Dec. 16, 2016 Vol. 42, Issue 46

THE CANCER LETTER

FDA Finds Lapses in Reporting of Patient Harm, Deaths Resulting from Medical Devices in Hospitals Nationwide

By Matthew Bin Han Ong

After a broad survey of reporting standards at hospitals across the U.S., an FDA investigation recently concluded that the vast majority of the 17 institutions inspected did not file timely reports of injuries and deaths caused by medical devices.

(Continued on page 2)

Hackensack Cancer Center, MSKCC Form Business, Clinical Partnership in New Jersey

By Paul Goldberg

Memorial Sloan Kettering Cancer Center and Hackensack Meridian Health announced a 10-year partnership deal that, in its initial stages, will involve developing joint standards of care that will be applied across their operations.

(Continued on page 9)

Editorial

The Year of the Moonshot

By Paul Goldberg

The moonshot, The Cancer Letter's biggest area of coverage of 2016, continues into 2017.

With the passage of the 21st Century Cures Act, the cancer moonshot initiative has been authorized at $1.8 billion over seven years. The Cures Act also authorizes $500 million over the next decade for FDA to streamline drug and device approval processes (The Cancer Letter, Dec. 10).

(Continued on page 10)

Obama Signs Cures Act, Funding Biden's Moonshot and Boosting NIH, NCI, FDA Budgets Over 10 Years

By Matthew Bin Han Ong

President Barack Obama Dec. 13 signed the 21st Century Cures Act, a bill that changes regulatory standards at FDA, slates additional research funds for NIH, and authorizes $1.8 million over seven years for Vice President Joe Biden's National Cancer Moonshot Initiative.

(Continued on page 11)

FDA Finds Lapses in Reporting of Patient Harm, Deaths Resulting from Medical Devices in Hospitals Nationwide

(Continued from page 1)

The inspections earlier this year were triggered by public scrutiny of power morcellation, a surgical procedure known to spread undetected uterine cancer via the device's spinning blades, as well as by reports of infections associated with contaminated duodenoscopes, flexible, lighted tubes that are threaded through the mouth, throat, and stomach into the top of the small intestine.

"While these events appeared to be the kind that would have fallen under our current medical device reporting requirements, we did not see corresponding adverse event reports in our adverse event (MAUDE) database," Jeffrey Shuren, director of the FDA Center for Devices and Radiological Health, acknowledged in a blog post.

These findings notwithstanding, FDA imposed no penalties against hospitals that failed to comply with the reporting requirements. A conversation with FDA officials appears on page 7.

The agency's report was published weeks before President Barack Obama signed the 21st Century Cures Act, a comprehensive health care reform and research funding measure that some critics lambasted for not including a medical device safety bill designed to address systemic lapses in reporting of adverse events (The Cancer Letter, Dec. 2).

The full FDA report, with links to the agency's observations at individual hospitals, can be downloaded here.

In a three-year investigative series, "How Medical Devices Do Harm," The Cancer Letter focused on failure on the part of hospitals and device manufacturers to report patient death and injury resulting from power morcellators.

The most prominent of these stories revolved around two women who were harmed by power morcellators: Erica Kaitz, the late wife of a Boston attorney, and Amy Reed, at the time an anesthesiologist at Beth Israel Deaconess Medical Center, who underwent power morcellation at Harvard-affiliated Brigham & Women's Hospital on Oct. 17, 2013 (The Cancer Letter, July 4, 2014).

After Reed and her husband, Hooman Noorchashm, realized that the device contributed to the upstaging of her unsuspected leiomyosarcoma, the couple learned that they were not the first to be affected (The Cancer Letter, Nov. 21, 2014).

Kaitz, who underwent the same procedure at the same hospital over a year before Reed, died on Dec. 7, 2013, from metastatic disease. As Kaitz was dying, Reed was recovering from her first round of treatments.

Reed learned that she could have avoided power morcellation—alas, gynecologists at Brigham, who knew of the risks, didn't inform her or report Kaitz's case to FDA (The Cancer Letter, Dec. 18, 2015).

In the years since, over 300 patients and families have come forward claiming harm. FDA said it did not receive any reports of adverse events involving power morcellators before December 2013 (The Cancer Letter, Nov. 20, 2015).

Brigham: We Thought the Cases Weren't Reportable

During the 2016 inspection, FDA found that Brigham & Women's Hospital did not—upon becoming aware of patient injury or death—submit adverse outcome reports to FDA or to device manufacturers within the 10 working days, as required by federal law.

The agency's observations during its inspection of Brigham can be downloaded here.

A Brigham spokeswoman said to The Wall Street Journal and The Boston Globe that the hospital contacted the FDA by phone in March 2014 about Kaitz and Reed. However, hospital officials did not believe the events were reportable because the cases

Editor & Publisher: Paul Goldberg
Reporter: Matthew Bin Han Ong
General Manager: Angela Spring

Editorial, Subscriptions and Customer Service:
202-362-1809 Fax: 202-379-1787
PO Box 9905 - Washington, DC 20016
General Information: www.cancerletter.com

Subscription $425 per year worldwide. ISSN 0096-3917. Published 46 times a year by The Cancer Letter Inc.

did not meet the criteria for mandatory reporting, the spokeswoman said.

"The device functioned as expected and was used in the way it was intended, although with unintended and tragic consequences," the spokeswoman said in an e-mail.

In April 2014, FDA issued a safety advisory against power morcellators, finding that 1 in 350 women with symptomatic fibroids are at risk of having an undetected cancer upstaged by morcellation. Two years later, the agency allowed containment bags to be used with power morcellators to prevent spillage of tissue: the bags were developed by Advanced Surgical Concepts Ltd. of Bray, Ireland, and introduced Nov. 15 by Olympus America Inc. (The Cancer Letter, April 8).

Brigham is defending against medical malpractice lawsuits filed by Richard Kaitz and Reed's husband Noorchashm, formerly a surgeon at Brigham and Thomas Jefferson University Hospital. Earlier this year, Brigham chose not to contest the plaintiffs' offers of proof at a Massachusetts tribunal (The Cancer Letter, May 13).

Other hospitals linked to patient harm resulting from power morcellators—Rochester General Hospital and the University of Rochester Medical Center—were found to lack written medical device reporting procedures and did not meet documentation and recordkeeping requirements, according to the FDA report.

The inspection also found lapses at hospitals including Massachusetts General, UMass Memorial, New York Presbyterian Hospital, andUCLA Ronald Reagan Medical Center, which "failed to provide all information concerning individual adverse event reports that is reasonably known to them, including information found in documents in possession of the user facility," the agency wrote in the report.

In 1990, Congress mandated adverse event reporting by hospitals, also known as user facilities, to complement similar reporting by manufacturers. In 1997, Congress also required that FDA establish a reporting program that could limit hospital reporting to a subset of representative user facilities.

The agency subsequently set up a network of 300 hospitals, called MedSun, or the Medical Product Safety Network. Even with MedSun, all hospitals were required to continue reporting until FDA implements, by regulation, a program limiting user facility reporting to a subset of facilities.

"Based on the number of user facilities in the United States and the number of reports we receive, we believe that these hospitals are not unique in that there is limited to no reporting to FDA or to the manufacturers at some hospitals," Shuren wrote in the blog post. "We want to work with all hospitals to address these issues."

The report comes over a month after the House Committee on Energy on Commerce launched a review of the FDA Office of Criminal Investigations over "management concerns," insufficient performance measures, and morale issues.

The House probe follows a Reuters report detailing how OCI managers forced FDA agents to pursue cases involving mislabeled foreign-imported injectable drugs at the expense of cases with more potential to protect the public health.

In related news, the Government Accountability Office is expected to complete its report on the controversy over power morcellation in January 2017.

FDA: No Action Against Hospitals Necessary

FDA officials determined that no "additional action with regard to these hospitals is necessary," despite acknowledging that there is widespread noncompliance with federal reporting requirements.

"For some hospitals with significant violations of the medical device reporting (MDR) regulation, FDA received a response that we determined was not adequate to address those violations, and we engaged with these facilities to facilitate an effective path to voluntary compliance," the agency said to The Cancer Letter. "These hospitals indicated their willingness to work with us and address the violations, and at this time, we do not believe any additional action with regard to these hospitals is necessary. Hospitals also expressed willingness to work with us on more efficient and effective ways to collect the information we need."

Device-related deaths and serious injuries that occur in hospitals and other device user facilities may involve complex circumstances, agency officials said.

"For example, it may not be immediately apparent to health care providers that a patient's exposure to a device may have caused or contributed to that patient's death," officials said. "Sometimes a patient death could occur at the hospital, months or even years after a patient's treatment at the facility using the device at issue."

FDA's answers to questions from The Cancer Letter appear on page 7.

Taking no action would constitute a "dereliction of duty" on the part of FDA, said Noorchashm, who launched an aggressive campaign against power

morcellation after Reed underwent the procedure in late 2013.

"If a federal agency finds a corporation in non-compliance with federal laws within their jurisdiction, especially when unsuspecting citizens have died or been severely harmed, I am not sure it is legal for the agency to not take any steps towards prosecution, at the very least," Noorchashm said to The Cancer Letter. "In the case of the power morcellator, there was clearly corporate negligence—at best professional lethargy—at work.

"For FDA to just write a useless letter comes nowhere near the magnitude of pain this bad professional behavior has imposed on the many women and families affected. In the end, I think either the FDA or the Office of the Inspector General will act in accordance with their responsibility to publicly prosecute the culprit organizations—if for nothing else, to demonstrate that this type of legal non-compliance is not acceptable in the United States."

In December 2015, agency officials said they were not aware of criminal prosecutions that have resulted from a failure to report adverse events (The Cancer Letter, Dec. 18, 2015). Moving forward, FDA officials say they plan to improve compliance through awareness and education programs.

"We are seeking ways to improve this reporting system by increasing awareness of current medical device reporting requirements and challenges hospitals may face when trying to comply with those requirements," FDA officials said. "We plan to partner with hospitals to educate them on the agency's medical device reporting requirements in order to improve their reporting of device-related adverse events."

On Dec. 5, the agency held a public workshop to solicit input and advice on improving hospital-based surveillance systems, including the incorporation of unique device identifiers into electronic health records to aid generation of evidence.

"In order to effectively address these issues, we will work with the hospital community on what role they should play in assuring the safe use of medical devices," Shuren wrote in the blog post. "This work will include how they can effectively participate in the National Evaluation System for health Technology (NEST), and whether or not current reporting requirements should remain, be modified, or eliminated in light of more effective modern tools, such as software tools to conduct active surveillance of electronic health information that contains unique device identifiers."

NEST, developed under a cooperative agreement between FDA and the Brookings Institution, is designed to link and synthesize data from different sources across the medical device landscape, including clinical registries, electronic health records and medical billing claims (The Cancer Letter, Dec. 18, 2015).

"Although FDA has recognized that requiring all hospitals and other user facilities to report may provide limited added value and could entail unnecessary costs that take away from patient care, we have not yet established the program limiting reporting to a subset of user facilities," Shuren wrote. "In the past, we have not enforced universal reporting requirements for hospitals and other user facilities.

"We feel certain there is a better way to work with hospitals to get the real-world information we need, and we should work with the hospital community to find that right path, especially in light of developments in the creation and evaluation of electronic health information."

Continuing a Legacy

In 2015, two years after Reed and Noorchashm launched their campaign against power morcellation, their House member, representing Bucks County, Pa., publicly joined their cause, writing letters to hospitals and federal agencies.

Rep. Mike Fitzpatrick (R-Pa.) proved to be an effective ally. Having served in the House for a total of seven years over the last decade, Fitzpatrick rallied his colleagues on Capitol Hill, demanded answers, pushed for investigations, and lobbied heavily for more stringent reporting requirements.

Even Vice President Joe Biden's Cancer Moonshot was considered fair game: in a letter, Fitzpatrick asked Biden to advocate for medical device safety in his moonshot efforts (The Cancer Letter, April 15).

In June, Fitzpatrick and Rep. Louise Slaughter (D-N.Y.) introduced two bills designed to strengthen federal requirements for reporting adverse outcomes caused by medical devices and to increase access to legal recourse for patients harmed by Class III high-risk devices (The Cancer Letter, June 10).

One of the bills, the Medical Device Guardians Act, would require individual practitioners to report adverse outcomes, in addition to current statutes requiring institutions—hospitals and manufacturers—to report.

In a Capitol Hill interview with The Cancer Letter earlier this year, Fitzpatrick said he was working

Rep. Mike Fitzpatrick (R-Pa.), a staunch advocate for mandating individual reporting of adverse events by physicians

to include his bill's individual mandate in the 21st Century Cures Act.

"This would codify a simple provision that's already in the Code of Ethics of the American Medical Association," Fitzpatrick said. "So it's already a responsibility of all physicians. I think it should be codified in federal law."

A video of the interview is posted here.

Fitzpatrick's efforts to amend the Cures Act were unsuccessful, and he ended up voting against the bill in disappointment (The Cancer Letter, Dec. 2).

"It was a badly missed opportunity for some very prominent congressional representatives and senators to provide an effective and relatively cost-neutral measure to bring some measure of security to medical device space," Reed and Noorchashm said in a joint statement to The Cancer Letter. "They missed this chance or floridly ignored it."

Sources familiar with FDA drug and device regulation pushed back against the idea of an individual reporting mandate, saying that it is an ineffective method of tracking events as well as an inefficient use of the agency's resources to sift through the potential thousand-fold increase in adverse outcome reports (The Cancer Letter, Dec. 18, 2015).

"There are some that definitely think the federal government shouldn't mandate reporting, and I would say, in the first instance, that if the reports were flowing into the FDA without that mandate, we would understand that," Fitzpatrick said to The Cancer Letter. "In the case of the power morcellator, there were zero reports to the FDA until Amy Reed stepped up and provided the first report as a patient. So something was wrong with the reporting.

"And then the second point is, if the mandate leads to safer devices, better therapies, more cures, patient safety, and something positive in the health care profession, we shouldn't just back down because it's another mandate. If it's a mandate that saves lives, it's a good mandate."

Fitzpatrick, who underwent surgery for cancer in October, is leaving Congress to comply with his pledge to serve no more than three consecutive terms. His younger brother, Brian, an attorney and a former FBI supervisory special agent in California, ran for his seat and won the election Nov. 8.

Brian will continue his brother's efforts on medical device review reform as well as increased safety standards. On the campaign trail, he pledged to "reform the FDA incident and compliant process so that patients are empowered to report faulty technology or treatments which have caused unintended harm—from Essure [a female permanent sterilization device] to power morcellators."

Reed and Noorchashm said they would continue to work closely with Brian Fitzpatrick on bringing the Guardians Act into law, even as Reed is recuperating from major abdominal cancer surgery. She has been scheduled for treatment of other metastatic lesions throughout her body in 2017.

"We are anxious to understand what the GAO report has to say about the power morcellator disaster," Reed and Noorchashm said. "Certainly, we believe that this report ought to reinforce the need for defining physicians as legally mandated reporters of safety concerns with medical devices, because the power morcellator disaster was, in fact, a result of a failure to report a deadly complication on the part of many professionals who knew of the problem quite well—some for well over 20 years.

"We are also pressing ahead with all possible immunotherapy, adjunctive therapy and chemotherapy options to cure the leiomyosarcoma that has affected our family."

Conversation with The Cancer Letter

FDA: For Hospitals that Significantly Violated Federal Adverse Event Reporting Requirement, No Additional Action Necessary

In a 17-institution inspection sparked by reports of patient harm and death resulting from power morcellators and contaminated duodenoscopes, FDA found that nearly all hospitals surveyed either failed to report adverse events or didn't have proper reporting and documentation procedures in place.

For some hospitals with significant violations of federal medical device reporting regulations, FDA officials said the agency received a response that was not adequate to address those violations.

"These hospitals indicated their willingness to work with us and address the violations, and at this time, we do not believe any additional action with regard to these hospitals is necessary," the agency said in response to questions from The Cancer Letter. "Hospitals also expressed willingness to work with us on more efficient and effective ways to collect the information we need."

FDA responded in writing to questions from Matthew Ong, a reporter with The Cancer Letter.

Matthew Ong: *In a letter to Rep. Mike Fitzpatrick (R-Pa.) March 29, FDA said it conducted an inspection of several hospitals, including Brigham & Women's, Rochester General, and the University of Rochester Medical Center (The Cancer Letter, April 15).*

I am aware that a number of these inspections have concluded—especially those that pertain to the power morcellator. What are the results of the inspections?

FDA: We cannot comment or confirm any criminal investigation into morcellators. In a separate action, the FDA's Office of Regulatory Affairs inspected 17 hospitals to assess their level of compliance with FDA's medical device reporting (MDR) regulation requirements, which mandate, among other things, that hospitals and other device user facilities submit a report to FDA and, if known, to the device manufacturer when the user facility becomes aware of information reasonably suggesting that a device has or may have caused or contributed to the death of a patient.

The agency inspected these 17 hospitals after learning that they may have had patient adverse events related to the possible spread of uterine cancer from use of power morcellators or infections associated with duodenoscopes and determining that corresponding medical device reports did not appear to have been made by the hospitals. Six of the 17 hospitals are MedSun program partners, which means the FDA entered an agreement with these facilities to report adverse events related to medical devices.

The FDA issued a Form FDA 483 to 15 U.S. hospitals to notify them of objectionable conditions relating to medical device reporting requirements observed at their facilities. The FDA plans to post redacted versions of the Form FDA 483s in the ORA FOIA Electronic Reading Room.

For some hospitals with significant violations of the MDR regulation, FDA received a response that we determined was not adequate to address those violations, and we engaged with these facilities to facilitate an effective path to voluntary compliance.

Here's a link to webpage, which has individual links to each of the Form FDA 483 reports issued to the 15 hospitals: http://www.fda.gov/downloads/MedicalDevices/ResourcesforYou/HealthCareProviders/UCM526194.pdf

MO: *What is FDA's response to observations gained from the inspections? Were the hospitals reviewed found to be non-compliant with the agency's reporting requirements?*

FDA: The observations noted during the inspections varied by facility but included observations that written medical device reporting (MDR) procedures had not been developed, maintained, and implemented. The chart posted

on the FDA's website provides more details on these observations.

Observations noted during the inspections also included failure to report to the FDA and/or the manufacturer within ten working days after becoming aware of information reasonably suggesting that a reportable event, such as when a device may have caused or contributed to the death of a patient of the facility, occurred.

It is important to note that Form FDA 483 lists observations made by the FDA representative(s) during the inspection of a facility. They do not represent a final agency determination regarding the facility's compliance.

MO: *What is FDA's rationale for not taking action against these hospitals? Also, is this in keeping with the agency's history of not criminally prosecuting for failure to report adverse events?*

FDA: For some hospitals with significant violations of the medical device reporting (MDR) regulation, FDA received a response that we determined was not adequate to address those violations, and we engaged with these facilities to facilitate an effective path to voluntary compliance.

These hospitals indicated their willingness to work with us and address the violations, and at this time, we do not believe any additional action with regard to these hospitals is necessary. Hospitals also expressed willingness to work with us on more efficient and effective ways to collect the information we need.

The FDA recognizes that device-related deaths and serious injuries that occur in hospitals and other device user facilities may involve nuanced and medically complex circumstances. For example, it may not be immediately apparent to health care providers that a patient's exposure to a device may have caused or contributed to that patient's death. Sometimes a patient death could occur at the hospital, months or even years after a patient's treatment at the facility using the device at issue.

Nevertheless, the FDA considers hospital reporting of device-related patient deaths and serious injuries to be critical to improving the safety of medical devices and improving patient care overall. We are seeking ways to improve this reporting system by increasing awareness of current medical device reporting requirements and challenges hospitals may face when trying to comply with those requirements.

We plan to partner with hospitals to educate them on the agency's medical device reporting requirements in order to improve their reporting of device-related adverse events.

MO: *During the inspection process, did FDA find no evidence of harm caused by power morcellators—or other medical devices—to patients?*

FDA: No. We have not changed our thinking on uterine power morcellators. The FDA continues to stand behind the November 2014 warning against the use of power morcellators for the vast majority of women undergoing removal of the uterus (hysterectomy) or fibroids (myomectomy) and continues to believe that the warning is appropriate.

The FDA has required a boxed warning for these devices and also for cleared containment bags to make it clear to patients and healthcare providers that the use of the containment bag has not been clinically demonstrated to reduce the risk of cancer spread during procedures that use power morcellators to remove tissue from the uterus.

MO: *How many staff members—or number of current FTEs—are in the division of FDA that reviews medical device adverse events reports? What is FDA's budget for that department?*

FDA: Medical device adverse event reports are reviewed by the Division of Postmarket Surveillance (DPS) in the Office of Surveillance and Biometrics. There are about 40 staff members in that division, though not all of them review medical device reports.

Here's a link to the website for more information on that division: http://www.fda.gov/medicaldevices/safety/cdrhpostmarketsurveillance/default.htm

MO: *Is there a backlog on the number of medical device reports that have not been reviewed, and how long does FDA take to go through the reports?*

FDA: FDA receives medical device reports on a continuous basis, and there is no backlog. Data from these reports are entered as quickly as possible into the FDA's database and are available for review by MDR analysts. Each report is reviewed, redacted, and posted on Public MAUDE.

FDA applies a risk-based approach to reviewing MDR reports, consistently reviewing 90 percent of death reports with five days; and 90 percent of Code Blue reports within 72 hours. Code blue MDRs are defined as high priority MDR reports based on criteria including but not limited to: pediatric deaths, multiple deaths and serious injuries, device explosions, and electrocution.

FDA reviews these reports as one of many data sources to identify signals and trends to inform and support decision making for both premarket and post-market activities.

Hackensack Cancer Center, MSKCC Form Business, Clinical Partnership in New Jersey

(Continued from page 1)

At a later stage, the two organizations intend to create a formal joint venture to own and operate new ambulatory care centers in areas of New Jersey they do not yet serve.

Hackensack Meridian Health operates the John Theurer Cancer Center at HackensackUMC in Hackensack. MSKCC has locations in Basking Ridge, Middletown, and Montvale, which will open in 2018.

"This momentous partnership between the world's first cancer hospital and New Jersey's premier hospital system will rewrite the future of cancer care in New Jersey," Craig Thompson, president and CEO of Memorial Sloan Kettering, said in a statement. "Together, we will provide the best quality and value-based care for our patients, discover new treatments for cancer, and train a new generation of physicians and health professionals for tomorrow."

MSKCC and Hackensack Meridian Health say they treat one in five New Jersey residents who are diagnosed with cancer. Combined, the two organizations annually will serve the most patients with cancer in the region.

The partnership illustrates the complexities of collaborations between cancer centers as they form business and academic collaborations, which sometimes converge and at other times follow separate paths.

In the academic sphere, John Theurer is developing a consortium cancer center with Georgetown University's Lombardi Comprehensive Cancer Center in Washington, and the two institutions and are planning to jointly apply for NCI designation in May 2018, which likely means that NCI would act on the application in the spring of 2019 (The Cancer Letter, July 17, 2015).

Also, in 2013, John Theurer and MedStar Georgetown University Hospital, Georgetown Lombardi's clinical partner, formed a blood and marrow stem cell transplant program at Georgetown.

The MSKCC deal doesn't affect the John Theurer collaboration with Georgetown and MedStar, said Andrew Pecora, president, Physician Services and chief innovation officer of Hackensack Meridian Health.

"The deal with Memorial is a business deal," Pecora said to The Cancer Letter. "It's a deal where we are going to share at the sites that we own currently the best practices in clinical care and be able to contract together to do value-based reimbursement, and also to discover, using Big Data and precision analytics what the best path of care is for a specific type of person.

"We are also going to purchase sites together and own them, as anticipated 50/50. And at the sites that we own together, we will co-operate them. It's a business relationship and a clinical care relationship."

The Georgetown relationship belongs in a different sphere, Pecora said.

"We are applying for consortium status under Georgetown's NCI-designated cancer center status," Pecora said. "Memorial, to whatever extent it can, will help us, because they think it's good that we ultimately get NCI designation, which we anticipate will happen."

Louis Weiner, director of Lombardi, similarly describes the relationship between his institution and John Theurer as primarily academic.

"They are 150 miles away from us. We don't have any clinical operations in New Jersey," Weiner said. "I view the relationship between MSKCC and Hackensack as a clinical and business relationship that will presumably protect their market shares and allow them to continue to do important patient care work in that area. I view it further as an opportunity for us to explore potential collaborative work in the research sphere with MSKCC down the road. It's not something we need to do now."

Competition between cancer centers is heating up in New Jersey, with the Cancer Institute of New Jersey, the University of Pennsylvania, and MD Anderson Cancer Center vying for market share.

"I was part of Vice President Joe Biden's initial moonshot initiatives," said Pecora. "The common theme is collaboration, coming together, sharing your data. What we are doing with Memorial is in line with that. We really believe in coming together, sharing idead, sharing our data on clinical care is going to profoundly improve outcomes and bring value to the ecosystem. And we are so big that it's going to have an effect not just locally, but probably nationally."

This is especially evident in the bone marrow transplantation programs.

"Our combined BMT programs will do almost 950 transplants," Pecora said. "Georgetown [where BMTs are performed in a collaboration with MedStar] is about 30, and MSKCC and Hackensack are both north of 400. These are huge programs, and you combine the two, and you integrate the datasets, and you study every little thing you are doing and you see antibiotic use, stay in the hospital, the number of x-rays you order, and you are not doing it prospectively—the machines do it—and you find incredible kernels of value with Big Data. And that's why MSKCC and us came together, because it gives us scale, unprecedented numbers, and there is a shared culture of excellence, and many of us know each other.

"As we all struggle as a nation to find a proper balance between precision medicine and population health, where in precision medicine the goal is to optimize the clinical outcome of every individual patient, and the goal of population health, at the end of the day, is to reduce the total cost of care for that population. How do you marry those two things? They seem, in some ways, contradictory. Well, they are not. With Big Data, with precision analytics, you start combining these things, and you can deliver on that promise, but you need large volumes to learn and to execute, and that's why we came together."

Physicians employed by Memorial Sloan Kettering and Hackensack Meridian Health — including the Hackensack Division of Regional Cancer Care Associates and physicians who participate in Hackensack Meridian Health's clinically integrated network — will continue to care for patients at their respective sites.

The partnership will be overseen by an Operating Board made up of representatives from each organization. That board will function with the advice of a formal clinical council, led by internationally recognized experts in all subtypes of cancer from Memorial Sloan Kettering, the John Theurer Cancer Center, and Hackensack Meridian Health, as well as a formal executive advisory group comprised of institutional leaders in key areas.

Editorial

The Year of the Moonshot

(Continued from page 1)

All of this is encouraging, but the details of implementation of this vision is what really matters. For starters, in Washington math, authorization doesn't equal appropriation. The details of how new funds reach their targets and who gets to control this process matter even more.

We look forward to providing robust coverage of these developments, week after week, as we have over the past 42 years.

In 2016, The Cancer Letter's reach expanded to 120 institutional subscribers and a growing number of individual subscribers.

This year, more advertisers have discovered that The Cancer Letter ends up on the desks and computer screens of the most important players in oncology, the pharmaceutical industry, funding and regulatory agencies, and advocacy groups.

This was a good year to make illustrations a part of The Cancer Letter. Our lead artist, Katherine Pavlovna Goldberg, had a fantastic time with all things moonshot. Check out the retrospective on the cover of this issue.

A Chicago-based illustrator and costume designer, Katie earned an MFA degree from the North Carolina School of the Arts earlier this year. Now, a disclosure: Katie is my daughter. She grew up with this stuff.

Throughout the year, Matthew Bin Han Ong has led coverage of the moonshot efforts as they affected NCI, NIH, FDA, Congress, Big Data and beyond. Matt, or Scoop, as he is known around the office, has banged out 50 of the 64 moonshot stories we have published. Arguably, this is more moonshot coverage than you will find anyplace else on this planet.

And here they are.

This year, Scoop won four journalism awards: the first place Dateline Award from the Washington, D.C. Chapter of the Society of Professional Journalists for his series titled "How Medical Devices Do Harm." His haul also includes the Best in Business Award for Outstanding Business Journalism, Society of American Business Editors and Writers (second place); the Health Care Journalism Award of the National Institute for Health Care Management Foundation (finalist), and the Azbee Award of Excellence, American Society of Business Publication Editors (second place).

Another notable piece of journalism was written by an intern, Laura Brawley, who spent the summer of 2016 in our offices, after finishing her first year at the University of Chicago. Laura produced an overview of development of drugs that target the PD-1 protein and its ligands, PD-L1 and PD-L2 (The Cancer Letter, Oct. 7). She found an unprecedented development effort, with 803 registered clinical trials testing 20 of these checkpoint inhibitors. The trials, in various stages of completion, had slots for 166,736 patients. Laura's project—and FDA's detailed response (The Cancer Letter, Nov. 11)—are required reading for anyone involved in development of cancer drugs.

We published Slamming the Door, a 14-part series that re-examined the concurrent controversies at the Cancer Prevention and Research Institute of Texas and MD Anderson Cancer Center. This examination was possible in part because of insight provided by Alfred Gilman, the Nobel laureate who served as the first scientific director of the state institution that distributes $300 million a year. Gilman died on Dec. 23, 2015.

We have been upgrading The Cancer Letter's website and information systems. This has been a slow process, but it's getting done. And—you heard it here first—we have redesigned the PDF version of The Cancer Letter.

You will see it next month.

Until now, anyone who had a question was likely to get a callback from yours truly. I've always enjoyed this part of my job. We have grown sufficiently that I have to give it up, but I remain as reachable as I have always been.

The Cancer Letter now has a general manager, Angela Spring, who comes to us from Politics & Prose, Washington's premier independent book store, where, as the sales floor manager, she oversaw a staff of 18 unruly intellectuals.

Angela, who is hyper-organized, has taken over the upkeep of The Cancer Letter's subscription database, customer service, advertising and production.

As 2016 ends, we look forward to covering the changes mandated by the new order in Washington—and helping our readers adjust, reorient and regroup.

Follow us on Twitter: @TheCancerLetter

Obama Signs Cures Act, Funding Biden's Moonshot And Boosting NIH, NCI, FDA Budgets Over 10 Years

(Continued from page 1)

The legislation, a $6.3 billion health care reform measure designed to accelerate drug development and modernize clinical trials, was signed into law during an unusual legislative period.

The federal government is running on its second FY 2017 continuing resolution, which was approved by a lame-duck, GOP-led Congress determined to align funding priorities with President-Elect Donald Trump's administration (The Cancer Letter, Nov. 18).

"I started the 2016 State of the Union address by saying we might be able to surprise some cynics and deliver bipartisan action on the opioid epidemic," Obama said at the signing ceremony Dec. 13. "And in that same speech, I put Joe in charge of mission control on a new Cancer Moonshot.

"And today, with the 21st Century Cures Act, we are making good on both of those efforts. We are bringing to reality the possibility of new breakthroughs to some of the greatest health challenges of our time."

Biden praised lawmakers for their bipartisan work on the bill. The moonshot initiative, renamed "Beau Biden Cancer Moonshot," will be implemented through targeted, multi-year funding authorized through the Cures Act (The Cancer Letter, Dec. 9).

"When the president asked me last year at the State of the Union to head the Cancer Moonshot, we said we were going to ask you all for significant funding increases at the NIH and the NCI," Biden said at the signing ceremony. "And you all stepped up again, Republicans and Democrats.

"As part of the moonshot, we set up what's called a Blue Ribbon Panel to review what should be the scientific priorities as we tackle this to try to end cancer as we know it. We'll try to do in the next five years what ordinarily would take ten years."

Of the $4.3 billion authorized for NIH in the Cures Act, the moonshot immediately received $300 million under the current CR, the full amount available for cancer research in fiscal 2017. The Precision Medicine and BRAIN Initiatives respectively received $40 million and $10 million in FY 2017.

"This past week, we witnessed President Obama sign the 21st Century Cures Act into law," Ellen Sigal, chair and founder of Friends of Cancer Research, said

to The Cancer Letter. "This never would have been accomplished without the hard work of Reps. Fred Upton (R-Mich.) and Diana DeGette (D-Colo.) who have spent many years developing the bill, as well as Senators Lamar Alexander (R-Tenn.) and Patty Murray (D-Wash.) whose tireless dedication helped make sure the bill would be passed. For that, I, and the millions of patients across the country who will benefit from this bill, thank them.

"I see the signing of this bill as a monumental victory for not only patients, but Congress who put partisan politics aside for the sake of what's right for patients. It was with Vice President Biden's heroic leadership that FDA will now get essential resources for implementing innovative new programs, such as the FDA Oncology Center of Excellence, and patients will now be put first by operationalizing their input into research. Without the Vice President's determination and fortitude, critical initiatives, such as the Cancer Moonshot, the President's Personalized Medicine Initiative, and the BRAIN Initiative at NIH would not be funded."

FDA: We Will Have an Implementation Plan

FDA received $20 million in FY 2017, out of the $500 million slated for FDA over the next nine years to enable competitive recruiting and to fund legislative changes to FDA's regulatory processes.

The latter sparked vocal opposition to the Cures Act by a number of Democrats and consumer advocacy groups (The Cancer Letter, Dec. 2).

"Cures will greatly improve FDA's ability to hire and retain scientific experts," wrote FDA Commissioner Robert Califf in a blog post Dec. 13. "One of our ongoing challenges has been recruiting and retaining the experts we need in specialized areas to allow us to get our work done and meet our growing responsibilities.

"Cures will also support our efforts to modernize and improve efficiency in clinical trial design. This has been an important FDA priority for decades, but exciting new approaches are now available, and we need to develop a common understanding of which designs should be used for which clinical issues.

"In cancer, for example, we're already weighing the use of common control trials, which share a control arm, involve multiple different drugs for the same indication, and may even involve different companies. One of the benefits of using a common control arm is that the overall number of patients who need to be recruited and enrolled decreases, thereby optimizing clinical trial resources and potentially shortening the time it takes to get a new study off the ground."

The Cures Act, with provisions defining novel clinical trial designs and the use of real world evidence in the regulatory setting, has "significant implications" for the agency, said Janet Woodcock, director of the Center for Drug Evaluation and Research.

"The 21st Century Cures Act increases funding for NIH, including the 'Precision Medicine' initiative, and provides a billion dollars over two years to the states to supplement opioid abuse prevention and treatment activities," Woodcock wrote in an email to CDER staff Dec. 15. "It also contains a number of provisions that impact the medical product Centers at FDA. The Act provides $500 million over 10 years to FDA to carry out activities in Title III of the Act, which is focused on medical product development.

"Title III has provisions on patient-focused drug development, qualification of drug development tools, continuous manufacturing of pharmaceuticals, novel clinical trial designs, use of real world evidence in the regulatory setting, and antimicrobial drug development, among others. It also has a section on expansion of the Senior Biomedical Research Service, and additional hiring authorities for FDA.

"CDER leadership has been working with the administration and Congress in providing technical assistance for many of these provisions, so they are familiar to us. A number of them reflect initiatives we have been working on for many years, such as the qualification processes. By instantiating these in statutory provisions, Congress is effectively making these part of our mission."

The agency will share its implementation plan for relevant provisions in the Cure Act, Woodcock said.

"The agency, and CDER, are currently conducting a detailed analysis of the provisions of this Act. Once we have them analyzed and have an implementation plan, we will share this with everyone," Woodcock wrote in the email. "I believe that the patient-focused drug development and drug development tools provisions will have the most significant impact on our work, in the sense that they will require additional processes and procedures to be put into place. We have begun considering how to do this.

"I want to thank Associate Director for Legislative Affairs Bob Guidos for spearheading this complex effort. Bob played a key role in our interactions with Congress, and was particularly instrumental in stressing our need to hire and retain high-quality

scientific and professional staff. I believe he made a real difference."

ASCO: Cures Addresses Data Interoperability

The Cures Act reduces some of the major barriers to advancing cancer research, said Clifford Hudis, CEO of the American Society of Clinical Oncology.

"This historic legislation brings new hope to millions of Americans facing life-threatening diseases and to their families," Hudis said in a statement. "Enacting 21st Century Cures is a momentous achievement and, potentially, an important pivot point for cancer research progress."

The Cures Act contains priorities that ASCO has advocated for, including:

- Addressing the interoperability of electronic health records and restricting intentional information blocking to make it easier to coordinate patient care and advance big data and precision medicine efforts,
- Requiring drug companies to make available public information about their expanded access plans after Phase II and Phase III clinical trials so that patients and providers can more easy get access to promising new treatments,
- Improving the way research is conducted by requiring the use of centralized Institutional Review Boards when appropriate, encouraging data standardization, and bringing the patient voice into the drug development process, and
- Additional provisions of interest to ASCO members, including providing a site neutrality exemption for certain cancer center outpatient departments, increasing transparency around the Local Coverage Determination Process, advancing guidance on incorporating novel clinical trial design into new drug applications, and authorizing funding for states to address the opioid crisis, among other measures.

"As the vice president has highlighted throughout 2016, we are at an inflection point in cancer research, which is the result of decades of dedicated efforts to increase our knowledge and understanding of the more than 200 diseases called cancer," said Nancy Davidson, president of the American Association for Cancer Research and executive director of the Fred Hutch/University of Washington Cancer Consortium. "There are 15.5 million cancer survivors who are alive today because of cancer research.

"Today's action by President Obama provides us with a down payment for the resources necessary to save more lives from cancer."

In Brief

Bertagnolli Elected ASCO President

MONICA BERTAGNOLLI was elected **president of the American Society of Clinical Oncology** for the term beginning in June 2018.

She will take office as president-elect during the ASCO annual meeting in Chicago in June 2017. Additionally, three new members were elected to the ASCO board of directors, as well as two new members to the ASCO nominating committee.

"Serving as ASCO president is a tremendous personal honor for anyone in the field of oncology," Bertagnolli said in a statement. "Much more importantly, it is an opportunity for me to make a meaningful difference by providing a strong voice in the health care community for those whom I consider to be my particular constituency: clinical and translational researchers, community and academic oncologists participating in clinical research and surgical oncologists."

Bertagnolli is chief of the Division of Surgical Oncology at Dana-Farber/Brigham and Women's Cancer Center, a professor of surgery at Harvard Medical School, and an associate surgeon at Brigham and Women's Hospital and Dana-Farber Cancer Institute. Bertagnolli has served on the ASCO board of directors, the Cancer Prevention Committee, and the Strategic Planning Committee.

She will be the first ASCO President-Elect to serve four years on the ASCO Board (first year as president-elect, second year as president and chair of the board, third year as chair of the board, and fourth year as past president), following the bylaws changes that were approved by members in May 2016.

The following physicians will begin four-year terms as members of ASCO's board of directors starting in June 2017:

- **Reshma Jagsi** was elected to an undesignated specialty seat. She is professor and deputy chair of the Department of Radiation Oncology at the University of Michigan, where she is residency program director, treats patients with breast cancer, and conducts health services research. An ASCO member since 2004, Jagsi has served on the CancerLinQ Data Governance Oversight Committee, the Bisphosphonates in Breast Cancer and Breast Cancer Consensus Panels, the Scientific Program Committee and the Journal of Clinical Oncology editorial board. She is also a past chair of the Ethics Committee.

- **Michael Kosty** was elected to a community oncologist seat. Kosty is a member of the Scripps Clinic Medical Group, where he has practiced hematology and medical oncology since 1989, and is currently the director of Scripps Green Cancer Center and the director of graduate medical education and the hematology/oncology fellow training program at Scripps Clinic/Scripps Green Hospital. Since joining ASCO in 1986, Kosty has served as the chair of the Cancer Education Committee Continuing Medical Education Subcommittee, the Workforce Advisory Group, and the Professional Development Committee Oncology Training Program Subcommittee, as well as a member of the Scientific Program Committee and Bylaws Committee, among others. He is currently chair-elect of the Professional Development Committee and a member of the Leadership Development Working Group, and was recently the ASCO Lead for the NCI-ASCO Teams in Cancer Care project. In recognition of his years of service to the Society, Kosty received the distinction of Fellow of ASCO (FASCO) in 2014.

- **Eric Small** was elected to a Medical Oncologist seat. Dr. Small is the deputy director of the UCSF Helen Diller Family Comprehensive Cancer Center, chief of the Division of Hematology and Oncology in the Department of Medicine at the University of California, San Francisco, and professor in residence in the Department of Medicine and Department of Urology. He has held several volunteer and leadership positions since he joined ASCO in 1992, including associate editor of the *J*ournal of Clinical Oncology; chair of the Molecular Markers Scientific Committee, the Scientific Program Committee, and the inaugural Prostate Cancer Symposium Steering and Program Committees; and a member of the ASCO Nominating Committee and the Conquer Cancer Foundation Grants Selection Committee. Small was named a Fellow of ASCO (FASCO) in 2015.

The following physicians will each serve a three-year term on the ASCO nominating committee:

- **Cora Sternberg** will serve as chair of the Nominating Committee in 2019-2020. Sternberg is the chief of the Department of Medical Oncology at the San Camillo-Forlanini Hospital in Rome, adjunct professor at La Sapienza University in Rome, adjunct professor of Urology and Urological Oncology at Tufts University Medical School, and adjunct professor at Temple University's College of Science and Technology. Sternberg has served ASCO in a variety of capacities. She was the scientific chair of the Prostate Cancer Symposium program committee, ASCO's representative to the Prostate Cancer Symposium Steering Committee, a member of the Genitourinary

Symposium Program Committee, and a member of the International Affairs Committee Advisory Group. Sternberg was the genitourinary cancer track leader of the Scientific Program Committee for the 2014 ASCO Annual Meeting and has also served on the editorial board of the Journal of Clinical Oncology.

- **Debra Patt**, vice president of public policy and academic affairs at Texas Oncology and a medical oncologist at Texas Oncology Cancer Center. Patt also serves as the medical director of the pathways task force at McKesson Specialty Health/ The US Oncology Network, the medical director of publications and outcomes at McKesson Specialty Health, the medical director of the breast cancer committee at Seton Family of Hospitals, and the leader of breast health services for The University of Texas Dell Medical School at Austin. Patt joined ASCO in 2005 and is currently the breast cancer track leader for the Cancer Education Committee, chair of the Clinical Practice Committee, and editor-in-chief of JCO Clinical Cancer Informatics and ASCO's Clinical Cancer Advances report.

THE OBAMA ADMINISTRATION has abandoned its controversial plan to change the way **Medicare** pays for drugs.

The decision to abandon the proposal called the Medicare Part B Drug Payment Model was announced late Dec. 15. The model ran into opposition from the pharmaceutical lobby, physician groups, Republicans and many Democrats on Capitol Hill.

With the election of Donald Trump, it was virtually certain that the experiment wouldn't be politically viable.

"After considering comments, CMS will not finalize the Medicare Part B Drug Payment Model during this Administration," the Centers for Medicare and Medicaid Services said in a statement. "While there was a great deal of support from some, a number of stakeholders expressed strong concerns about the Model," Albright added. "While CMS was working to address these concerns, the complexity of the issues and the limited time available led to the decision not to finalize the rule at this time."

ROBERT MAKI, a physician and researcher specializing in sarcoma cancer, joined the leadership of **Northwell Health** and **Cold Spring Harbor Laboratory**.

Based at the Monter Cancer Center in Lake Success, Maki serves as director of experimental therapeutics of the Don Monti Division of Medical Oncology and Hematology at North Shore University Hospital and Long Island Jewish (LIJ) Medical Center, and director of the Center for New Cancer Therapies at the Northwell Health Cancer Institute.

Maki is a professor of hematology/oncology at the Hofstra Northwell School of Medicine and professor and member of the NCI-designated Cancer Center at Cold Spring Harbor Laboratory.

He will play a key role in the strategic affiliation between Northwell and CSHL, which was established in 2015 to accelerate cancer research, diagnosis and treatment. Maki's position as director includes building a portfolio of clinical research and exploring therapeutics for all cancers, which will increase cutting-edge treatment options for patients throughout the healthcare system.

Additionally, he will oversee the expansion of the basic and translational sarcoma cancer research program in collaboration with CSHL.

Maki joined Northwell Health from Mount Sinai Medical Center, where he was medical director of the Sarcoma Cancer Program in The Tisch Cancer Institute and also chief of the Pediatric Hematology/Oncology Division. Previously, Maki served as co-director of the Adult Sarcoma Program at Memorial Sloan Kettering Cancer Center.

Every year, Northwell Health treats more than 16,000 patients with cancer, giving patients access to the services of more than 200 physicians in more than 25 sub-specialties.

ELLIS NEUFELD was appointed clinical director, physician-in-chief and executive vice president of **St. Jude Children's Research Hospital**.

Beginning in March 2017, Neufeld will oversee the organization's academic clinical departments and all clinical operations. The appointment comes as St. Jude looks to increase the number of cancer patients treated at its campus and on protocols around the world.

An expert in pediatric hematology, Neufeld comes to St. Jude from Harvard Medical School, where he most recently served as associate chief of the Division of Hematology/Oncology at Dana-Farber/ Boston Children's Cancer and Blood Disorders Center.

Neufeld was also medical director at the Boston Hemophilia Center and held the Egan Family Foundation Chair in Transitional Medicine at Harvard Medical School as a professor of pediatrics.

BILL ANDERSON was named **CEO of Genentech**, which is a member of the Roche Group, effective Jan. 1, 2017.

He takes over from Ian T. Clark who retires at the end of 2016 after 14 years of service.

Anderson, who is also the head of North American commercial operations, has served in a number of key leadership positions at Genentech and Roche over the past 10 years, most recently as head of Global Product Strategy.

DONALD BROWN donated $30 million to **Indiana University School of Medicine** to establish the Brown Center for Immunotherapy.

The Brown Center for Immunotherapy will initially focus on multiple myeloma and triple negative breast cancer, two diseases for which the School of Medicine and its clinical partner Indiana University Health have a strong foundation of talent, sizable patient populations and existing resources that can be leveraged to maximize impact.

Researchers will also investigate potential opportunities to prevent and treat Alzheimer's disease and other neurodegenerative disorders with immunotherapies.

The gift is the IU School of Medicine's largest ever from an alumnus. Brown graduated in 1985 from the IU School of Medicine and has founded three software companies.

Of the $30 million gift, $13 million will be directed to establish five endowed faculty chairs. Thanks to a gift-matching program that is part of For All: The Indiana University Bicentennial Campaign, the financial support available from the endowed funds each year will essentially be doubled.

The director of the center will hold the Don Brown Chair in Immunotherapy. Other chairs that will support center leadership are named after four of Brown's eight children: the Paige Brown Chair in Experimental Therapeutics, the Nicole Brown Chair in Immunology, the Christopher Brown Chair in Immunology and the David Brown Chair in Genomic Medicine. The remainder of the gift will be used to invest in infrastructure and technologies and to fund research.

Brown launched his first software company while still in medical school. Dealership Programming Inc. allowed car dealerships to calculate monthly payments for consumers financing their vehicles.

In 1988 he co-founded Software Artistry Inc., a developer of customer support software. He left to start Interactive Intelligence in 1994. Software Artistry became the first Indiana software company to go public in 1995 and was acquired by IBM in 1998.

Brown grew Interactive Intelligence into a national leader in call center and communication technologies, enabling businesses to improve customer service and productivity. He took the company public in 1999 and led the charge to migrate their software onto a cloud-based platform before most others in the industry had contemplated such a move.

The company was acquired on Dec. 1 by Genesys Telecommunications Laboratories Inc. for $1.4 billion.

JAMES AND MIRIAM MULVA and the Mulva Family Foundation donated $50 million to advance neuroscience at UT Austin and another $25 million for cancer research at **MD Anderson Cancer Center**.

The total $75 million gift to the two UT institutions will advance health care in Texas and globally.

The $25 million grant supports MD Anderson's efforts in melanoma and prostate cancer under the direction of Patrick Hwu, chair of Melanoma Medical Oncology, and Christopher Logothetis, chair of Genitourinary Medical Oncology.

Both melanoma and prostate cancer are diseases included in MD Anderson's Moon Shots Program which is a goal-oriented and comprehensive effort that launched in 2012 to significantly reduce cancer deaths and transform care. The gift, to be divided equally, is designed to accelerate the conquest of these two aggressive cancers and change the standard of care for patients around the world.

The $50 million grant creates the Mulva Clinic for the Neurosciences, which will be located at the Dell Medical School at UT Austin.

The Mulva Clinic will underwrite neuroscience patient care, research and clinical operations, with a special emphasis initially on Alzheimer's disease, Parkinson's disease, stroke and bipolar disorder.

Jim Mulva is past chairman and CEO of ConocoPhillips, a graduate of UT Austin and chair of the MD Anderson Cancer Center Board of Visitors. Miriam Mulva is a graduate of St. Norbert College near Green Bay, Wisconsin. Both are Texas residents.

FRANCIS COLLINS, the NIH director, received the **2017 Public Service Award** from the Federation of American Societies for Experimental Biology "for his outstanding accomplishments in the communication of science."

"Francis Collins is a model of scientific citizenship. His passion for public education has been an inspiration, and his leadership has motivated thousands of scientists to join him in public outreach. His tireless efforts have earned him our admiration and gratitude," said Hudson Freeze, FASEB president.

The FASEB Public Service Award recognizes individuals who have made significant contributions to the cause of biological and medical research through their work in government, public affairs, journalism, science policy, or related fields.

"Whether on camera, in print, online, or in song, Francis has the remarkable ability to explain complex scientific concepts to general audiences. These extraordinary efforts to underscore the importance of research, combined with his compassion for those in need of new medical interventions, have earned the respect and trust of Americans from all segments of society," Freeze said.

PROTON PARTNERS INTERNATIONAL LTD will invest £30 million in a new cancer center which will be located at the **Thames Valley Science Park, UK**, offering proton beam therapy among other conventional cancer therapies.

Located in Reading, Berkshire, the center will be the third to be built in the UK by Proton Partners and will help to meet growing demand for proton beam therapy, which is not yet available in the UK. The other two centers, which are still under construction, are in Newport, Wales and Bomarsund, Northumberland.

The Reading center will include facilities for proton beam therapy, a linear accelerator, as well as a CT suite and an MRI. It is expected that each Proton Partners center will be able to treat up to 500 patients a year and will accept NHS patients, medically-insured private patients and self-paying patients.

THE ASSOCIATION OF COMMUNITY CANCER CENTERS, partnered with the Avon Breast Cancer Crusade, the Cancer Support Community, and the Metastatic Breast Cancer Alliance, announced the launch of a website designed to provide educational information supporting patients diagnosed with **metastatic breast cancer**.

The site pulls together vetted tools and resources to support patient engagement and education, links to the latest information about metastatic breast cancer, and serves as a resource for providers as well.

The site is part of a broader initiative, launched earlier this year, with funding and support provided by Pfizer Oncology, to expand the current conversation about breast cancer and address the specific needs of patients diagnosed with advanced stage breast cancer.

Resources available on the Metastatic Breast Cancer: Resources and Tools for the Multidisciplinary Team site include:

The Cancer Experience Registry—a tool to identify and advance the understanding of the emotional and social needs of people living with cancer and their caregivers.

The Dandelion Project—a first-of-its-kind approach to information for metastatic breast cancer patients and their families, designed using a unique set of visual tools that will help address the existing communications challenges, increase patient engagement, and facilitate alignment of patient and healthcare team goals.

Metastatic Breast Cancer: Effective Principles & Practices in Patient Support workbook—a guide to help health care professionals identify effective tools and resources for supporting patients with MBC.

Drugs & Targets

Keytruda becomes first anti-PD-1 therapy to receive a CHMP positive opinion for previously untreated NSCLC

MERCK announced that the **Committee for Medicinal Products for Human Use** of the European Medicines Agency adopted a positive opinion recommending approval of Keytruda (pembrolizumab) for the first-line treatment of metastatic non-small cell lung cancer in adults whose tumors have high PD-L1 expression (tumor proportion score [TPS] of 50 percent or more) with no EGFR or ALK positive tumor mutations.

The recommendation will now be reviewed by the European Commission for marketing authorization in the European Union. A final decision is expected in the first quarter of 2017.

Keytruda is approved in Europe for the second-

line treatment of patients with locally advanced or metastatic NSCLC whose tumors express PD-L1 and who have received at least one prior chemotherapy regimen. Patients with EGFR or ALK positive tumor mutations should also have received targeted therapy before receiving Keytruda.

The positive opinion is based on data from KEYNOTE-024, a pivotal study which demonstrated superior overall survival and progression-free survival with Keytruda compared to chemotherapy in patients whose tumors expressed high levels of PD-L1 with no EGFR or ALK positive tumor mutations.

KEYNOTE-024 is a randomized, open-label, phase 3 study evaluating KEYTRUDA monotherapy at a fixed dose of 200 mg compared to standard of care platinum-containing chemotherapy for the treatment of patients with both squamous and non-squamous metastatic NSCLC.

The study enrolled patients who had not received prior systemic chemotherapy treatment for their metastatic disease and whose tumors had high PD-L1 expression with no EGFR or ALK aberrations.

In the US, Keytruda is approved for indications that include melanoma, lung cancer, and head and neck cancer.

NINTEDANIB was granted **orphan drug designation** for the treatment of mesothelioma.

The agent is sponsored by Boehringer Ingelheim

Nintedanib is an oral triple angiokinase inhibitor which simultaneously inhibits vascular endothelial growth factor receptors (VEGFR 1-3), platelet-derived growth factor receptors (PDGFR) and fibroblast growth factor receptors (FGFR 1-3) signaling pathways. These three different angiokinase receptors, which are not yet targeted by any currently available therapies, play an important role not only in angiogenesis but also in tumor growth and the development of metastases.

Nintedanib was granted the designation based in part on data from the phase II cohort of the ongoing phase II/III LUME-Meso trial. LUME-Meso is an international, multicenter, randomized, double-blind, placebo-controlled trial evaluating the efficacy and safety profile of nintedanib plus chemotherapy (pemetrexed/cisplatin) followed by nintedanib monotherapy, versus placebo plus chemotherapy (pemetrexed/cisplatin) followed by placebo monotherapy, in patients with histologically confirmed, unresectable MPM.

Clinically meaningful results from the LUME-Meso phase II trial in patients with unresectable MPM were presented in an oral session at the 17th IASLC World Conference on Lung Cancer in Vienna Dec. 7.

ABILITY PHARMACEUTICALS of Barcelona, Spain, received orphan-drug designation from FDA for ABTL0812, for the treatment of **pancreatic cancer**. This regulatory milestone comes after the ODD in the pediatric cancer neuroblastoma granted by EMA and FDA in 2015.

In preclinical studies, ABTL0812 have shown efficacy in pancreatic cancer as single agent and synergistic effect (by 8 to 90 times) in combination with taxanes, platinum compounds and gemcitabine, with induction of tumor regression without increasing the toxicity associated with chemotherapy. First line therapy in patients with either locally advanced or metastatic pancreatic cancer includes these compounds, and administered in combination with ABTL0812 could greatly improve the treatment outcome.

ABTL0812 is currently in phase 2 as first line therapy in combination with chemotherapy in patients with endometrial or squamous lung cancer at Vall d'Hebron Institute of Oncology (VHIO) and Catalan Institute of Oncology (ICO) in Barcelona.

ABTL0812, currently in phase 2 of clinical development, causes cell death by autophagy through the overexpression of TRIB3, an endogenous Akt regulator. It is a first in class fully differentiated oral targeted anticancer compound inhibiting the PI3K/Akt/mTOR pathway without being a direct kinase inhibitor. Its unique mechanism of action was published at Clinical Cancer Research in 2015.

In the phase I/Ib clinical trial (29 patients), ABTL0812 showed the best safety and tolerability compared to other inhibitors of the pathway; without dose-limiting toxicities. The efficacy was comparable to the best PI3K/Akt/mTOR inhibitors; remarkably 2 patients had extremely long disease stabilizations (14 and 18 months).