To estimate the **Potential Peak Sales** for fam-trastuzumab deruxtecan-nxki (Enhertu) in the specified indication (unresectable or metastatic HR-positive, HER2-low or HER2-ultralow breast cancer) in the US, EU5 (Germany, France, Italy, Spain, UK), China, and Japan, as well as the **$ value of a 1% share of treated patients**, we need to follow a structured approach. Since exact data on patient populations, pricing, and market penetration may not be publicly available in real-time, I will outline the methodology and make reasonable assumptions based on publicly available data, epidemiology, and market trends.

Step 1: Define the Target Patient Population

The target population is patients with unresectable or metastatic HR-positive, HER2-low or HER2-ultralow breast cancer who have progressed on one or more endocrine therapies in the metastatic setting. Let's estimate the eligible patient population in each geography.

- **Breast Cancer Incidence and Prevalence**: Breast cancer is one of the most common cancers globally. Approximately 60-70% of breast cancer cases are HR-positive, and among metastatic cases, a subset will be HER2-low or HER2-ultralow (estimated at 40-50% of HR-positive cases based on recent studies).

- **Metastatic Cases**: About 20-30% of breast cancer patients develop metastatic disease.

- **Progression on Endocrine Therapy**: Among metastatic HR-positive patients, a significant portion (estimated 50-70%) progress after first-line endocrine therapy and become eligible for further treatment.

Using epidemiology data and market research reports, we can estimate the approximate number of eligible patients in each region:

- **US**: ~2.3 million breast cancer cases (prevalence), with ~150,000-200,000 metastatic cases. Assuming 60% HR-positive and 50% HER2-low/ultralow, and 60% progression on endocrine therapy, eligible patients ~30,000-40,000.

- **EU5**: Combined prevalence of breast cancer is ~2.5 million. Metastatic cases ~150,000-200,000. Eligible patients (using similar proportions) ~30,000-40,000.

- **China**: Breast cancer prevalence is ~2.5 million, with a lower proportion of diagnosed metastatic cases due to healthcare access (~100,000-150,000). Eligible patients ~20,000-30,000.

- **Japan**: Prevalence ~500,000, metastatic cases ~30,000-40,000. Eligible patients ~6,000-8,000.

Total eligible patients across geographies: ~86,000-118,000.

Step 2: Estimate Treatment Rate and Market Share

- **Treatment Rate**: Not all eligible patients will receive treatment due to access, affordability, and clinical decisions. Assume 60-80% of eligible patients are treated.

- **Market Share**: Given the query assumption of 20-30% share of treated patients for Enhertu, we will use this range for peak sales estimation.

Treated patients (60-80% of eligible):

- US: 18,000-32,000

- EU5: 18,000-32,000

- China: 12,000-24,000

- Japan: 3,600-6,400

Total treated patients: 51,600-94,400.

Enhertu's share (20-30% of treated patients):

- Total patients on Enhertu: ~10,320-28,320.

Step 3: Estimate Annual Cost of Treatment

The annual cost of Enhertu varies by region due to pricing differences:

- **US**: ~$180,000-$200,000 per patient per year (based on list price and dosing).

- **EU5**: ~$100,000-$120,000 per patient per year (discounted pricing due to healthcare systems).

- **Japan**: ~$120,000-$140,000 per patient per year.

- **China**: ~$50,000-$70,000 per patient per year (lower pricing due to market dynamics and negotiations).

Using average costs for simplicity:

- US: $190,000

- EU5: $110,000

- Japan: $130,000

- China: $60,000

Step 4: Calculate Potential Peak Sales

Peak sales are calculated by multiplying the number of patients on Enhertu by the annual cost per patient in each region.

Low-End Estimate (20% market share, lower patient numbers)

- US: 3,600 patients (20% of 18,000) x $190,000 = **$684 million**

- EU5: 3,600 patients x $110,000 = **$396 million**

- China: 2,400 patients x $60,000 = **$144 million**

- Japan: 720 patients x $130,000 = **$93.6 million**

- **Total Peak Sales (Low-End)**: $684M + $396M + $144M + $93.6M = **~$1.32 billion**

High-End Estimate (30% market share, higher patient numbers)

- US: 9,600 patients (30% of 32,000) x $190,000 = **$1.82 billion**

- EU5: 9,600 patients x $110,000 = **$1.06 billion**

- China: 7,200 patients x $60,000 = **$432 million**

- Japan: 1,920 patients x $130,000 = **$249.6 million**

- **Total Peak Sales (High-End)**: $1.82B + $1.06B + $432M + $249.6M = **~$3.56 billion**

Potential Peak Sales Range: **$1.32 billion to $3.56 billion annually** across the US, EU5, China, and Japan for this indication.

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

1% of treated patients corresponds to:

- US: 180-320 patients

- EU5: 180-320 patients

- China: 120-240 patients

- Japan: 36-64 patients

Total: 516-944 patients.

Using the annual cost per patient:

- US: 180-320 x $190,000 = **$34.2M - $60.8M**

- EU5: 180-320 x $110,000 = **$19.8M - $35.2M**

- China: 120-240 x $60,000 = **$7.2M - $14.4M**

- Japan: 36-64 x $130,000 = **$4.7M - $8.3M**

- **Total $ Value of 1% Share**: $34.2M + $19.8M + $7.2M + $4.7M to $60.8M + $35.2M + $14.4M + $8.3M = **$65.9M - $118.7M**

$ Value of 1% Share of Treated Patients: **$66 million to $119 million annually**.

Key Assumptions and Limitations

1. Patient numbers are estimates based on epidemiology and literature; real-world data may differ.

2. Pricing is assumed based on publicly available information and may vary due to discounts, rebates, or negotiations.

3. Market share of 20-30% is as per the query; actual penetration depends on competition (e.g., other ADCs or therapies), physician adoption, and payer policies.

4. Treatment duration is assumed to be one year; actual duration may vary based on progression-free survival data.

Final Answer

- **Potential Peak Sales for fam-trastuzumab deruxtecan-nxki** in the specified indication across the US, EU5, China, and Japan: **$1.32 billion to $3.56 billion annually** (assuming 20-30% market share).

- **$ Value of 1% Share of Treated Patients**: **$66 million to $119 million annually** across these geographies.

If you have access to more specific data (e.g., exact patient numbers, pricing, or market share projections), I can refine these estimates further.