In 2022, with nearly 100,000 patients treated, the field exceeded 500,000 cumulative patient treatments. Pancreatic cancer is the leading cancer indication for focused ultrasound treatments in 2022. Urological and women’s health are the two body systems that have the most treatment sites with more than 500 each. This is not surprising as prostate disease and uterine fibroids were some of the earliest indications to have regulatory approval around the world.

Overview

VII. Patient Access

VII. 2 Overview
VII. 3 Treatment Highlights

Commercial Treatments
VII. 4 Sites by Region
VII. 5 Sites by Country

Patient Treatments
VII. 6 By Indication
    VII. 6 Cumulative
    VII. 7 2022
    VII. 7 Annual
VII. 8 Oncology Treatments by Indication
    VII. 8 Cumulative
    VII. 9 2022
    VII. 9 Annual

Brain Treatments by Indication
    VII. 10 Cumulative
    VII. 11 2022
    VII. 11 Annual

Other Treatments by Indication
    VII. 12 Cumulative
    VII. 13 2022

Treatment Sites
VII. 14 By Indication and Body System
VII. 15 By Indication and Region
    VII. 15 Cardiovascular
    VII. 15 Endocrine disorders
    VII. 16 Gastrointestinal
    VII. 16 Musculoskeletal
    VII. 17 Neurological
    VII. 18 Ophthalmological
    VII. 18 Urological
    VII. 19 Women’s health
Treatment Highlights

2022

A leading indication

24,000
Pancreatic cancer treatments

Body systems with the most treatment sites

568
Urological
3 indications

549
Women’s health
9 indications
In 2022 there were 32 new commercial treatment sites of which 28 were in the United States. While China remains the top country in the world for commercial treatment with 246 sites, the United States is quickly closing the gap with 196 sites.
Commercial Treatment Sites by Country

### North America

- US, Central: 80
- Eastern: 65
- Pacific: 35
- Mountain: 15
- Canada: 11
- Mexico: 9
- Other*: 4

*Cayman Islands, Cuba, Dominica, and Dominican Republic

### Europe

- France: 90
- Germany: 60
- Russian Federation: 31
- Italy: 26
- United Kingdom: 20
- Spain: 18
- Switzerland: 12
- Poland: 6
- The Netherlands: 4
- Greece: 3
- Norway: 3
- Turkey: 3
- Other*: 14

*Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Georgia, Latvia, Monaco, Portugal, Romania, and Ukraine

### Asia

- China: 246
- Japan: 50
- South Korea: 48
- Taiwan: 34
- India: 7
- Israel: 3
- Thailand: 3
- Other*: 14

*Kazakhstan, Iran, Lebanon, Malaysia, Myanmar, Philippines, Qatar, Singapore, Uzbekistan, and Vietnam
2022 was the biggest year for pancreatic cancer treatments to date with 24,000 patients treated last year.

1 The number of patient treatments reported is lower than the actual number of procedures because of incomplete reporting from manufacturers and treatment sites. Companies reporting patient treatment values this year were: Arrayus, Cardiawave, CarThera, EDAP TMS, EpiSonica, FUSMobile, Histosonics, Insightec, NaviFUS, Profound Medical, Shanghai A&S, Shenzhen PRO-HITU Medical, Sonablate, Theracision, TDsonix, and VeinSound.

2 For an expanded list of these indications, please refer to Cumulative Other Treatments by Indication, on p. VII.12.

3 For an expanded list of these indications, please refer to Cumulative Brain Treatments by Indication, on p. VII.10.
Patient Treatments by Indication—2022

98,048 total treatments

- Uterine fibroids: 25,273 (26%)
- Pancreatic tumors: 24,000 (24%)
- Liver tumors: 23,421 (24%)
- Uterine adenomyosis: 12,362 (13%)
- Prostate diseases: 6,385 (7%)
- Other2: 2,684 (3%)
- Brain3: 3,923 (4%)
- Glaucoma: —
- Cancer, unspecified: —

Annual Patient Treatments

1 The number of patient treatments reported is lower than the actual number of procedures because of incomplete reporting from manufacturers and treatment sites. Companies reporting patient treatment values this year were: Arrayus, Cardiawave, CarThera, EDAP TMS, EpiSonica, FUSMobile, Histosonics, Insightec, NaviFUS, Profound Medical, Shanghai A&S, Shenzhen PRO-HITU Medical, Sonablate, Theracion, TDOsonix, and VeinSound.

2 For an expanded list of these indications, please refer to Other Treatments by Indication, on p. VII.13.

3 For an expanded list of these indications, please refer to Brain Treatments by Indication, on p. VII.11.
Oncology Treatments by Indication—Cumulative

301,528 total treatments

- Liver tumors 121,446 (40%)
- Prostate cancer 93,232 (31%)
- Pancreatic tumors 70,246 (23%)
- Cancer, unspecified 5,560 (2%)
- Soft tissue cancer 5,137 (2%)
- Bone metastases 4,064 (1%)
- Other 1,293
- Brain tumors 550

1 Includes, in descending order of patient treatments: breast tumors, malignant; endometrial tumors; neurofibromatosis; kidney tumors; bone cancer; basal cell carcinoma; abdominal paraganglioma; hemangioma; abdominal tumors; granular cell tumors of the gluteals; Kaposi’s sarcoma; cervical tumors; sacral chordoma; schwannoma; and spleen tumors
Oncology Treatments by Indication—2022

55,386 total treatments

- Liver tumors 23,430 42%
- Prostate cancer 5,845 11%
- Pancreatic tumors 24,000 43%
- Soft tissue cancer 1,330 2%
- Bone metastases 477 1%
- Other 131 —
- Brain tumors 173 —

1 Includes, in descending order of patient treatments: endometrial tumors; glioblastoma; brain tumors, general; glioblastoma multiforme; diffuse intrinsic pontine glioma (DIPG); basal cell carcinoma; and bone cancer
Brain Treatments by Indication—Cumulative

12,340 total brain treatments

- Essential tremor 9,675 78%
- Parkinson’s disease 1,544 13%
- Brain tumors\(^1\) 550 5%
- Neuropathic pain 218 2%
- Alzheimer’s disease 152 1%
- Other movement disorders\(^2\) 91 1%
- Mental health\(^2\) 81 1%
- Other brain\(^3\) 29 —

---

1 Includes, in descending order of patient treatments: glioblastoma; brain tumors, general; astrocytoma; pontine glioma; and ganglioglioma
2 Includes, in descending order of patient treatments: epilepsy; dystonia; and dystonia, hand
3 Includes, in descending order of patient treatments: depression, obsessive compulsive disorder (OCD), and anxiety
4 Includes, in descending order of patient treatments: traumatic brain injury, and blood-brain barrier opening (safety / feasibility)
Brain Treatments by Indication—2022

3,923 total brain treatments

- Essential Tremor: 3,249 (83%)
- Parkinson’s disease: 446 (11%)
- Brain tumors\(^1\): 173 (4%)
  - Neuropathic pain: 11
  - Alzheimer’s disease: 19 (1%)
- Other movement disorders\(^2\): 23 (1%)
- Mental health\(^3\): 2
- Other: —

\(^1\) Includes, in descending order of patient treatments: glioblastoma and brain tumors, general
\(^2\) Includes, in descending order of patient treatments: dystonia, hand; epilepsy; and dystonia
\(^3\) Includes, in descending order of patient treatments: obsessive compulsive disorder (OCD)
Other Treatments by Indication—Cumulative

15,838 total treatments

- Soft tissue cancer: 5,137 (32%)
- Bone metastases: 4,064 (26%)
- Thyroid nodules: 2,057 (13%)
- Other1: 1,907 (12%)
- Varicose veins: 995 (6%)
- Breast tumors, malignant: 916 (6%)
- Arthritis, facetogenic: 438 (3%)
- Osteoid osteoma: 324 (2%)

Other indications

1 Includes, in descending order of patient treatments: breast tumors, benign; endometrial tumors; desmoid tumors; endometriosis; hypertension; heart valve calcifications; hyperparathyroidism; actinic keratosis; arthritis; dermatology research; tattoo removal; neurofibromatosis; bone tumors, benign; kidney tumors; bone cancer; basal cell carcinoma; seborrheic keratosis; vascular malformations and angiomas; painful amputation neuromas; abdominal paraganglioma; hemangioma; peripheral artery disease; Verruca vulgaris; abdominal tumors; amyotrophic lateral sclerosis; arteriovenous malformations; granular cell tumors of the gluteals; Kaposi’s sarcoma; cervical tumors; sacral chordoma; schwannoma; soft tissue tumors, benign; and spleen tumors.
Other Treatments by Indication—2022

2,684 total treatments

- Soft tissue cancer 1,330 (50%)
- Bone metastases 477 (18%)
- Thyroid nodules —
- Other 217 (8%)
- Varicose veins 550 (20%)
- Breast tumors, malignant 20 (1%)
- Arthritis, facetogenic 60 (2%)
- Osteoid osteoma 30 (1%)

1 Includes, in descending order of patient treatments: endometrial tumors, desmoid tumors, endometriosis, neurofibromatosis, heart valve calcifications, basal cell carcinoma, and Kaposi’s sarcoma
Commercial Treatment Sites by Indication and Body System*

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular sites</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Ophthalmological sites</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Neurological sites</td>
<td>179</td>
<td>13</td>
</tr>
<tr>
<td>Endocrine disorders sites</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Gastrointestinal sites</td>
<td>192</td>
<td>6</td>
</tr>
<tr>
<td>Urological sites</td>
<td>568</td>
<td>3</td>
</tr>
<tr>
<td>Musculoskeletal sites</td>
<td>248</td>
<td>8</td>
</tr>
<tr>
<td>Women’s health sites</td>
<td>549</td>
<td>9</td>
</tr>
</tbody>
</table>

Growth of Commercial Treatment Sites

<table>
<thead>
<tr>
<th></th>
<th>Neurological</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>new sites</td>
<td>23</td>
<td>28</td>
</tr>
<tr>
<td>total sites</td>
<td>179</td>
<td>196</td>
</tr>
</tbody>
</table>

The area of largest growth in 2022 was neurological sites, with 23 additional sites.

Commercial treatment additional content

For more information about specific commercial treatment sites and indications, please visit:
www.fusfoundation.org/the-technology/treatment-sites
Use the “search by disease” dropdown menu and/or location.

*Indications being performed off label in a region are shown in bold italic. A site may perform treatments on more than one indication within the same body system. Because of this, the total number of sites within a body system in the table may not equal the values provided in the summary at the top.

For more information about specific commercial treatment sites and indications, please visit: www.fusfoundation.org/the-technology/treatment-sites.
Use the "search by disease" dropdown menu and/or location.
Commercial Treatment Sites by Indication and Region

<table>
<thead>
<tr>
<th>Regions</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indications</td>
<td>N. America</td>
</tr>
<tr>
<td><strong>Cardiovascular</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Peripheral</strong></td>
<td></td>
</tr>
<tr>
<td>Arteriovenous malformations</td>
<td>1</td>
</tr>
<tr>
<td>Varicose veins</td>
<td>–</td>
</tr>
<tr>
<td><strong>Endocrine disorders</strong></td>
<td></td>
</tr>
<tr>
<td>Thyroid nodules</td>
<td>–</td>
</tr>
</tbody>
</table>

*Indications being performed off label in a region are shown in bold italic. A site may perform treatments on more than one indication within the same body system. Because of this, the total number of sites within a body system in the table may not equal the values provided in the summary at the top. For more information about specific commercial treatment sites and indications, please visit: www.fusfoundation.org/the-technology/treatment-sites. Use the "search by disease" dropdown menu and/or location.
### Commercial Treatment Sites by Indication and Region

**Gastrointestinal**

<table>
<thead>
<tr>
<th>Indications</th>
<th>N. America</th>
<th>Europe</th>
<th>Asia</th>
<th>S. America</th>
<th>Oceania</th>
<th>Africa</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastric tumors</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Liver metastases</td>
<td>–</td>
<td>–</td>
<td>2</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Liver tumors</td>
<td>2</td>
<td>8</td>
<td>126</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>137</td>
</tr>
<tr>
<td>Pancreatic tumors</td>
<td>–</td>
<td>–</td>
<td>41</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>41</td>
</tr>
<tr>
<td>Pancreatic tumors, benign</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Pancreatic tumors, malignant</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>9</td>
</tr>
</tbody>
</table>

**Musculoskeletal**

<table>
<thead>
<tr>
<th>Indications</th>
<th>N. America</th>
<th>Europe</th>
<th>Asia</th>
<th>S. America</th>
<th>Oceania</th>
<th>Africa</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis, facetogenic</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>4</td>
</tr>
<tr>
<td>Bone cancer</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>8</td>
</tr>
<tr>
<td>Bone metastases</td>
<td>6</td>
<td>14</td>
<td>5</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>27</td>
</tr>
<tr>
<td>Bone tumors, benign</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Desmoid tumors</td>
<td>4</td>
<td>5</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Osteoid osteoma</td>
<td>5</td>
<td>11</td>
<td>85</td>
<td>–</td>
<td>1</td>
<td>1</td>
<td>103</td>
</tr>
<tr>
<td>Soft tissue cancer</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>Soft tissue tumors, benign</td>
<td>1</td>
<td>5</td>
<td>85</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>92</td>
</tr>
</tbody>
</table>

*Indications being performed off label in a region are shown in bold italic. A site may perform treatments on more than one indication within the same body system. Because of this, the total number of sites within a body system in the table may not equal the values provided in the summary at the top.

For more information about specific commercial treatment sites and indications, please visit: www.fusfoundation.org/the-technology/treatment-sites.

Use the "search by disease" dropdown menu and/or location.
### Commercial Treatment Sites by Indication and Region

<table>
<thead>
<tr>
<th>Indications</th>
<th>Regions</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N. America</td>
<td>Europe</td>
</tr>
<tr>
<td><strong>Neurological</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Movement disorder</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dystonia</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Dystonia, hand</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Essential tremor</td>
<td>51</td>
<td>25</td>
</tr>
<tr>
<td>Parkinson’s disease, dyskinesia</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Parkinson’s disease, tremor</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td><strong>Neurodegenerative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alzheimer’s disease</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Pain</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuropathic pain</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Trigeminal neuralgia</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td><strong>Psychiatric</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Obsessive-compulsive disorder</td>
<td>1</td>
<td>–</td>
</tr>
</tbody>
</table>

*Indications being performed off label in a region are shown in bold italic. A site may perform treatments on more than one indication within the same body system. Because of this, the total number of sites within a body system in the table may not equal the values provided in the summary at the top.

For more information about specific commercial treatment sites and indications, please visit: [www.fusfoundation.org/the-technology/treatment-sites](http://www.fusfoundation.org/the-technology/treatment-sites).

Use the "search by disease" dropdown menu and/or location.
## Commercial Treatment Sites by Indication and Region

### Ophthalmological

<table>
<thead>
<tr>
<th>Indications</th>
<th>N. America</th>
<th>Europe</th>
<th>Asia</th>
<th>S. America</th>
<th>Oceania</th>
<th>Africa</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaucoma</td>
<td>–</td>
<td>14</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>14</td>
</tr>
</tbody>
</table>

### Urological

<table>
<thead>
<tr>
<th>Indications</th>
<th>N. America</th>
<th>Europe</th>
<th>Asia</th>
<th>S. America</th>
<th>Oceania</th>
<th>Africa</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benign prostatic hyperplasia</td>
<td>14</td>
<td>6</td>
<td>25</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>45</td>
</tr>
<tr>
<td>Kidney tumors</td>
<td>1</td>
<td>4</td>
<td>85</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>91</td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>171</td>
<td>210</td>
<td>41</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>432</td>
</tr>
</tbody>
</table>

*Indications being performed off label in a region are shown in bold italic. A site may perform treatments on more than one indication within the same body system. Because of this, the total number of sites within a body system in the table may not equal the values provided in the summary at the top.

For more information about specific commercial treatment sites and indications, please visit: [www.fusfoundation.org/the-technology/treatment-sites](http://www.fusfoundation.org/the-technology/treatment-sites).

Use the "search by disease" dropdown menu and/or location.
Commercial Treatment Sites by Indication and Region* continued

<table>
<thead>
<tr>
<th>Indications</th>
<th>N. America</th>
<th>Europe</th>
<th>Asia</th>
<th>S. America</th>
<th>Oceania</th>
<th>Africa</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women’s health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast tumors, benign</td>
<td>–</td>
<td>10</td>
<td>3</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>13</td>
</tr>
<tr>
<td>Breast tumors, malignant</td>
<td>1</td>
<td>6</td>
<td>89</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>96</td>
</tr>
<tr>
<td>Cervicitis</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Endometrial tumors</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>–</td>
<td>2</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>Lichen sclerosis</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Urinary incontinence, stress</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Uterine adenomyosis</td>
<td>3</td>
<td>7</td>
<td>101</td>
<td>–</td>
<td>2</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>Uterine fibroids</td>
<td>11</td>
<td>32</td>
<td>270</td>
<td>–</td>
<td>2</td>
<td>–</td>
<td>4</td>
</tr>
</tbody>
</table>

*Indications being performed off label in a region are shown in bold italic. A site may perform treatments on more than one indication within the same body system. Because of this, the total number of sites within a body system in the table may not equal the values provided in the summary at the top.

For more information about specific commercial treatment sites and indications, please visit: www.fusfoundation.org/the-technology/treatment-sites.

Use the "search by disease" dropdown menu and/or location.