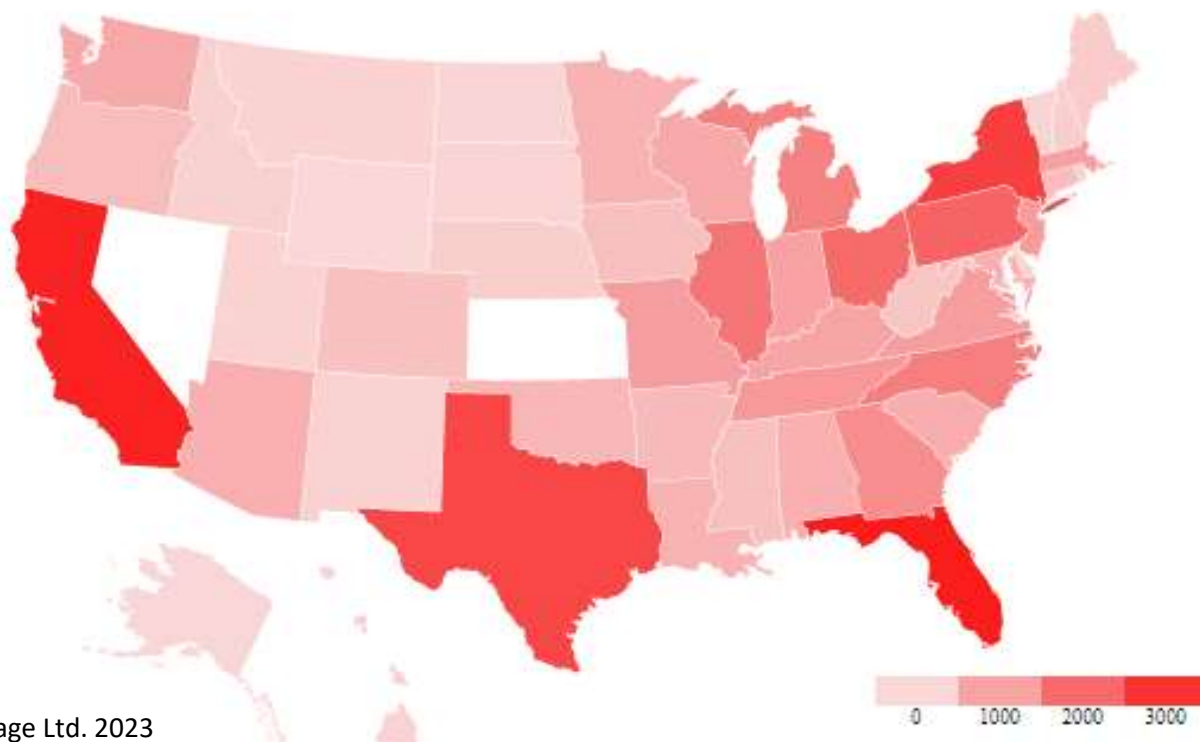
We estimate that the age-standardized risk of SqC-LC is highest in Kentucky at 16.3 per 100,000 person years per year in 2022.

### State-specific risk of SqC-LC by US state in 2022.



Although Florida does not have the highest age-standardized risk of SqC-LC, it is the state with the most newly diagnosed cases in 2022 at 3,453.

### National distribution of the number of SqC-LC incident cases by US state in 2022.



## About Epivantage and the Cancer Populations USA report series

Epivantage is an epidemiology consulting, data and insights company. The *Cancer Populations USA* report series provides detailed descriptive epidemiology estimates, forecast out to 20 years, and insights, to support clinical trial design and enrolment, market opportunity assessment and post-marketing authorization activities. For more information please visit [www.epivantage.com](http://www.epivantage.com) or email [questions@epivantage.com](mailto:questions@epivantage.com).

Cancer Populations USA is unique in routinely stratifying key cancer populations by race and ethnicity, which can be used to assess the representativeness of clinical trial populations, as well as identify areas of health inequities between different race-ethnicity population groups.

All Epivantage reports can be downloaded via the Epivantage Library for subscribers. While our coverage is extensive, it may not meet everyone's requirements. In those cases where (for example), a different case definition, or an extended forecast, is needed please contact us at [questions@epivantage.com](mailto:questions@epivantage.com) to discuss bespoke work or for any questions regarding methods and data sources.

### Methods and data sources overview

All estimates in the report are based on nationally representative datasets, such as population-based cancer registries, large epidemiological studies and published national population forecasts. Modeled estimates are based on the best practice industry methods to estimate recurrence events and, where required, make imputations and extrapolations.

Estimates in the report that are stratified by race and ethnicity use slightly broader groupings than those used by the US Census Bureau. This is to allow for sufficiently large samples to generate stable epidemiological estimates. Despite this, some patients counts are too small to be considered reliable. We suppress counts less than 5 in most cases, indicating this by "<5".

In addition to using different race-ethnicity groupings than the census, due to inconsistencies in the recording of race and ethnicity between cancer registries and the census, some extrapolations have been made. Specifically, in the case of mixed racial groups - for whom estimates are not routinely reported by population-based cancer registries - the assumption is made that the unreported parameter would be an average of each racial group within each ethnicity.

When referring to those patients that develop disease not amenable to definitive treatment with curative intent in a given year (whether initially diagnosed as such or through disease progression or recurrence following prior definitive treatment), we use the term 'advanced 1st line drug-treatable cases'.

We provide estimates for the year 2022 and forecast estimates to 2032 and 2042 in the main body of the report. Annualized forecast estimates are provided in supplementary tables at the end of the report, and also in the accompanying data dashboard, if purchased.

Stratification of incident cases by stage is based on the scheme specified by the American Joint Committee on Cancer (AJCC) 8th edition (i.e. stage groups IA, IB, IIA, IIB, IIIA, IIIB, IIIC, ). Due to small numbers, some stage groups have been aggregated in this report. Wherever possible, this has been into meaningful groupings based on recommended clinical practice (NCCN, 2023).

## Chapter headings, tables and figures contained in the full report

### Chapter headings

Case definition

2. Summary of results

3. Newly diagnosed incident cases and locoregional recurrence events

4. Advanced 1st line drug-treatable cases

5. Tumor genetics and biomarker expression

6. State-level epidemiology

7. 10 and 20 year epidemiological forecasts

8. Detailed methods

9. National population projections

10. Bibliography

11. Supplementary data tables

12. Additional support

13. Further information

### Figures included in the full report

Figure 2.1. Historical and forecast number of incident cases of SqC-LC in the United States 2002 to 2042, by race-ethnicity group.

Figure 2.2. Heat map of state-specific risk of SqC-LC by US state in 2022.

Figure 2.3. Patient journey of SqC-LC patients in the United States, 2022.

Figure 6.1. Heat map of state-specific risk of SqC-LC by US state in 2022.

Figure 6.2. Heat map of the number of SqC-LC incident cases by US state in 2022.

Figure 7.1. Historical trends in crude incidence of SqC-LC with forecast to 2042 by race-ethnicity group.

Figure 8.1. Historical trends in age-standardized incidence of SqC-LC with forecast to 2042 by race-ethnicity.

Figure 9.1. Racial and ethnic composition of the United States population in 2022 and 2042.

Figure 9.2. Changes in the proportion of the population within each race-ethnicity group that is aged 65 or over in 2022 and 2042.

Figure 9.3. Changes in the proportion of the population within each race-ethnicity group that is aged under 20 in 2022 and 2042.

### Tables (excluding those in the accompanying data dashboard)

Table 2.1. Summary incidence and survival of SqC-LC by race-ethnicity group in 2022.

Table 3.1. Newly diagnosed incident cases and incidence of SqC-LC by sex and race-ethnicity in 2022.

Table 3.2. Newly diagnosed incident cases of SqC-LC by stage at diagnosis and race-ethnicity.

Table 3.3. Stage distribution of SqC-LC incident cases by race-ethnicity in 2022.

Table 3.4. Incident cases of SqC-LC by broad age group and stage at diagnosis in 2022.

Table 3.5. Percentage distribution of incident cases of SqC-LC by broad age group and stage at diagnosis in 2022.

Table 3.6. Newly diagnosed incident cases of SqC-LC and Stage M1/III unres. incident cases by broad age group at diagnosis in 2022.

Table 3.7. Incidence and incident cases of SqC-LC by sex in 2022.

Table 3.8. Newly diagnosed incident cases of SqC-LC by anatomical tumor subsite in 2022.

Table 3.9. Isolated locoregional recurrence events among definitively treatable (stage I-III res.) SqC-LC cases in 2022.

## Tables (continued)

Table 3.10. Incident cases of SqC-LC by stage at diagnosis and histology in 2022.

Table 4.1. Advanced 1st line drug-treatable cases (1L DTCs) in 2022 and estimated annualized advanced disease risk of SqC-LC by race-ethnicity.

Table 4.2. Observed survival of incident Stage M1/III unres. SqC-LC by race-ethnicity.

Table 4.3. Advanced 1st line drug-treatable cases of SqC-LC alive at subsequent follow-up points, by race-ethnicity.

Table 5.1. Significant mutations and corresponding number of advanced 1st line drug-treatable cases of SqC-LC in 2022, 2032 and 2042.

Table 5.2. Significant gene amplifications and corresponding number of advanced 1st line drug-treatable cases of SqC-LC in 2022, 2032 and 2042.

Table 5.3. PD-L1 positive incident cases of SqC-LC in 2022, 2032 and 2042.

Table 6.1. Top ten US states and Puerto Rico ranked by incidence of SqC-LC in 2022 and associated cases.

Table 6.2. Top ten US states and Puerto Rico ranked by number of advanced 1st line drug-treatable cases of SqC-LC in 2022 and associated incidence and incident cases.

Table 7.1. Incident cases of SqC-LC by demographic and tumor characteristics at diagnosis forecast for the years 2022, 2032 and 2042.

Table 7.2. Advanced 1st line drug-treatable cases (1L DTCs) of SqC-LC by demographic characteristics at diagnosis and recurrence status forecast for the years 2022, 2032 and 2042.

Table 9.1. Population projections by race-ethnicity group in 2022 and 2042 for all ages and for those aged 65 or over over the forecast period.

Table 11.1. US states and Puerto Rico ranked by the incidence rate and number of corresponding cases of SqC-LC in 2022.

Table 11.2. US states and Puerto Rico ranked by number of advanced 1st line drug-treatable cases of SqC-LC in 2022 and associated incidence and incident cases.

Table 11.4. Annualized 20-year forecast of incident cases of SqC-LC by stage at diagnosis.

Table 11.5. 20-year forecast of advanced 1st line drug-treatable cases (1L DTCs) of SqC-LC by demographic characteristics at diagnosis and recurrence status.

## Further information

Epivantage reports and the underlying methods have been designed by Dr Mike Hughes, an epidemiologist with many years' experience in the development of epidemiological forecast models for the pharmaceutical industry. While we focus on cancer indications, comparable reports can be produced for any indication subject to availability of reliable data.

In addition to our syndicated report series, we are also able to provide consulting input into the development of custom epidemiological forecast models, selection of real world evidence (RWE) data sources for the commissioning of custom studies, the design of RWE study protocols, and support the execution of statistical analysis plans.

Our Cancer Populations USA report series covers numerous cancer indications, and can be requested on-demand for any tumor not already covered. Those tumors currently covered are listed below by tumor site. Please email [questions@epivantage.com](mailto:questions@epivantage.com) to discuss additional coverage.

### CNS, respiratory and head and neck

- Astrocytoma and glioblastoma
- Large-cell and other lung cancer
- Larynx cancer
- Lung adenocarcinoma
- Mesothelioma
- Non-small-cell lung cancer
- Non-squamous non-small-cell lung cancer
- Squamous-cell carcinoma of the pharynx and oral cavity
- Small-cell-lung cancer
- Squamous-cell carcinoma of the head and neck
- Squamous-cell carcinoma of the larynx
- Squamous-cell carcinoma of the oral cavity
- Squamous-cell carcinoma of the pharynx and overlapping areas

### Digestive and endocrine

- Adenocarcinoma of the
- Biliary tract cancer
- Cholangiocarcinoma
- Colon cancer
- Colorectal cancer
- Esophageal cancer
- Exocrine pancreatic cancer
- Gastric adenocarcinoma
- Gastroesophageal
- Gastroesophageal cancer
- Hepatocellular carcinoma
- Liver and biliary tract cancer
- Rectal cancer
- Differentiated thyroid cancer
- Neuroendocrine tumours



## Reproductive and genito-urinary

Bladder cancer  
Breast cancer (all subtypes)  
Cervical cancer  
Endometrial cancer  
HER2 positive breast cancer (HR positive or negative)  
HR negative, HER2 positive breast cancer  
HR positive breast cancer (HER2 positive or negative)  
HR positive, HER2 negative breast cancer  
HR positive, HER2 positive breast cancer  
Non-metastatic prostate cancer  
Non-muscle-invasive bladder cancer  
Ovarian cancer  
Prostate cancer  
Renal-cell carcinoma  
Squamous-cell carcinoma of the esophagus  
Triple negative breast cancer

## Hematological and lymphatic

Acute lymphoblastic leukemia  
Acute myeloid leukemia  
Acute myeloid leukemia and high-risk myelodysplastic syndromes  
B-cell non-Hodgkin's lymphoma  
Chronic myeloid leukemia  
Diffuse large B-cell lymphoma  
Follicular lymphoma  
Hodgkin's lymphoma  
Mantle-cell lymphoma  
Mucosa-associated lymphoid tissue lymphoma  
Multiple myeloma  
Myelodysplastic syndromes  
Myelofibrosis  
Non-Hodgkin's lymphoma  
Small-cell B-cell lymphoma and B-cell chronic lymphocytic leukemia  
T-cell non-Hodgkin's lymphoma

## Other

Malignant melanoma