

2023

Patient Access

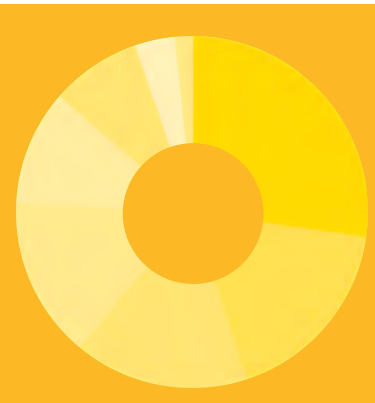


FOCUSED
ULTRASOUND
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Overview

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.



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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



Commercial Treatment Sites by Region

Number of Sites

2022

932

Commercial Treatment Sites

219

North America

25% Annual Growth from 2013–2022

290

Europe

4% Annual Growth from 2013–2022

405

Asia

12% Annual Growth from 2013–2022

7

South America

4% Annual Growth from 2013–2022

4

Oceania

19% Annual Growth from 2013–2022

7

Africa

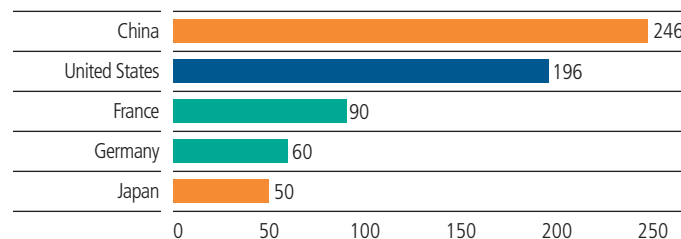
15% Annual Growth from 2013–2022

Top Countries

2022

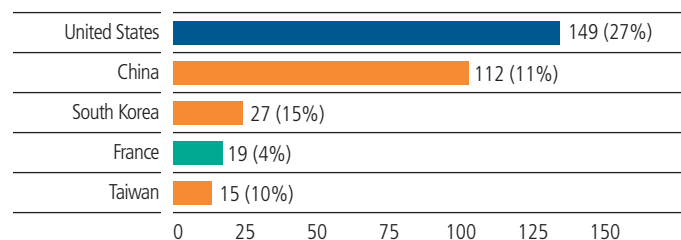
Top Countries for Treatment

Number of sites



Top Countries with Commercial Treatment Growth

Sites added, cumulative 2017 to 2022



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.

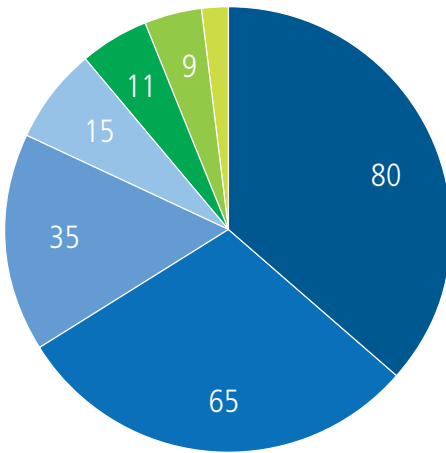


Commercial Treatment Sites by Country

North America

219

Treatment Sites



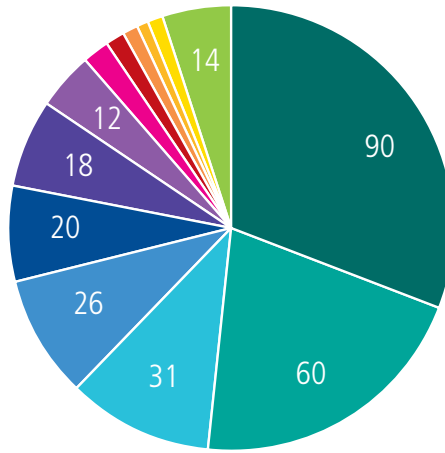
US, Central	80
US, Eastern	65
Pacific	35
Mountain	15
Canada	11
Mexico	9
Other*	4

*Cayman Islands, Cuba, Dominica, and Dominican Republic

Europe

290

Treatment Sites



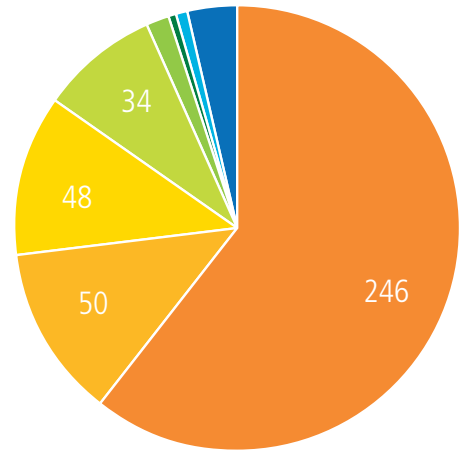
France	90
Germany	60
Russian Federation	31
Italy	26
United Kingdom	20
Spain	18
Switzerland	12
Poland	6
The Netherlands	4
Greece	3
Norway	3
Turkey	3
Other*	14

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

Asia

405

Treatment Sites



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

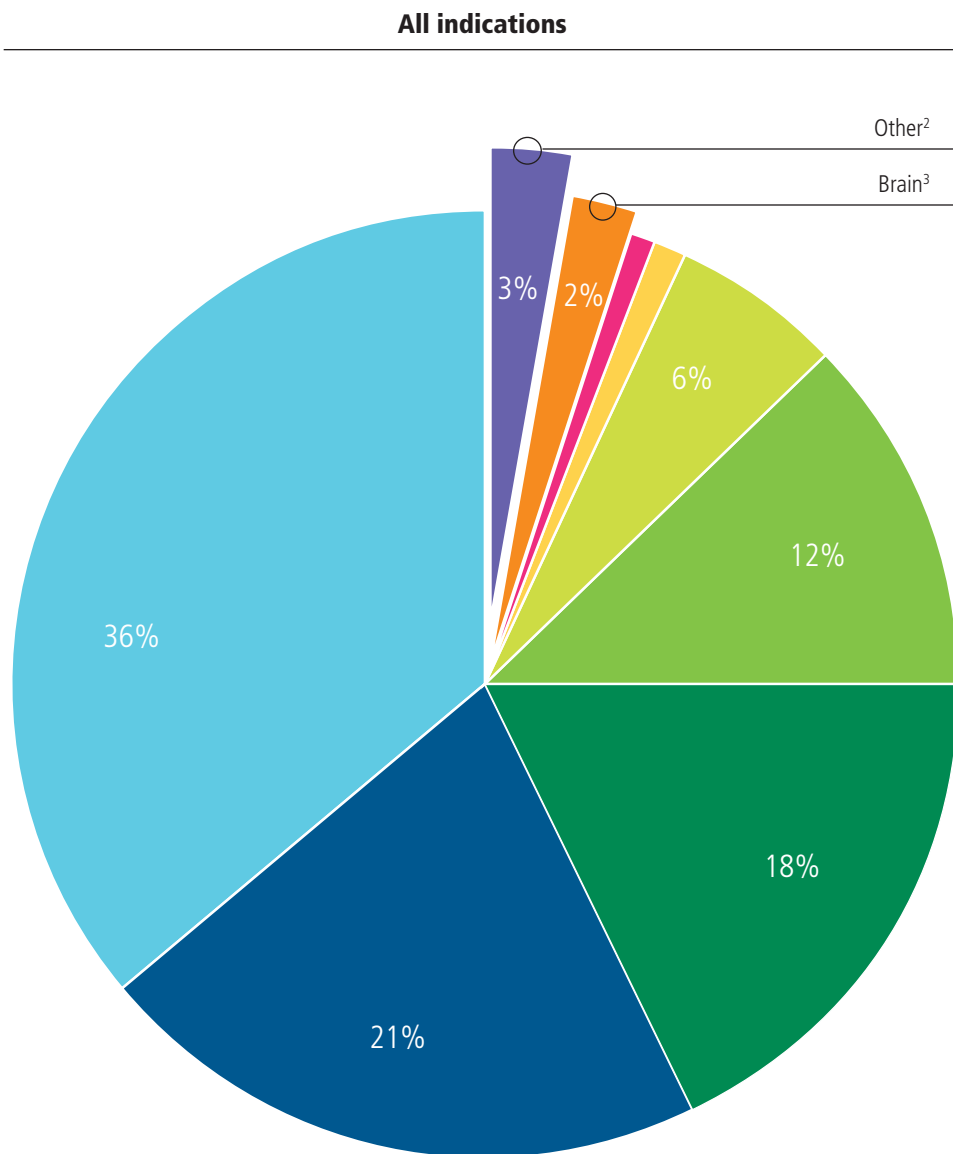
*Kazakhstan, Iran, Lebanon, Malaysia, Myanmar, Philippines, Qatar, Singapore, Uzbekistan, and Vietnam

Patient Treatments by Indication—Cumulative

565,210 total treatments¹

Uterine fibroids	201,084	36%
Liver tumors	121,435	21%
Prostate diseases	99,010	18%
Pancreatic tumors	70,246	12%
Uterine adenomyosis	33,518	6%
Other ²	15,838	3%
Brain ³	12,340	2%
Glaucoma	6,179	1%
Cancer, unspecified	5,560	1%

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, Theraclion, TOOsonix, and VeinSound.

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

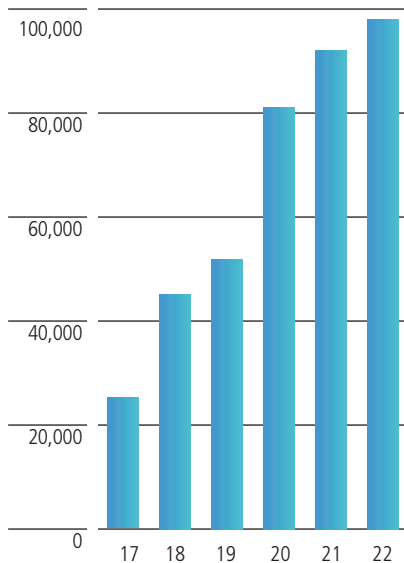
³ For an expanded list of these indications, please refer to Cumulative Brain Treatments by Indication, on p. VII.10.

Patient Treatments by Indication—2022

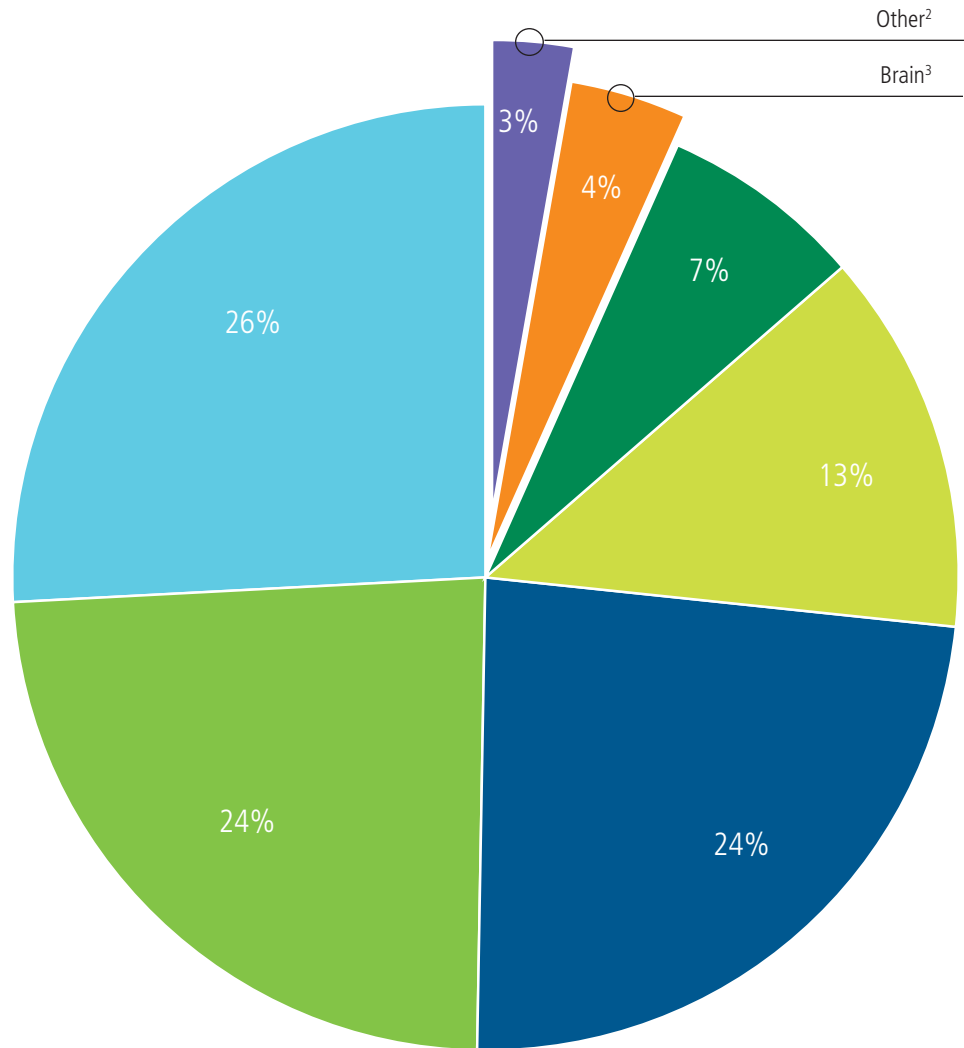
98,048 total treatments¹

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%
Other ²	2,684	3%
Brain ³	3,923	4%
— Glaucoma	—	—
— Cancer, unspecified	—	—

Annual Patient Treatments



All indications



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, Theraclion, TOOsonix, and VeinSound.

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

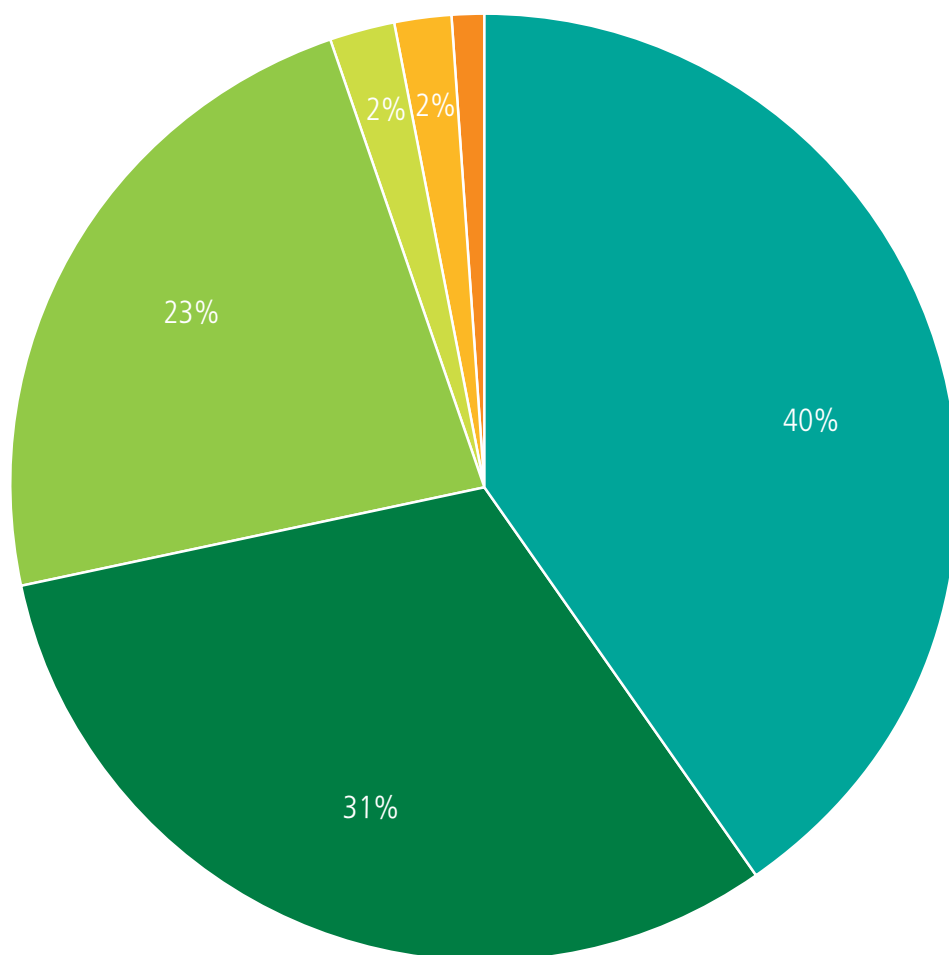
3 For an expanded list of these indications, please refer to Brain Treatments by Indication, on p. VII.11.

Oncology Treatments by Indication—Cumulative

Oncology indications

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	1,293	—
– Brain tumors	550	—



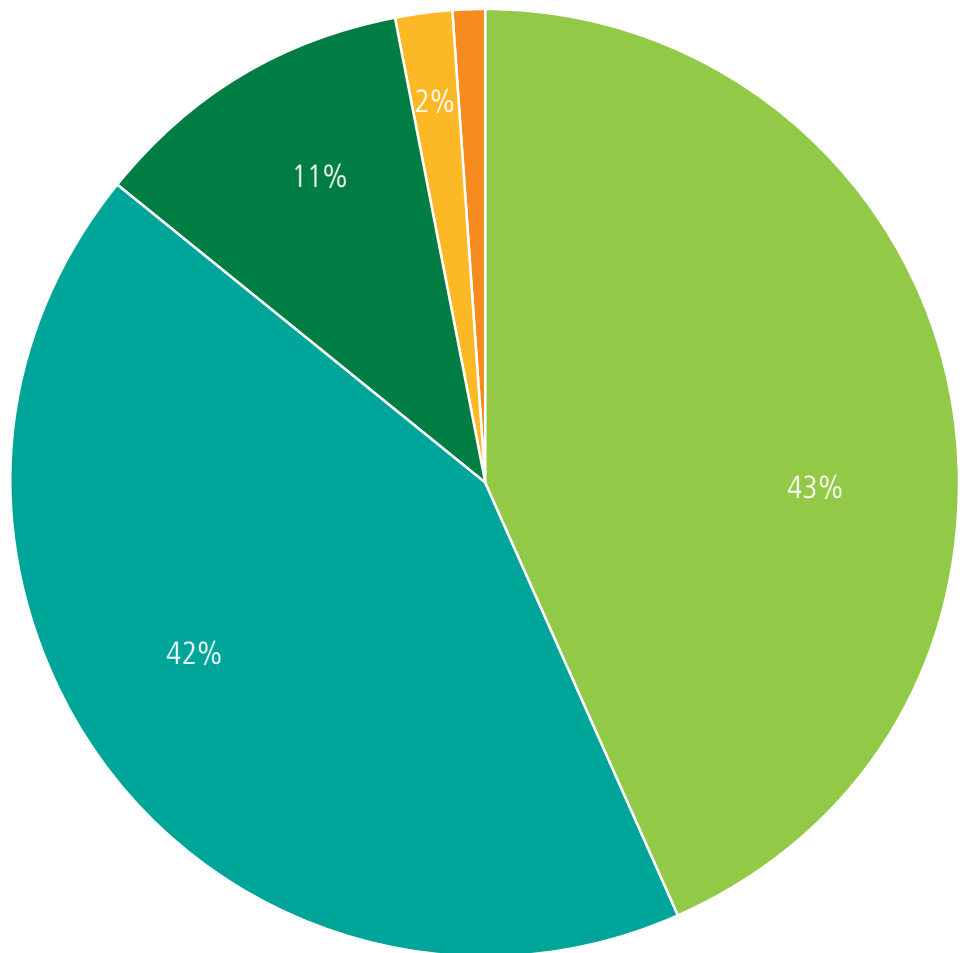
¹ Includes, in descending order of patient treatments: breast tumors, malignant; endometrial tumors; neurofibromatosis; kidney tumors; bone cancer; basal cell carcinoma; abdominal paraganglioma; hemangioma; abdominal tumors; granular cell tumors of the gluteals; Kaposi's sarcoma; cervical tumors; sacral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

Oncology Treatments by Indication—2022

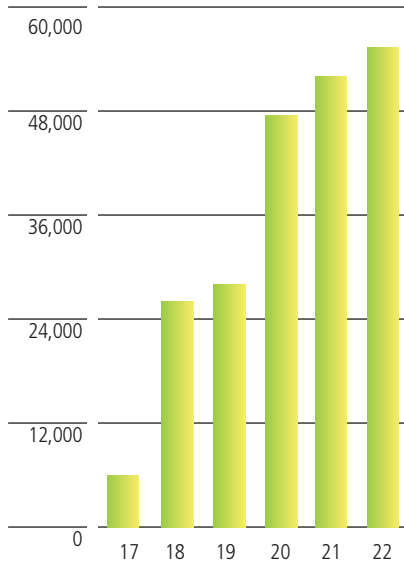
Oncology indications

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 ¹	131	—
– Brain tumors	173	—



Annual Oncology Treatments



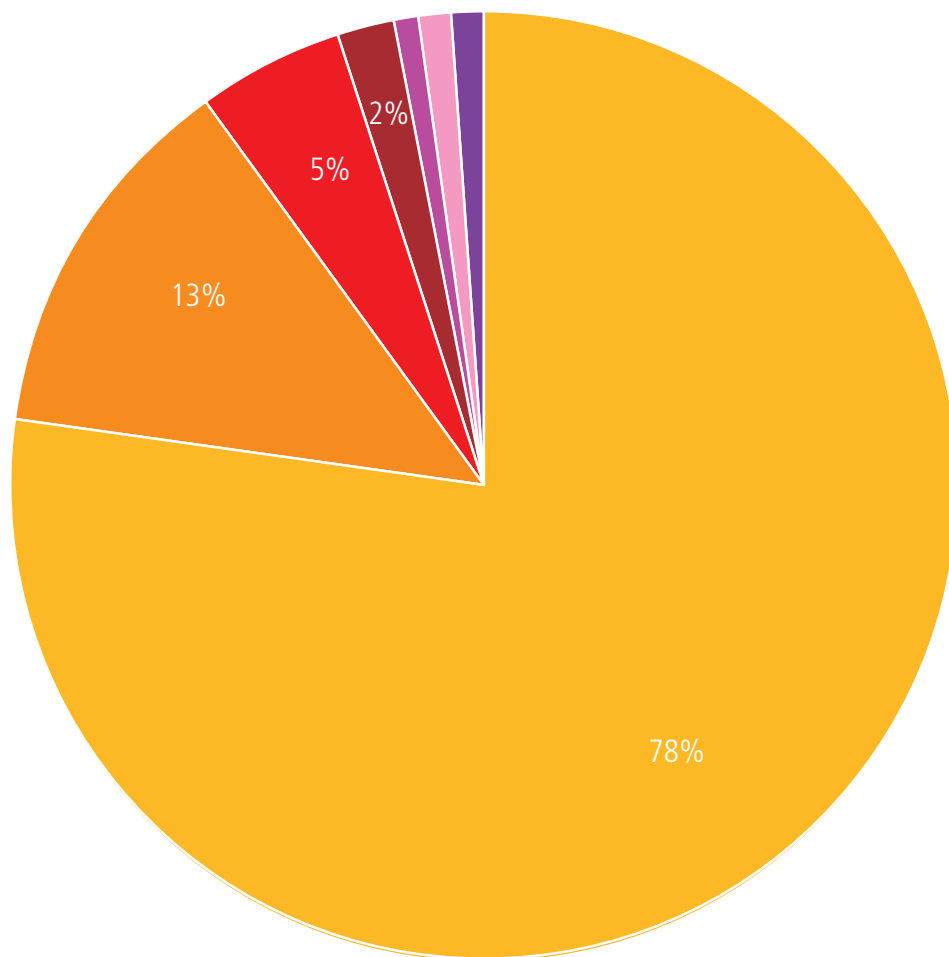
¹ Includes, in descending order of patient treatments: endometrial tumors; glioblastoma; brain tumors, general; glioblastoma multiforme; diffuse intrinsic pontine glioma (DIPG); basal cell carcinoma; and bone cancer

Brain Treatments by Indication—Cumulative

Brain indications

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 ³	81	1%
Other brain ⁴	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

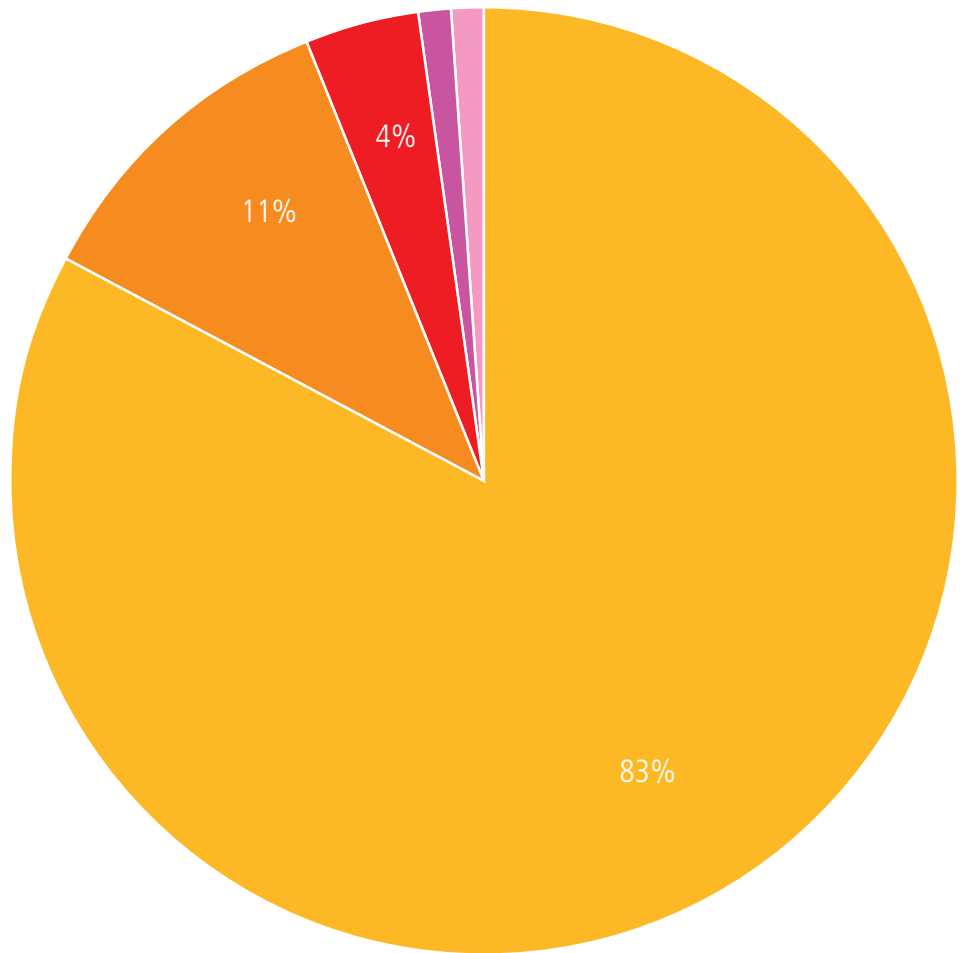
⁴ Includes, in descending order of patient treatments: traumatic brain injury, and blood-brain barrier opening (safety / feasibility)

Brain Treatments by Indication—2022

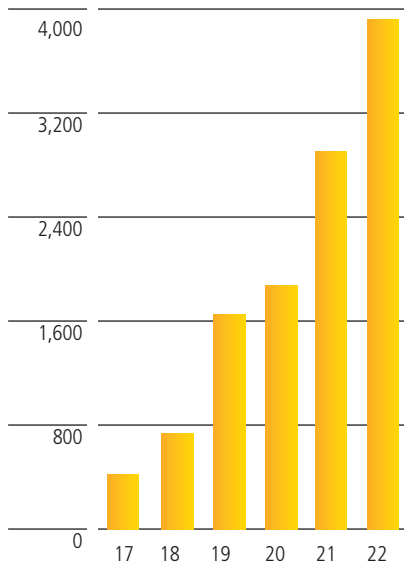
Brain indications

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	—	—



Annual Brain Treatments



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

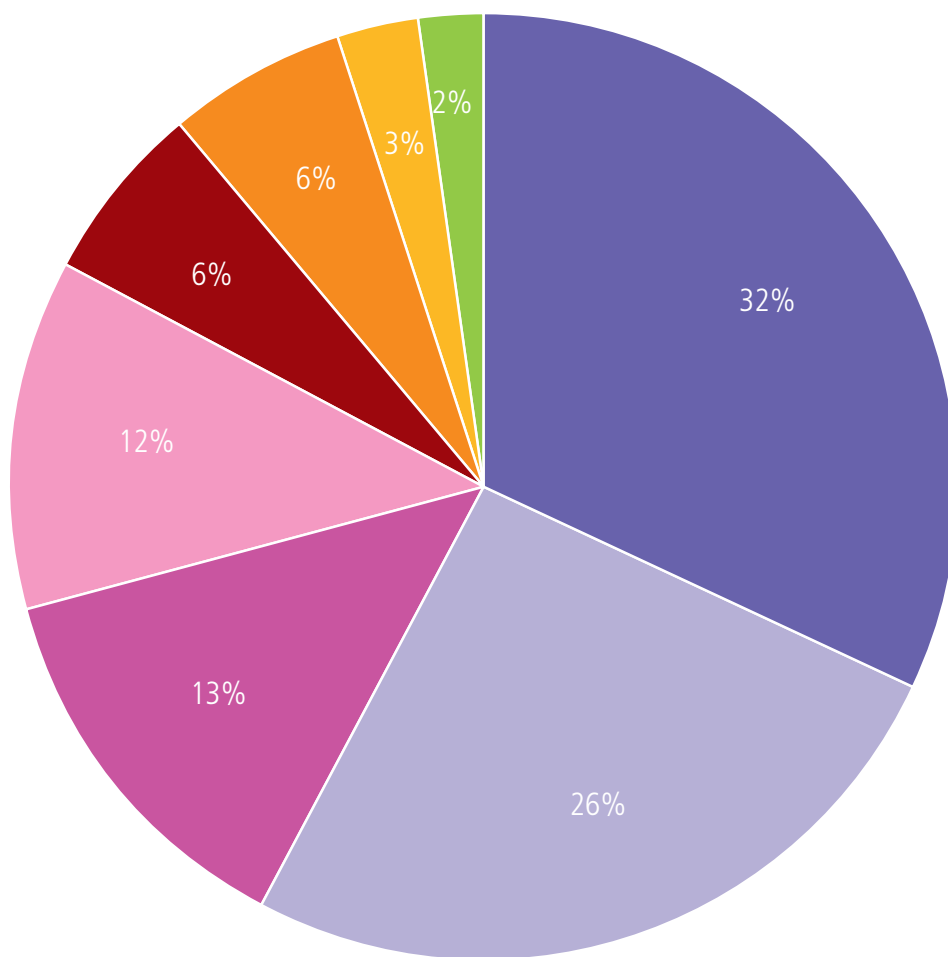
3 Includes, in descending order of patient treatments: obsessive compulsive disorder (ocd)

Other Treatments by Indication—Cumulative

Other indications

15,838 total treatments

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



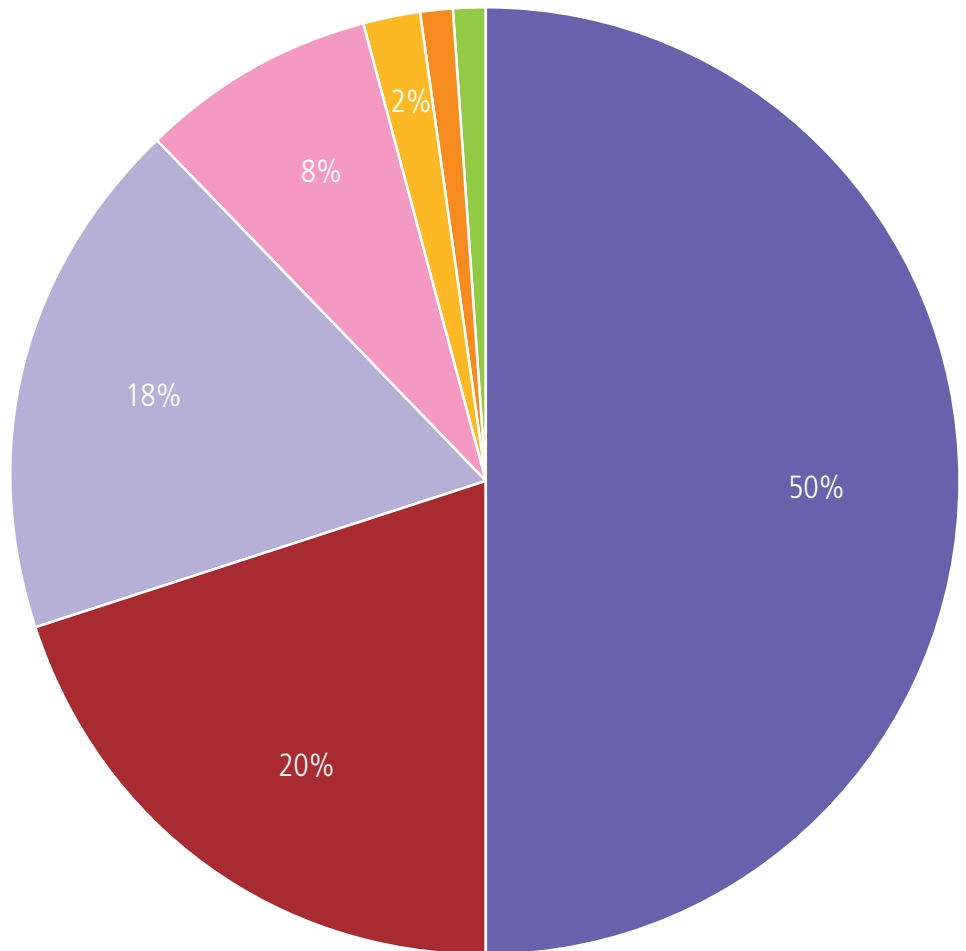
¹ Includes, in descending order of patient treatments: breast tumors, benign; endometrial tumors; desmoid tumors; endometriosis; hypertension; heart valve calcifications; hyperparathyroidism; actinic keratosis; arthritis; dermatology research; tattoo removal; neurofibromatosis; bone tumors, benign; kidney 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

Other indications

2,684 total treatments

Soft tissue cancer	1,330	50%
Bone metastases	477	18%
Thyroid nodules	—	—
Other ¹	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*

11 Cardiovascular sites 2 indications	20 Endocrine disorders sites 1 indication	192 Gastrointestinal sites 6 indications	248 Musculoskeletal sites 8 indications
179 Neurological sites 13 indications	14 Ophthalmological sites 1 indication	568 Urological sites 3 indications	549 Women's health sites 9 indications

Growth of Commercial Treatment Sites

Neurological Body system with the greatest growth in 2022	United States Country with the greatest growth in 2022
23 new sites	28 new sites
179 total sites	196 total sites

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

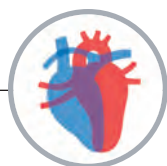
Use the “search by disease” dropdown menu and/or location.

*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.

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



Commercial Treatment Sites by Indication and Region*



Regions

Totals

Indications

■ N. America

■ Europe

■ Asia

■ S. America

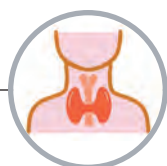
■ Oceania

■ Africa

Cardiovascular

Peripheral

Arteriovenous malformations	1	1	–	–	–	–	2
Varicose veins	–	9	–	–	–	–	9



Regions

Totals

Indications

■ N. America

■ Europe

■ Asia

■ S. America

■ Oceania

■ Africa

Endocrine disorders

Thyroid nodules	–	13	7	–	–	–	20

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



Commercial Treatment Sites by Indication and Region* continued





Indications	Regions						Totals
	N. America	Europe	Asia	S. America	Oceania	Africa	
Gastrointestinal							
Gastric tumors	–	1	–	–	–	–	1
Liver metastases	–	–	2	–	–	1	3
Liver tumors	2	8	126	–	–	1	137
Pancreatic tumors	–	–	41	–	–	–	41
Pancreatic tumors, benign	–	–	1	–	–	–	1
Pancreatic tumors, malignant	1	3	4	–	–	1	9



	Regions						Totals
Indications	N. America	Europe	Asia	S. America	Oceania	Africa	
Musculoskeletal							
Arthritis, facetogenic	1	1	1	–	1	–	4
Bone cancer	3	2	2	–	–	1	8
Bone metastases	6	14	5	–	1	1	27
Bone tumors, benign	–	1	–	–	–	–	1
Desmoid tumors	4	5	–	–	1	1	11
Osteoid osteoma	5	11	85	–	1	1	103
Soft tissue cancer	1	1	–	–	–	–	2
Soft tissue tumors, benign	1	5	85	–	–	–	92


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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* continued





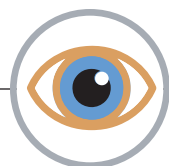
Indications	Regions						Totals
	N. America	Europe	Asia	S. America	Oceania	Africa	
Neurological							
Movement disorder							
Dystonia	—	1	—	—	—	—	1
Dystonia, hand	—	—	1	—	—	—	1
Epilepsy	—	1	1	—	—	—	2
Essential tremor	51	25	23	1	2	—	102
Parkinson's disease, dyskinesia	2	3	1	—	—	—	6
Parkinson's disease, tremor	35	10	10	1	1	—	57
Neurodegenerative							
Alzheimer's disease	—	—	1	—	—	—	1
Pain							
Neuropathic pain	—	2	—	—	1	—	3
Neuropathy	—	1	—	—	—	—	1
Trigeminal neuralgia	—	1	—	—	—	—	1
Psychiatric							
Depression	—	—	1	—	—	—	1
Obsessive-compulsive disorder	1	—	1	—	—	—	2


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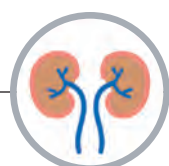



Commercial Treatment Sites by Indication and Region* continued





	Regions						Totals
Indications	■ N.America	■ Europe	■ Asia	■ S.America	■ Oceania	■ Africa	
Ophthalmological							
Glaucoma	—	14	—	—	—	—	14





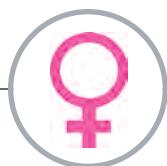
	Regions						Totals
Indications	N. America	Europe	Asia	S. America	Oceania	Africa	
Urological							
Benign prostatic hyperplasia	14	6	25	—	—	—	45
Kidney tumors	1	4	85	—	—	1	91
Prostate cancer	171	210	41	6	1	3	432


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Commercial Treatment Sites by Indication and Region* continued





Indications	Regions						Totals
	N. America	Europe	Asia	S. America	Oceania	Africa	
Women's health							
Breast tumors, benign	–	10	3	–	–	–	13
Breast tumors, malignant	1	6	89	–	–	–	96
Cervicitis	–	1	–	–	–	–	1
Endometrial tumors	–	–	1	–	–	–	1
Endometriosis	–	2	–	–	–	–	2
Lichen sclerosis	–	–	1	–	–	–	1
Urinary incontinence, stress	–	1	–	–	–	–	1
Uterine adenomyosis	3	7	101	–	2	2	115
Uterine fibroids	11	32	270	–	2	4	319

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