**HTAIS Reports on Radiation Oncology**

**Jun 8, 2017 - Custom Product Briefs**

**MRIDIAN COBALT-60 SYSTEM (VIEWRAY, INC.) FOR ADVANCED RADIOTHERAPY DELIVERY**

The MRIdian Cobalt-60 System is an integrated magnetic resonance imaging and cobalt-60 radiotherapy delivery system intended to provide advanced radiation therapy, such as image-guided radiation therapy and stereotactic body radiation therapy. Incorporating MRI into the treatment delivery process may improve pretreatment planning and provide better positioning and tracking of tumors during treatment.

**Jun 5, 2017 - Custom Product Briefs**

**SPACEOAR SYSTEM (AUGMENTIX, INC.) HYDROGEL SPACER FOR REDUCING EXPOSURE DURING PROSTATE CANCER RADIATION THERAPY**

The SpaceOAR™ System is a single-use device consisting of a polyethylene glycol powder, buffer solution, and specialized tools for mixing and implantation. The mixture forms a synthetic hydrogel spacer intended to protect the anterior rectum during prostate irradiation by temporarily pushing the rectum away from the prostate. The radiation oncologist uses ultrasound to insert the hydrogel mixture between the rectum and the prostate. The hydrogel is absorbed by the patient's body within three months.

**May 1, 2017 - Technology Forecasts**

**PROTON BEAM RADIATION THERAPY SYSTEMS FOR CANCER**

Proton beam radiation therapy systems in compact configurations cost between $30 million and $40 million to establish, and traditional multiroom configurations cost $100 to $200 million or more. Hospitals continue to invest in these systems despite downward trends in third-party payer coverage for common cancers such as prostate cancer due to lack of evidence of benefit over other radiation treatment modalities.

**Sep 19, 2016 - Custom Rapid Responses**

**USE OF GONAD SHIELDING FOR PEDIATRIC IMAGING**

Overexposure of the gonads to ionizing radiation can cause gonadal dysfunction (infertility or sterility), greatly reducing reproductive potential. Strategies for improving reproductive potential in patients exposed to radiation include cryopreservation of sperm/ova, radiation dose optimization, ovarian transposition, and gonadal shielding.

**Jul 8, 2016 - Custom Rapid Responses**

**EXTERNAL NEUTRON BEAM RADIATION THERAPY FOR TREATING CANCER**

External neutron beam radiation therapy is a form of high-linear-energy transfer (high-LET) that damages cancerous cells primarily by nuclear interactions and is often used to treat tumors that have not responded to low-LET radiation (e.g., electrons, photons, protons).

**Feb 5, 2016 - Custom Product Briefs**

**NANOKNIFE SYSTEM (ANGIODYNAMICS, INC.) FOR TREATING PANCREATIC CANCER**

The NanoKnife® System is an ablation system that uses irreversible electroporation (IRE) and is intended for the surgical ablation of soft tissue. IRE uses high-voltage direct current intended to punch permanent holes in cell membranes and cause cell death.

**Feb 2, 2016 - Custom Product Briefs**

**NANOKNIFE SYSTEM (ANGIODYNAMICS, INC.) FOR TREATING LIVER CANCER**
The NanoKnife® System uses irreversible electroporation (IRE) and is intended for the surgical ablation of soft tissue. The manufacturer website provides no further information on this system, which may be due to warning letters sent to the company by the U.S. Food and Drug Administration about inappropriate promotion for unlabeled uses.

Dec 28, 2015 - Custom Rapid Responses

REAL-TIME RADIATION EXPOSURE MONITORING IN HEALTHCARE WORKERS

Real-time electronic badges do not replace traditional badges because they do not record a permanent radiation exposure record; however, they can be used to help clinicians immediately adjust their behavior (e.g., repositioning themselves) to comply with occupational radiation safety procedures and reduce their exposure.

Jul 2, 2015 - Custom Product Briefs

THERASPHERE® (BTG INTERNATIONAL, INC.) FOR TREATING HEPATOCELLULAR CARCINOMA

TheraSphere® is an interventional radiation oncology device consisting of nonbiodegradable glass microspheres loaded with the radioisotope yttrium-90. It is indicated for radiation therapy (also known as transarterial radioembolization) delivered through a catheter to tumors locally to reduce liver tumor burden or serve as a bridge to surgery or liver transplantation in patients with unresectable hepatocellular carcinoma.

Jun 30, 2015 - Custom Product Briefs

SIR-SPHERES MICROSPHERES (SIRTEX MEDICAL, LTD.) FOR TREATING LIVER METASTASES FROM COLORECTAL CANCER

SIR-Spheres® are therapeutic polymer microspheres containing the radioisotope yttrium-90. SIR-Spheres microspheres are delivered to the tumor locally through a catheter to treat liver metastases arising from colorectal cancer when curative resection of the cancer is not possible. Yttrium-90 has a useful therapeutic life of 7 to 11 days.

Apr 25, 2015 - Custom Rapid Responses

STEREOTACTIC BODY RADIATION THERAPY FOR PROSTATE CANCER

Stereotactic body radiation therapy (SBRT) is a cancer treatment approach derived from the techniques of stereotactic radiosurgery used to treat lesions in the brain and spine. It combines multiple finely collimated radiation beams and stereotaxy to deliver a high dose of radiation, usually 1 to 5 fractions. Proposed advantages include minimizing healthy tissue exposure to high-dose radiation, preventing or accounting for organ motion (e.g., breathing), and the millimeter accuracy of the delivered dose.

Jun 14, 2014 - Technology Forecasts

REAL-TIME MRI ADAPTIVE RADIATION THERAPY FOR ONCOLOGY APPLICATIONS

Use of image-guided radiation therapy and treatment planning technology is gaining interest among clinicians who wish to increase the accuracy and precision of radiation therapy. Real-time MRI adaptive radiation therapy purportedly allows for greater accuracy in targeting tumors that may move or that are located in close proximity to organs likely to move. We look at one such system, the ViewRay, which received FDA approval in 2012. Will the current lack of reimbursement, hefty price tag, and other barriers stall adoption?

Updated: 6/26/2017