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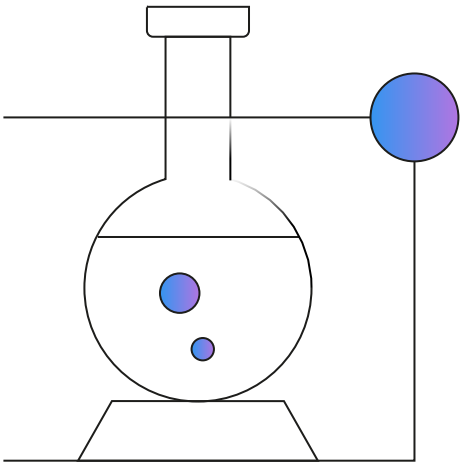
Development of a 10-year Patient Forecast Model for Rare Bone Tumors

Case Study | Rare Bone Tumors

A critical review of literature and analysis of national cancer registries to develop a risk factor-based epidemiology model in the US, EU5 and Japan



Background

Rare bone tumors are a collection of cancers with a limited, and outdated, research describing the epidemiology of this indication.

There is a requirement for the development of validated, risk factor-based models to size and forecast clinically relevant patient populations over a mid- to long-term time period.

The Challenge

The client required a critical review of the current literature and development of a risk-factor based epidemiological model to predict the evolution of key patient populations over time using data outputs from the review.

Model outputs were used to help inform a go-no-go decision for an early phase asset in the client's pipeline.

The Solution

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- A critical review of the current peer-reviewed literature, and data extraction of nationally representative cancer registries was conducted.
- Key metrics included: diagnosed incidence, diagnosed prevalence, stage at diagnosis, cause-specific survival and modifiable risk factors.
- An epidemiological model was developed using the resultant variables to enable the sizing and forecasting of clinically relevant patient populations:

  1. Age- and sex-specific diagnosed incident cases,
     - Diagnosed prevalent cases
     - Unresectable / metastatic recurrent incident cases

  2. First line drug-treatable population

  3. All estimates were calculated at the age- and sex-specific level

The Results

A high-quality suite of materials used to gain positive reimbursement

Detailed report and interactive dashboard describing a 10-year forecast of clinically relevant rare bone tumor patient populations across all countries under analysis including:

- Diagnosed incidence
- Stage at diagnosis
- Diagnosed prevalence
- Unresectable / metastatic recurrent incidence
- First line drug-treatable population

Insights generated from this analysis was used directly to inform a go-no-go decision for an early pipeline asset.

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