Advanced cancer patients have better quality of life and reduced health care costs when radiation therapy and palliative care are coordinated and based on patient-reported feedback

San Antonio, October 18, 2015—A collaborative, patient reported outcome (PRO)-based approach by palliative care and radiation oncology teams, results in better outpatient symptom management and a decrease in end-of-life hospitalizations and costs for late-stage cancer patients according to research presented today at the American Society for Radiation Oncology’s (ASTRO’s) 57th Annual Meeting. The data also showed that through the implementation of rapid palliative radiotherapy that includes shorter, higher doses of radiation therapy, many patients experience pain relief within one week of treatment.

Starting in 2012, researchers at the University of Virginia Health System developed an integrated patient care program for advanced cancer patients that utilized information from PROs to improve patients’ health and quality of life and reduce costs of care. The program emphasized reducing hospitalizations and improving outpatient management of patients. The collection of PRO
assessments was initiated for all patients beginning in October 2013, following a pilot testing phase completed in February 2013.

A patient questionnaire that asked patients how they were doing emotionally and physically was incorporated into the facility’s electronic medical records system. A comprehensive assessment and rapid evaluation and treatment (CARE Track) palliative care team was alerted by the system to clinically significant reported changes in a patient’s status.

A total of 646 cancer patients were enrolled into the CARE Track program. End-of-life data of 368 CARE Track patients was compared to end-of-life data of 198 patients not enrolled in the CARE Track program (the control group). A total of 967 PRO surveys were completed by the 368 CARE Track patients. The CARE Track patients had significantly fewer end-of-life hospitalizations, with 48.3 percent of patients being hospitalized in the final 90 days of life, compared to 64 percent from the control group. Additionally, the CARE Track patients received more hospice care than the control group (69.6 percent compared to 47 percent), which resulted in fewer hospital deaths for the CARE Track group than the control group (8.4 percent vs. 38.5 percent). This difference in end of life care resulted in a reduced mean total cost of $7,317 per patient in the last 90 days of life.

A multidisciplinary Supportive Care Tumor Board was also developed that met weekly to develop rapid and coordinated care plans for highly symptomatic patients. To respond more quickly to pain control, the team developed STAT RAD—a more rapid workflow for palliative radiation therapy for patients with bone metastases with the goal of turning a common two-to-three week treatment course into a one-day treatment procedure with highly focused radiation treatment to reduce treatment-related toxicity.

The STAT RAD pilot clinical trial enrolled 28 patients. The patients each had between one and three painful bone metastases (37 target lesions) and received RT of 5 to 10 Gy per fraction, for between two and five fractions. An average of 21.6 Gy in 3.1 fractions was administered. The pain response of patients in the STAT RAD program was assessed using the International Bone Metastasis Consensus Working Party; and the patients’ quality of life (QOL) was assessed using the Functional Assessment of Cancer Therapy - Bone Pain Scale. Patients reported 80 to 90 percent partial or
complete pain relief by three months and QOL was significantly improved for patients for a timeframe ranging from one week post STAT RT to 26 weeks post STAT RAD. A second clinical trial is still accruing patients and is exploring single fraction STAT RAD with dose escalation from 8 Gy to 15 Gy so that the entire course of simulation, planning, quality assurance, and treatment can be completed in a single 3-4 hour patient centric-procedure.

“If we listen to our patients carefully, talk to them about their changing medical and emotional needs and develop rapid and coordinated treatment plans we can improve their quality of life and reduce their need for hospitalization for symptom management at the end of life,” said Paul W. Read, MD, PhD, lead author of the study and professor of radiation oncology at the University of Virginia Health System. “Integrating patient surveys to collect patient reported outcomes directly into electronic medical records, and incorporating them into routine clinical care can be done in most hospital systems. The concept of Tumor Boards for multi-specialty care planning of curative cancer patients is practiced throughout the country and extending this concept to palliative care management is easy and straightforward. Single fraction radiation therapy for palliation of bone metastases for advanced cancer patients with short life expectancies is an accepted national care guideline and has been studied for decades in clinical trials. Therefore, these programs can all be adopted into clinical practice at most health systems with minimal cost, training or education.”

The abstract, “Outcomes of a Re-engineered Palliative Care and Radiation Therapy Care Model” will be presented in detail during the clinical trials session at ASTRO’s 57th Annual Meeting at 3:15 p.m. Central time on Sunday, October 18, 2015. To speak with Dr. Read, please call Nancy Mayes in ASTRO’s Press Office at the Henry B. González Convention Center in San Antonio on October 18 – 21, 2015 at 210-258-8104 or 210-258-8105, or email press@astro.org.

ASTRO’s 57th Annual Meeting, being held at the Henry B. González Convention Center in San Antonio, October 18-21, 2015, is the nation’s premier scientific meeting in radiation oncology. The 2015 Annual Meeting is expected to attract more than 11,000 attendees including oncologists from all disciplines, medical physicists, dosimetrists, radiation therapists, radiation oncology nurses and nurse practitioners, biologists, physician assistants, practice administrators, industry representatives
and other health care professionals from around the world. Led by ASTRO President Bruce D. Minsky, MD, FASTRO, a radiation oncologist specializing in gastrointestinal cancers, Professor of Radiation Oncology, and the Frank T. McGraw Memorial Chair at The University of Texas MD Anderson Cancer Center, Houston, the theme of the 2015 Meeting is “Technology Meets Patient Care.” Dr. Minsky’s Presidential Symposium, “Multidisciplinary Management of Esophageal and Rectal Cancers,” will feature Leonard L. Gunderson, MD, MS, FASTRO, and Joel E. Tepper, MD, FASTRO, to highlight imaging, staging, genomics and data mining approaches, as well as the latest advances in esophageal and colorectal cancer treatment. ASTRO’s four-day scientific meeting includes presentation of more than 2,100 abstracts: five plenary papers, 351 oral presentations, 1,609 posters and 171 digital posters in more than 53 educational sessions and 26 scientific panels for 20 disease-site tracks. Three keynote speakers will address a range of topics including cancer biology in radiation oncology, the essential roles of a physician, and patient safety: Arul Chinnaiyan, MD, PhD, Professor and Director, Michigan Center for Translational Pathology; Francisco G. Cigarroa, MD, Past President and Chancellor, University of Texas; and Gerald B. Hickson, MD, Senior Vice President and Assistant Vice Chancellor, Vanderbilt University Medical Center.

ABOUT ASTRO

ASTRO is the premier radiation oncology society in the world, with more than 10,000 members who are physicians, nurses, biologists, physicists, radiation therapists, dosimetrists and other health care professionals who specialize in treating patients with radiation therapies. As the leading organization in radiation oncology, the Society is dedicated to improving patient care through professional education and training, support for clinical practice and health policy standards, advancement of science and research, and advocacy. ASTRO publishes three medical journals, International Journal of Radiation Oncology • Biology • Physics (www.redjournal.org), Practical Radiation Oncology (www.practicalradonc.org) and Advances in Radiation Oncology (www.advancesradonc.org); developed and maintains an extensive patient website, www.rtanswers.org; and created the Radiation Oncology Institute (www.roinstitute.org), a non-profit
foundation to support research and education efforts around the world that enhance and confirm the critical role of radiation therapy in improving cancer treatment. To learn more about ASTRO, visit www.astro.org.
LBA 6689  Outcomes of a Re-engineered Palliative Care and Radiation Therapy Care Model

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Purpose/Objective(s): To improve health, improve healthcare, and reduce end of life costs we re-engineered palliative care and radiation therapy workflows for advanced cancer patients.

Materials/Methods: We integrated a PROMIS-based patient reported outcomes (PRO) database, called MyCourse, into our electronic medical record with triggered alerting of critical changes to a comprehensive assessment and rapid evaluation and treatment (CARE Track) palliative care team. A multidisciplinary Supportive Care Tumor Board met weekly to develop rapid and coordinated care plans for highly symptomatic patients. For rapid pain palliation, we implemented a one day Scan-Plan-QA-Treat radiation workflow and piloted high dose and highly conformal 2-5 fraction (STAT RT) and 1 fraction (STAT RAD) treatment for bone metastases. End of life quality and cost outcomes of deceased CARE Track patients were compared to matched deceased institutional controls. Differences in proportions between groups were assessed by the Chi-square test statistic and differences in mean values were assessed using the t-test statistic (statistical significance p < 0.05). STAT RT pain response was assessed per the International Bone Metastasis Consensus Working Party and quality of life (QOL) was assessed per the Functional Assessment of Cancer Therapy- Bone Pain Scale.

Results: 646 patients were enrolled into the CARE Track program and 368 deceased CARE Track patients were compared to a 198 patient control group. 967 PRO surveys were completed by the deceased CARE Track patients. CARE Track patients had significantly less end of life hospitalizations, hospital deaths, and were more likely to receive hospice care resulting in a reduced mean total cost of $7,317 per patient in the last 90 days of life.

<table>
<thead>
<tr>
<th>Health Metric or Cost</th>
<th>CARE Track Deceased (n=368)</th>
<th>Control Group Deceased (n=198)</th>
<th>p-value</th>
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<tbody>
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<td>Hospitalization final 90 days of life</td>
<td>48.3%</td>
<td>64.0%</td>
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<td>Hospitalization final 30 days of life</td>
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<td>61.5%</td>
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<td>Died in a hospital</td>
<td>8.4%</td>
<td>38.5%</td>
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<td>Hospice care provided</td>
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<td>47.0%</td>
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<td>Hospice median stay (days)</td>
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<td>Mean Total costs final 90 days of life</td>
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</table>

The STAT RT pilot clinical trial enrolled 28 patients with 1-3 painful bone metastases (37 target lesions) who were treated at 5-10 Gy per fraction for 2-5 fractions. An average of 21.6 Gy in 3.1 fractions were delivered. Patients reported 80-90% partial or complete pain relief and QOL was significantly improved for both 1-26 weeks after STAT RT. The STAT RAD trial is accruing patients.

Conclusion: Collaborative palliative care and radiation oncology teams can re-engineer patient centric workflows to improve health, healthcare, and reduce end of life costs. Gains are achieved through earlier palliative care integration with PRO-based patient monitoring and alerting and more efficient multi-disciplinary care including rapid high dose conformal radiation for patients with painful bone metastases.