

# Bridging the Gap: RSSearch® Patient Registry

## RSSearch® Registry Merger Complete

The Radiosurgery Society® (RSS) would like to thank all of our member institutions for their patience and understanding as we went through the process of merging two large patient databases. Your commitment to advancing the science of SRS/SBRT through the use of the RSSearch Patient Registry is a testament to your desire to improve patient outcomes and we at the RSS are very grateful.

RSSearch continues to thrive with the use of the new Vision Tree (VTOC) 360 platform and as of August, 2018, has now incorporated the historical data from the Adverttek database. The combined total cases in the database now exceeds 22,000 subjects! This is a 10% increase over last year at this time. Since the merger of the databases, data has been provided for multiple aggregate data outcomes analyses. See the newest publications on pages 3 and 4 of this issue.

The number of participating centers continues to increase, and we welcome our two newest centers: Anova Cancer Care of Lone Tree, CO and 5D Clinics of Perth, Western Australia. Since the Go Live of the VTOC platform, the top enrolling center was Sir Charles Gairdner of Perth, Western Australia. See page 2 for the top 10 enrolling centers. Congratulations to the team at Sir Charles Gairdner and thank you to all the participating centers and patients that have made the RSSearch Patient Registry a continued success.

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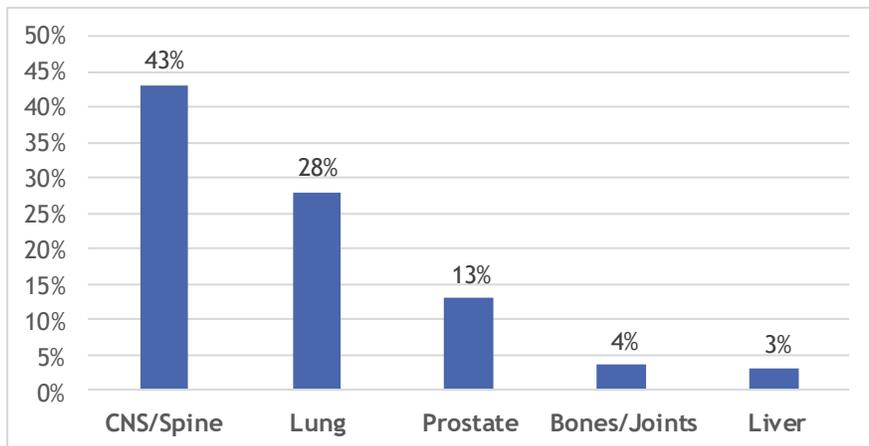
### Special Points of Interest

- RSSearch is the largest SRS/SBRT dedicated patient registry managed by a non-profit medical professional society.
- Currently, over 22,000 enrolled patients.
- Global participation.
- Accepting new participating centers.

# RSSearch<sup>®</sup> Registry Statistics 2018 Update

A review of the aggregate data in RSSearch was conducted on the subjects that were enrolled between 2006 and December, 2018. This analysis included 21,982 screened cases from 45 participating centers in the US, Germany and Australia.

At the time of the analysis, the top ten SRS/SBRT treatment locations reported in RSSearch were brain, spinal cord, cranial nerves (43%), lung/bronchus (28%), prostate (13%), bones/joints (4%) and liver (3%) (Figure 1). Other treatment locations rounding out the top 10 included lymph nodes, meninges, other endocrine glands, pancreas, and adrenal gland. Men were enrolled at a slightly higher rate than women (53.8% male vs 46.2% female). The median patient age was 59 years (range 18–95



**Figure 1. Top 5 SRS/SBRT treatment sites for patients enrolled in RSSearch Patient Registry between 2006— August, 2018.**

years). The majority of patients treated had a Karnofsky Performance Score of 90 or greater. The majority of screened cases were reported as being Caucasian (88%), 9% were reported as African-American, and 2% were reported as Asian descent.

The most frequent referrals for SRS/SBRT treatment were from medical oncologists (33%) and neurosurgeons (14%), with those two specialties representing nearly half of all referrals combined. Urology referrals represented 12% of the cases, followed by radiation oncology (9%) and pulmonology (7%). Other specialty referrals included cardiothoracic surgery, primary care, general surgery, and gynecology. Self referral represented 3.5% of cases. The registry continues to grow and includes patients treated with various treatment delivery systems including Agility<sup>™</sup>, Axesse<sup>™</sup>, CyberKnife<sup>®</sup>, EDGE<sup>®</sup>, Gamma Knife<sup>®</sup>, Novalis<sup>®</sup>, Trilogy<sup>®</sup>, and Truebeam<sup>®</sup>. Patient-reported quality of life questionnaires are now available for various treatment locations including lung, prostate, liver, breast, and CNS.

## 2018 Statistics

**21,982**

Screened cases

**45**

Participating centers

**54%**

Of cases enrolled are men

**43%**

Of lesions are located in brain, spinal cord or cranial nerve

**28%**

Of lesions are located in the lung

**13%**

Of lesions are located in the prostate

**33%**

Of cases were referred by medical oncologists

**14%**

Of cases were referred by neurosurgeons

## Top 10 Enrolling Centers

1. Sir Charles Gairdner Hospital  
Perth, Australia
2. New Jersey  
CyberKnife at  
Community Medical Center  
Toms River, NJ
3. Mission Hospitals Asheville  
Asheville, NC
4. St. Mary's Medical Center  
Huntington, WV
5. St. Francis Hospital  
Memphis, TN
6. Franklin Square  
Hospital Center  
Baltimore, MD
7. Pennsylvania  
Hospital  
Philadelphia, PA
8. Southeast Georgia  
Health System  
Brunswick, GA
9. Doctors Hospital  
Augusta, GA
10. St. Anthony Hospital  
Oklahoma City, OK AND  
Cyberknife at  
Erlanger  
Chattanooga, TN

## St. Mary's Medical Center Publishes Study on SBRT for Recurrent Head & Neck Cancer

On August 31, 2018, Raj Singh and co-authors published a report from the RSSearch® Patient Registry titled “*Salvage Stereotactic Body Radiation Therapy (SBRT) for Locally Recurrent Previously Irradiated Head and Neck Squamous Cell Carcinoma: An Analysis from the RSSearch® Registry*”. The objectives of the article were to report on the overall survival, local control, dose-outcome relationships, and related toxicities following SBRT for locally recurrent, previously irradiated squamous cell carcinoma of the head and neck (rSCCHN). Using aggregate data found in the RSSearch Patient Registry, the team was able to report on 45 rSCCHN patients that had been previously irradiated and then treated with 5 fractions of SBRT for local recurrence at 12 different radiotherapy centers between January 2008 and November 2016.

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*“The RSSearch Registry is an amazing resource that has allowed our group to publish clinical outcomes following SRS/SBRT..” - Raj Singh, B.S. St. Mary's Medical Center,*

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Prescription doses  $\geq 40$  Gy were associated with higher one-year rates of overall survival and local control, but were associated with a higher risk of acute or late toxicity (22.5% and 15.6%, respectively), although most toxicities were grade 1 or 2 with only 1 late grade 3 toxicity of esophagitis.

The team concluded that salvage SBRT for rSCCHN resulted in outcomes comparable to prior single-institutional reports in a multi-institutional cohort across clinical settings with low toxicity, thus supporting more widespread adoption of SBRT with recommended doses  $\geq 40$  Gy.

“The RSSearch Registry is an amazing resource that has allowed for our group to publish clinical outcomes thus far following SRS/SBRT for trigeminal neuralgia, recurrent GBM, non-resectable pancreatic adenocarcinoma, recurrent head and neck cancer, and recently submitted for publication, our completed study on acoustic neuromas. Particularly, the Registry is novel in its primarily community-based and multi-institutional participants that allow for the assessment of the impact of heterogeneous treatment planning and will allow for future studies with novel questions moving forward (such as the use of SBRT for the treatment of early-stage small-cell lung carcinoma (SCLC) as well as for salvage therapy for SCLC,” Raj Singh, St. Mary's Medical Center.

To review the entire article please go to: <https://www.cureus.com/articles/12670-salvage-stereotactic-body-radiation-therapy-for-locally-recurrent-previously-irradiated-head-and-neck-squamous-cell-carcinoma-an-analysis-from-the-rssearch-registry>

## SBRT for Liver Metastases - Clinical Outcomes from RSSearch® Patient Registry

This past year, several outcomes analysis from RSSearch® have been published in peer-reviewed journals including a study by A. Mahadevan et al titled “*SBRT for liver metastasis—clinical outcomes from the international multi-institutional RSSearch Patient Registry*”. The study published in 2018 in Radiation Oncology included 427 patients with 568 liver metastases treated with SBRT doses of 12-60 Gy in 1-5 fractions. At a median of 14 months (1-91 months), median overall survival (OS) was 22 months. The authors showed that BED doses of 100 Gy and greater correlated with improved OS. Small tumors (< 40 cc<sup>3</sup>) also correlated with improved OS. Local control (LC) was evaluable in 430 liver metastases from 324 patients. Two-year LC rate was better for tumors that received BED10 ≥ 100 Gy and tumors < 40 cm<sup>3</sup>. The authors concluded that in a large, multi-institutional series of patients with liver metastasis treated with SBRT, reasonable LC and OS was observed. OS and LC depended on dose and tumor volume.

Interested in accessing aggregate data from RSSearch?  
Email Jan Jenkins, RN, [jjenkins@therss.org](mailto:jjenkins@therss.org) to find out more about aggregate data requests.

## RSSearch® Study Demonstrates Importance of Monte Carlo Treatment Planning Algorithm as a Predictor of Local Control of SBRT for Stage I NSCLC

Investigators from Montefiore Medical Center, Bronx, NY published a study from RSSearch investigating various parameters to predict the likelihood of local control of early-stage lung cancer following SBRT ([Pract Radia Oncol 2018 Mar-April;8\(2\):ee33-e39](#)). The study by authors N. Ohri et al evaluated 928 patients, of which 59% had T1 tumors. Local control rates following SBRT treatment using pencil beam algorithm were inferior to those observed following treatments planned with Monte Carlo algorithm.

Tumor control probability modeling

was performed to characterize the relationship between size-adjusted biologically effective dose (sBED) and local control 2 years after SBRT. When restricted to patients treated using Monte Carlo algorithm, sBED values of 60, 80 and 100 Gy yielded TCP rates of 91%, 95% and 97%, respectively. The authors concluded that a strong association was found between treatment planning algorithm and local control rates following SBRT for early-stage NSCLC and sBED can be a useful tool predicting local control after SBRT.



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## Is Your Record Complete?

The registry is only as useful as the information it contains, so it is important to enter complete information for screening, treatment and follow-up data. You will be reminded to update your records once a quarter.

With the merger of the VisionTree 360 platform, there are several important changes to be aware of:

- VTOC 360 allows adverse event reporting using both Common Toxicity Criteria Adverse Events Reporting (CTCAE) Versions 3 and 4. It is important to record all treatment-related toxicities. Be sure to include the dates and grade for each toxicity.
- We are now using the newest version of the International Classification of Diseases Oncology codes (ICD-O) Version 10. A drop-down list is provided for the treatment location.
- Several additional screening data fields were added to the VTOC 360 platform for prostate, breast, liver, pancreas. Be sure to complete these fields to enhance outcomes analysis.
- The Patient Portal is open and available for all centers to use. Over 20 questionnaires are available for patient-reported quality of life outcomes.

If you have any questions, please contact Mr. Jan Jenkins at [jjenkins@therss.org](mailto:jjenkins@therss.org)

## Coordinators Corner: Meet your fellow RSSearch® Patient Registry participants

Kimila Jones, RN, BSN, is the CyberKnife Coordinator at the Regional Cancer Center at St. Mary's Medical Center in Huntington, West Virginia.

Beginning in February of 1996, Kimila started working at St. Mary's Medical Center. In 2007, St. Mary's Medical Center became one of the first member institutions of ReCKord, the predecessor of the RSSearch® Patient Registry, entering case number 36 overall into the database. From the beginning, Kimila Jones has been their CyberKnife Coordinator and primary point person at St. Mary's for data entry and regulatory adherence entering approximately 95% of all the data recorded at St. Mary's. Kimila and 2 of her colleagues were also a part of the first training session when the Vision Tree 360 system went live!

The St. Mary's team treats an average of 125 cases per year with SRS/SBRT and has entered a total of 1,184 cases as of September 2018. St. Mary's treats cancer patients in the areas of brain, lung, prostate, spine, pancreas and liver. In addition, they treat benign conditions of Trigeminal Neuralgia, Vestibular Schwannoma, Arteriovenous Malformation and Meningioma.

Kimila says, "RSSearch has been a wonderful tool allowing us to share information and treatment outcome with centers all over the world. We want to make sure that we are providing the best treatment options



for our patients."

In addition to being the 4<sup>th</sup> highest enrolling Center using the RSSearch Patient Registry and contributing data that is used in almost every publication to come from that data, the team at St. Mary's Medical Center is also one of the most prolific writers of articles produced from the RSSearch Patient Registry. Please see the article regarding the latest publication from the St. Mary's Medical Center Team on page 3 of this newsletter.

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*"RSSearch has been a wonderful tool allowing us to share information and treatment outcomes with centers all over the world," Kimila Jones, RN, St. Mary's Medical Center, Huntington, WV.*

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## About The RSS

The Radiosurgery Society (RSS) is a multi-disciplinary non-profit organization, consisting of surgeons, radiation oncologists, physicists, and allied professionals, who are dedicated to advancing the science and clinical practice of stereotactic radiosurgery and stereotactic body radiation therapy.

[www.therss.org](http://www.therss.org)

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Join us March 21-23, 2019 in sunny and warm San Diego, CA, for the 2019 RSS Annual Scientific Meeting. Register and find out more at [www.rssevents.org](http://www.rssevents.org).

### 2019 Program Highlights:

- Stereotactic Radiosurgery (SRS) for Intracranial Applications
- Stereotactic Body Radiosurgery and Radiotherapy (SABR/SBRT) for Extracranial Applications
- Dedicated Physics Sessions
- Current and Future Approaches to Combining Immunotherapy & Radiosurgery
- The ever popular, informative, and entertaining "Showdown Debates"
- Radiosurgery in the field of Functional Disorders
- Current Challenges and Future Directions of Lung SBRT with a Hands-on Workshop

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