To estimate the **Potential Peak Sales** for vorasidenib in the specified indication (Grade 2 astrocytoma or oligodendroglioma with IDH1 or IDH2 mutations) in the US, EU5 (Germany, France, Italy, Spain, UK), China, and Japan, as well as the **$ value of a 1% share of treated patients** in these geographies, we need to follow a structured approach. Since specific data on patient populations, pricing, and penetration rates are not provided, I will make reasonable assumptions based on available epidemiology, market trends, and typical pricing for rare cancer drugs. I will also assume a 20-30% market share of treated patients as given in the query.

Step 1: Define the Target Patient Population

Vorasidenib is approved for Grade 2 astrocytoma and oligodendroglioma patients (adult and pediatric, ≥12 years) with IDH1 or IDH2 mutations post-surgery. These are rare brain tumors, and IDH mutations are present in a significant subset of these patients.

- **Epidemiology of Grade 2 Gliomas (Astrocytoma and Oligodendroglioma):**

- Grade 2 gliomas account for approximately 5-10% of all primary brain tumors.

- Incidence of primary brain tumors is ~7-8 per 100,000 people annually in developed countries (US, EU5, Japan) and slightly lower in China due to differences in reporting and diagnosis.

- Approximately 60-80% of Grade 2 astrocytomas and oligodendrogliomas harbor IDH1 or IDH2 mutations.

- **Estimated Annual Incidence of Eligible Patients (IDH-mutant Grade 2 Gliomas):**

- US: Population ~330M; brain tumor incidence ~25,000/year; Grade 2 gliomas ~2,000-2,500; IDH-mutant ~1,200-2,000 patients/year.

- EU5: Population ~260M; brain tumor incidence ~20,000/year; Grade 2 gliomas ~1,600-2,000; IDH-mutant ~1,000-1,600 patients/year.

- China: Population ~1,400M; brain tumor incidence ~80,000/year (under-diagnosed); Grade 2 gliomas ~6,000-8,000; IDH-mutant ~3,600-6,400 patients/year (assuming lower diagnosis rates).

- Japan: Population ~125M; brain tumor incidence ~9,000/year; Grade 2 gliomas ~700-900; IDH-mutant ~400-700 patients/year.

- **Prevalent Population (Treated Patients):**

Since Grade 2 gliomas have a relatively long survival (5-10 years), the prevalent population eligible for treatment (post-surgery) is larger than the incident population. Assuming a 5-year prevalence, the treatable population could be 3-5 times the annual incidence:

- US: ~6,000-10,000 patients.

- EU5: ~5,000-8,000 patients.

- China: ~18,000-32,000 patients.

- Japan: ~2,000-3,500 patients.

- **Total Treatable Population Across Geographies:** ~31,000-53,500 patients.

Step 2: Market Share of Treated Patients (20-30%)

Assuming vorasidenib captures 20-30% of the treatable population:

- **Treated Patients with Vorasidenib:**

- US: 1,200-3,000 patients (20-30% of 6,000-10,000).

- EU5: 1,000-2,400 patients (20-30% of 5,000-8,000).

- China: 3,600-9,600 patients (20-30% of 18,000-32,000).

- Japan: 400-1,050 patients (20-30% of 2,000-3,500).

- **Total Treated Patients:** 6,200-16,050 patients.

Step 3: Pricing Assumptions

Vorasidenib is a targeted therapy for a rare cancer indication, so pricing will likely be high, similar to other orphan drugs or targeted cancer therapies (e.g., $100,000-200,000 per patient per year in the US). Pricing in other regions is typically lower due to healthcare system differences:

- US: $150,000/year per patient.

- EU5: $100,000/year per patient (lower due to price negotiations).

- China: $50,000/year per patient (lower due to affordability and market access challenges).

- Japan: $120,000/year per patient (similar to US but with some discounts).

Step 4: Calculate Potential Peak Sales

Peak sales are calculated by multiplying the number of treated patients by the annual cost per patient in each geography.

- **US Peak Sales:**

- 1,200-3,000 patients * $150,000 = **$180M - $450M/year**.

- **EU5 Peak Sales:**

- 1,000-2,400 patients * $100,000 = **$100M - $240M/year**.

- **China Peak Sales:**

- 3,600-9,600 patients * $50,000 = **$180M - $480M/year**.

- **Japan Peak Sales:**

- 400-1,050 patients * $120,000 = **$48M - $126M/year**.

- **Total Potential Peak Sales Across Geographies:**

- Low end: $180M (US) + $100M (EU5) + $180M (China) + $48M (Japan) = **$508M/year**.

- High end: $450M (US) + $240M (EU5) + $480M (China) + $126M (Japan) = **$1,296M/year (~$1.3B/year)**.

Potential Peak Sales Range for Vorasidenib: $508M - $1.3B/year.

Step 5: Calculate $ Value of 1% Share of Treated Patients

First, calculate the total treatable population and the revenue per 1% of treated patients in each geography.

- **Total Treatable Population (from Step 1):**

- US: 6,000-10,000 → Average: 8,000 patients → 1% = 80 patients.

- EU5: 5,000-8,000 → Average: 6,500 patients → 1% = 65 patients.

- China: 18,000-32,000 → Average: 25,000 patients → 1% = 250 patients.

- Japan: 2,000-3,500 → Average: 2,750 patients → 1% = 27.5 patients.

- **Revenue per 1% Share:**

- US: 80 patients * $150,000 = **$12M/year**.

- EU5: 65 patients * $100,000 = **$6.5M/year**.

- China: 250 patients * $50,000 = **$12.5M/year**.

- Japan: 27.5 patients * $120,000 = **$3.3M/year**.

- **Total $ Value of 1% Share Across Geographies:**

- $12M (US) + $6.5M (EU5) + $12.5M (China) + $3.3M (Japan) = **$34.3M/year**.

Final Answer:

1. **Potential Peak Sales for Vorasidenib (20-30% Market Share):**

- US: $180M - $450M/year

- EU5: $100M - $240M/year

- China: $180M - $480M/year

- Japan: $48M - $126M/year

- **Total: $508M - $1.3B/year**

2. **$ Value of 1% Share of Treated Patients:**

- US: $12M/year

- EU5: $6.5M/year

- China: $12.5M/year

- Japan: $3.3M/year

- **Total: $34.3M/year**

Note: These estimates are based on assumptions about patient populations, pricing, and market penetration. Actual figures may vary depending on real-world diagnosis rates, market access, competition, and reimbursement policies in each region. If more specific data (e.g., trial results, exact pricing, or uptake rates) are available, these estimates can be refined further.