



**TESTIMONY
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**BEFORE THE
SUBCOMMITTEE ON HEALTH
HOUSE ENERGY AND COMMERCE COMMITTEE
U.S. HOUSE OF REPRESENTATIVES**

**IMPLEMENTING THE 21ST CENTURY CURES ACT:
AN UPDATE FROM FDA AND NIH**

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RELEASE ONLY UPON DELIVERY

Chairman Burgess, Ranking Member Green, and Members of the Subcommittee:

Thank you for the opportunity to testify today on FDA's implementation of the 21st Century Cures Act (Cures Act), almost one year after the law's enactment.

The Cures Act was a significant legislative achievement that coincided with a distinctive moment in medicine and technology. This legislation grew out of a bipartisan, bicameral recognition that we are at a moment in science when we have more opportunity to fundamentally alter the course of many human ailments and even cure diseases or reverse the effects of injury and illness.

The Cures Act includes provisions that have the potential to impart far-reaching effects on scientific advancements in medical product development. The new law complements many efforts underway at FDA, all aimed at transforming the way we support product development and marketing authorization and solidifying FDA's gold standard for safety and effectiveness.

Implementation Overview

The Cures Act provides the Agency with important tools that help us continue to meet our mission to protect and promote the public health. As such, it has been a top priority of mine to ensure timely implementation so patients can realize the benefits of this new law. By providing product developers a clear and predictable path for new advances, patients and consumers can realize the benefits of innovations while maintaining confidence that the resulting medical products are safe and effective.

The aim of these policies is to improve patient access to innovative medical products while continuing to protect those who rely on these products. The provisions help FDA in its commitment to continue taking a fresh look at how we regulate products developed through truly novel medical advances to ensure that FDA is encouraging their development and creating efficient, risk-based pathways.

Our implementation of the Cures Act has been integrated into our broader agency efforts. From day one, FDA has worked across medical product centers and offices to fully implement the law and build on its provisions. FDA's headway in pursuing the opportunities enabled by the Cures Act illustrates the Agency's enthusiasm and commitment to the spirit and letter of the law's provisions.

Practically, we have facilitated this through the creation of an intra-agency steering committee to ensure a coordinated approach to implementation. This steering committee, working with subject matter experts in the relevant Centers and offices, helps guide the Agency's timely implementation of the Cures Act provisions. It is led by FDA Office of Commissioner staff ensuring a high-level focus on the implementation of the Cures Act.

The steering committee's first task was to develop the Agency's required work plan to explain the approach we intended to take to implement certain provisions of the Cures Act, both now and in future years. The resulting work plan lays out our vision for the \$500 million in authorized

new funds over nine years, if appropriated, that is included in the law.¹ The steering committee also conducted an analysis of the law's provisions and compiled a list of all FDA-related requirements. The steering committee uses these documents to ensure transparency with the public on our progress by maintaining a website on the Cures Act, as well as a public tracker of deliverables required by the Cures Act. The current tracker lists our commitments and progress towards fulfilling them.² This public information allows a wide range of stakeholders to keep up with our implementation efforts.

We also have worked with our colleagues at the Department and other Health and Human Services (HHS) agencies, such as the National Institutes of Health (NIH), to implement crosscutting provisions. For example, FDA's Office of Women's Health has collaborated with NIH and others on the Task Force on Research Specific to Pregnant Women and Lactating Women to help improve the availability of information available to providers and patients for making evidence-based treatment decisions.

Throughout the implementation process, FDA has utilized our new authorities in the Cures Act to pursue new ways to improve the climate for innovation and advance products to those who need them. In doing so, we have challenged ourselves to look at how we can make the development process more efficient by modernizing our processes and removing obstacles that add to time and cost without meaningfully improving our knowledge about safety and effectiveness.

Implementation Updates

Oncology Center for Excellence

One of our first achievements under the Cures Act was to stand up FDA's new Oncology Center for Excellence (OCE). The OCE marks a shift in FDA's traditional operating structure. It creates cross-center teams to work together to examine products to treat cancer. Rather than focusing on the primary mechanism of action, or on the kind of product platform being used, teams are grouped based on their deep understanding of the disease.

This approach to product review already has had an impact in the setting of oncology—in August, FDA approved the first cell-based gene therapy ever in the U.S. to treat certain children and young adults with B-cell acute lymphoblastic leukemia. A second product to treat adult patients with certain types of large B-cell lymphoma was approved in October. Both products had clinical reviews conducted by the OCE, while our Center for Biologics Evaluation and Research (CBER) conducted all other aspects of review and made the final product approval determinations.

¹ The Cures Act Work Plan can be accessed here:

<https://www.fda.gov/downloads/RegulatoryInformation/LawsEnforcedbyFDA/SignificantAmendmentstotheFDCAAct/21stCenturyCuresAct/UCM562852.pdf>.

² The Cures Act Deliverables Tracker can be found on our Cures Act webpage and accessed here:

<https://www.fda.gov/RegulatoryInformation/LawsEnforcedbyFDA/SignificantAmendmentstotheFDCAAct/21stCenturyCuresAct/ucm562475.htm21>.

This is an organizational model that we seek to adopt in other settings. We are evaluating the creation of additional disease-specific offices as part of a more modern approach to the Office of New Drugs (OND) in the Center for Drug Evaluation and Research (CDER). Some of the areas under consideration are immunology and neuroscience. The goals are to provide stakeholders with a single point of contact and to foster synergies and surge capacity across different offices.

Minimal Risk Clinical Investigations

Another cross-cutting initiative has been to produce guidance related to section 3024 of the Cures Act. This section provides FDA with the authority to permit an exception from informed consent for minimal risk clinical investigations when specific criteria are met. Our medical product centers for biologics, drugs, and devices partnered with our Office of Good Clinical Practice and Office of Counterterrorism and Emerging Threats to issue a final guidance related to this provision in July. The guidance will facilitate the conduct of certain minimal risk clinical investigations that are important to address significant public health needs without compromising the rights, safety, or welfare of human subjects.

Regenerative Medicine

One of the most promising new fields of science and medicine is the area of cell therapies and their use in regenerative medicine. These new technologies, most of which are in early stages of development, hold significant promise for transformative and potentially curative treatments for some of humanity's most troubling and intractable maladies.

The Cures Act recognized these opportunities and highlighted the need to establish enhanced pathways for these promising therapies. Immediately after the law passed, CBER moved quickly to establish the Regenerative Medicine Advanced Therapy (RMAT) designation program, as authorized in section 3033. This program aims to facilitate an efficient development program, expedited review of innovative regenerative medicine therapies, and provide more timely access to potentially life-saving products. Products granted designation are eligible for increased early interactions with FDA, including all the benefits available to breakthrough therapies. As of October 31, FDA had granted 11 RMAT designations.

Building on these activities, a few weeks ago, FDA announced the Agency's Comprehensive Policy Framework for Regenerative Medicine. The framework clarifies the Agency's current risk-based, flexible regulatory approach and implements provisions of the Cures Act related to regenerative medicine through a series of two final and two draft guidance documents. When finalized, the draft guidances will further assist in the development of innovative regenerative medicine therapies. The first draft guidance document addresses expedited programs for regenerative medicine therapies products, including the new RMAT designation program, while the other addresses devices used in recovery, isolation, or delivery of RMAT products.

In particular, the draft guidance on expedited programs describes regenerative medicine therapies eligible for RMAT designation as including cell therapies, therapeutic tissue engineering products, human cell and tissue products, and combination products using certain such therapies

or products, as well as gene therapies that lead to a durable modification of cells or tissues (including genetically modified cells). For example, CAR-T products, which represent a durable modification to certain T-cells of their recipients, have been considered by FDA to be a form of gene therapy. Therefore, RMAT designation is available to CAR-T products that meet the other criteria for designation.

CBER is also working to facilitate an effort to coordinate and prioritize the development of standards and consensus definitions of terms to support the development, evaluation, and review of regenerative medicine therapies and regenerative advanced therapies, including with respect to the manufacturing processes and controls of such products. In September 2017, FDA awarded a contract to support the coordination and development of these standards and consensus definitions through a public process, in consultation with the National Institute of Standards and Technology and other stakeholders.

Digital Health

FDA also is working to implement the digital health provisions of the Cures Act. Earlier this summer, FDA released an action plan that included the Agency's precertification pilot program, which explores how to apply a tailored, risk based approach toward digital health technology by looking at the software developer or digital health technology developer rather than primarily at the product. The Cures Act expands on policies advanced by FDA's Center for Devices and Radiological Health (CDRH) and makes clear that certain digital health technologies—such as clinical administrative support software and mobile apps that are intended only for maintaining or encouraging a healthy lifestyle—generally fall outside the scope of FDA regulation. Such technologies tend to be low risk but can provide great benefits to patients and to the health care system by helping keep patients and consumers more informed and engaged in their health. In the coming months, FDA will publish guidance to further clarify what falls outside the scope of FDA regulation and to explain how the new provisions affect pre-existing FDA policies.

In late October, the Agency issued the “510(k) Software Modifications” guidance—the first of several guidance documents clarifying our policy in this space. FDA will also provide guidance to clarify the Agency’s proposed position on products that contain multiple software functions, where some functionalities fall outside the scope of FDA regulation, but others do not. In addition, FDA will provide new guidance on other technologies that, although not addressed in the Cures Act, present low enough risks that FDA does not intend to enforce certain pre-market regulatory requirements. Greater certainty regarding the types of digital health technology that are subject to regulation and more clarity on FDA’s compliance policies will not only help foster innovation, but also will help the Agency to devote its resources to higher-risk priorities.

Breakthrough Devices Program

While FDA is taking steps to improve efficiency in all our review programs, the Agency is especially committed to helping devices that fill an unmet need move through the process as efficiently as possible. The Cures Act gave FDA new authorities to help achieve this goal. The Agency has issued a draft guidance regarding a new Breakthrough Devices Program, which was created by the Cures Act. Building on our Expedited Access Pathway program, which had been

in place since 2015, the Breakthrough Devices Program is intended to help patients have more timely access to certain devices that more effectively diagnose or treat life-threatening or irreversibly debilitating diseases or conditions, such as technologies with no alternative or that offer a significant advantage over existing FDA-cleared or approved alternatives.

As described in the draft guidance, the program would enable a more agile pre-submission process for breakthrough devices. Breakthrough device innovations that are highly novel can also be more complex to assess. Thus, earlier and more frequent interaction between FDA and manufacturers should allow manufacturers and the Agency to make the best use of resources to bring novel medical technologies to the market more quickly.

510(k) Modifications

Many devices undergo modifications based upon feedback from medical professionals, patients, and other users who help innovators make adaptations to improve a device's performance. A regulatory framework that responds quickly to iteration is key to improving device safety and performance.

FDA finalized two guidance documents on device modifications in October. They are designed to help innovators determine when they need to submit a new premarket notification (510(k)) prior to making a change to a legally marketed device subject to 510(k) requirements. The final guidance documents will help innovators introduce iterative improvements that can improve a product's safety and performance by establishing more predictable, consistent, and transparent criteria regarding when FDA needs to review and clear changes.

These new guidance documents do not change FDA's review standard. Instead, the new guidances enhance predictability and consistency for innovators deciding when to submit new 510(k)s by better describing the regulatory framework, policies, and practices underlying such a decision.

This improved clarity will help reduce the barriers to beneficial innovation and improve patient care by reducing unnecessary submissions to FDA for changes that could not significantly affect device safety or effectiveness, so patients can benefit from enhancements more quickly.

510(k) Exemptions

Under provisions of the Cures Act, FDA exempted more than 70 Class I device types and more than 1,000 Class II device types from the requirement to submit to FDA a 510(k) submission. This Cures directive is part of our ongoing strategy to decrease regulatory burdens on the development of beneficial technologies and reduce the costs of innovation. Device types that are exempt from 510(k) are not generally exempt from other regulatory controls (such as current good manufacturing practice requirements, adequate and proper packaging and labeling, and registration and listing), which ensures consumers can continue to rely on the Agency's oversight of these products while giving FDA more capacity to focus its oversight on higher risk products.

Modernizing Review of Reusable Devices

The Cures Act also provided FDA an important authority to require instructions for use and validation data regarding cleaning, disinfection, and sterilization for certain reusable devices, such as duodenoscopes. In June, as required by the Cures Act, FDA published a list of reusable devices for which the requirement applies, and we believe this will ensure that the premarket requirements for these device types are clear and predictable, facilitating more efficient review of these 510(k)s and safer products for patients.

Least Burdensome Device Review

The Cures Act also expands the least burdensome provisions for device review and requires important least burdensome training for review staff. In fact, even though the Cures Act mandated training only for employees involved in premarket device review, both CBER and CDRH require all medical device review staff to complete least burdensome training because it is integral to how we conduct business. When applied correctly, the least burdensome concept continues to help facilitate the availability of new device technologies without compromising scientific integrity in the decision-making process or FDA's ability to protect the public health. The least burdensome concept continues to be integrated into all device review and other device-related activities, not just select premarket activities.

The Agency also has revised our guidance concerning the proper response to deficiencies in accordance with the least burdensome principles and updated our guidance to incorporate the requirement under the Cures Act that summaries of significant decisions include how the least burdensome principles were applied. FDA also intends to issue in the coming months updated guidance on our overarching principles of the least burdensome concept. This is another instance where FDA is using the authorities under the Cures Act to achieve our objective of making the review process more efficient and ensuring that we are collecting information only when necessary and at the right time during the review process, and without compromising safety and effectiveness.

Patient-Focused Drug Development

In the drug approval space, the Cures Act is facilitating more patient-centered, efficient, and faster drug and biologics development through different mechanisms. We are putting this patient-centered approach at the center of our regulatory activities, which is why we intend to set up a dedicated patient engagement staff in our Office of Medical Products and Tobacco.

The Cures Act emphasizes the need for patient engagement. It directs the Agency to provide information about how it is reviewing patient experience data in reviewing drugs and devices and issue guidance documents to facilitate the collection and review of patient-focused data for drug development. In May 2017, FDA published a five-year plan for issuing these guidance documents.

FDA has already implemented an approach to record and track the submission and review of patient experience data. A new subsection called "Patient Experience Data" is now included in drug and biologic review documents. It will require reviewers to include a brief statement

regarding patient experience data and related information if it is submitted and reviewed as part of an application.

In just a few weeks, the Agency will conduct a public workshop, titled “Patient-Focused Drug Development: Guidance 1 - Collecting Comprehensive and Representative Input.” The workshop is scheduled for December 18, 2017. FDA is holding this public workshop to obtain feedback from stakeholders, including patients, caregivers, patients’ advocates, academic and medical researchers, expert practitioners, drug developers, and others, on considerations for: (1) standardized nomenclature and terminologies for patient-focused drug development; (2) methods to collect meaningful patient input throughout the drug development process, and (3) methodological considerations for the collection of patient data, and the reporting, management, and analysis of patient input. FDA has announced this workshop in the Federal Register and will publish a discussion document before it takes place.

Drug Development Tools

Provisions designed to advance the development and use of drug development tools (DDTs) are some of the most meaningful provisions in the Cures Act. These provisions codify FDA’s role in qualifying biomarkers and other DDTs, that is, determining that a DDT can be used for a particular context of use across different product development programs. Product development tools are critical to efficient, expedited product development.

FDA is establishing a qualification process for DDTs (i.e., biomarkers, clinical outcome assessments (COAs), and animal models) for proposed contexts of use for drugs and biologics. There are similar efforts underway with respect to medical device development tools. FDA must develop a new regulatory process to qualify DDTs to facilitate timely and consistent review of DDT qualification submissions and publicly disseminate information about DDTs under review and following a qualification determination. Once a drug development tool is qualified under this new process, it can be used for its qualified context of use to support regulatory decisions regarding a drug or biologic, including decisions regarding an application for approval or licensure of a drug or biologic or to support the investigational use of a drug or biologic.

To better integrate our work on drug development tools, on August 15, 2017, CDER moved the Biomarker Qualification Program from the Office of Translational Sciences into the Immediate Office of the OND. This places the Biomarker Qualification Program in closer proximity to OND review divisions, fostering improved coordination, scientific understanding, and consistency between biomarkers developed for qualification and those under development as part of drug-specific programs. Similarly, the placement of biomarker and COA qualification programs in the OND Immediate Office enables greater efficiency of operations and greater opportunities for collaborative engagement with external stakeholder communities.

These efforts are already having an impact: the first COA from the COA Drug Development Tool Qualification program has been accepted for review under these updated provisions—the Symptoms of Major Depressive Disorder Scale—and the Agency expects to act on that submission soon. The Scale is a 16-item, patient-reported outcome instrument intended to

capture the patient voice by measuring the symptoms of major depressive disorder that matter most to patients.

FDA has also been active with NIH and other stakeholders in the development of evidentiary criteria to support biomarker qualification efforts. Two recent multi-stakeholder collaborations have been held to help inform future guidance by the Agency, discussing the evidentiary criteria to support biomarker qualification efforts.

Limited Population Pathway for Antibacterial and Antifungal Drugs

The decline in antibacterial drug research and development as serious antibacterial drug resistant infections increase is a critical public health and patient care concern. FDA is working to implement the Limited Population Pathway for Antibacterial and Antifungal Drugs (Limited Population Pathway, or LPAD) provision of Cures to help address this. The Limited Population Pathway allows FDA, at an applicant's request, to approve an antibacterial or antifungal drug, alone or in combination with other drugs, as a limited population drug. This provision builds on ongoing efforts to spur drug development in this area by facilitating the development and approval of antibacterial and antifungal drugs intended to treat serious or life-threatening infections in a limited population of patients with unmet need. In certain circumstances, the Limited Population Pathway will be an important tool enabling FDA to conclude that the benefits of a drug outweigh its risks in the intended limited population.

As required in the Cures Act, FDA is in the process of developing draft guidance describing the criteria, processes, and other general considerations for demonstrating the safety and effectiveness of limited population antibacterial and antifungal drugs. FDA also is familiarizing the scientific and policy community involved in antibacterial drug development with the Limited Population Pathway by mentioning it during public presentations, workshops, and Advisory Committee meetings where development of antibacterial drugs for serious or life-threatening infections is discussed. Additionally, FDA is working with drug sponsors who are interested in utilizing this new pathway by answering questions and providing application-specific information to sponsors when it is requested.

Susceptibility Test Interpretive Criteria

Susceptibility testing is performed in laboratories to determine which antibacterial drugs are likely to be active against the bacteria causing a patient's infection. This information helps healthcare providers to pick an appropriate drug to treat a patient's infection or to determine when additional infection control procedures should be put in place to reduce the chance of spread of resistant bacteria. Before Cures, FDA had a laborious, duplicative process to keep this information up-to-date in drug labeling. FDA is currently working to implement section 3044 of the Cures Act, which clarifies the Agency's authority to efficiently update susceptibility test interpretive criteria, including by leveraging work done by standards development organizations [SDOs], while FDA retains full authority over recognition decisions, and take advantage of tools like the web to modernize how we update susceptibility test interpretive criteria. This allows sponsors of antimicrobial susceptibility testing devices to utilize this information more quickly.

On October 30, 2017, as a first step in implementing this new authority, FDA published a Federal Register notice asking for information to assist FDA in identifying SDOs that meet the statutory requirements in the Cures Act. FDA is working to meet its December statutory deadline to publish the Susceptibility Test Interpretive Criteria website. This website will include FDA's recognition, in whole or in part, of susceptibility test interpretive criteria established by SDOs. More information will be provided about the recognition process when the website is live.

Continuous Manufacturing

Continuous manufacturing—a technologically advanced and automated manufacturing method—provides a faster, more reliable way to make pharmaceuticals. This can help reduce drug shortages and recalls related to problems with product or facility quality.

The Agency is helping to bring continuous manufacturing into widespread use by supporting the pharmaceutical industry's transition to this manufacturing method. With this in mind, the Cures Act allows FDA to issue grants to study continuous manufacturing of drugs and biological products and similar innovative monitoring and control techniques.

During fiscal year 2017, CDER granted an award to the University of Connecticut to develop and build a continuous manufacturing platform with modular components for complex dosage forms, as well as to create a library based on Graphical User Interfaces. These activities support quality-based risk assessment and provide a roadmap to modernize technology and solve continuous manufacturing challenges for complex dosage forms. They also can help the Agency with review processes and provide necessary information to guide policy development. This research is likely to advance the Agency's regulatory science and facilitate production of high-quality, cost-effective complex drug products for the benefit of the public.

Novel Clinical Trial Designs

As technology improves, so does FDA's ability to explore novel trial designs that better fit the needs of researchers and patients. FDA is committed to supporting the use of novel trial designs, modeling, and simulations in drug development and review, to do things like support evidence of effectiveness, optimize dosing, and evaluate adverse event mechanisms.

Building on work that was already underway at the Agency, the Cures Act specifically calls on FDA to assist sponsors in incorporating complex adaptive and other novel trial designs into proposed clinical protocols and applications for new drugs and biological products to facilitate more efficient product development. To do this, FDA is actively planning a public meeting for March 20, 2018. The Agency plans to issue guidance on, among other things, how to use such novel trial designs, how they can help to satisfy the substantial evidence standard, and what are recommended analysis methodologies.

Combination Products

In line with section 3038 of the Cures Act, which addresses the full life-cycle for combination products, the Agency is taking a range of actions to advance the consistency, efficiency,

predictability, and transparency of both the premarket review and postmarket regulation of combination products.

FDA is committed to this work. Leadership of the medical product centers and other appropriate offices sit on the Combination Products Policy Council to guide efforts in the pre- and post-market space. For example, the Agency is currently completing a pilot of a more streamlined intercenter consult process that improves the efficiency of these consultations, an effort that has involved training for over one thousand review staff in the three medical product Centers. Additionally, we are enhancing our training of review staff, such as leveraging prior Agency determinations, to ensure a risk-based approach to regulation of combination products.

FDA is also working to help streamline the process to get these important products to patients. In January, we released final guidance on current good manufacturing practices for combination products, which outlines flexible practices that can be utilized by manufacturers to reduce burdens.

A key provision in the Cures Act calls for FDA's Office of Combination Products (OCP) and the three medical product Centers to work with and provide assistance to medical product sponsors upon request regarding the study design of their product. OCP continues to provide this assistance and has developed a new standard operating procedure for handling these requests to ensure faithful implementation of the Cures mandate.

Real World Data and Real World Evidence

Advances in technology also have the potential to improve the availability and utility of real world evidence (RWE) and real world data (RWD). The Cures Act specifically supports the Agency's evaluation of the potential use of RWE to support the approval of new indications of approved medical products or to satisfy post-approval study requirements for marketed products.

Examples of RWD include data derived from electronic health records (EHRs), claims and billing data, data from product and disease registries, patient-generated data including in-home use settings, and data gathered from other sources such as mobile devices that can provide information about health status. RWD sources (e.g., registries, EHRs, and administrative and healthcare claims databases) can be used as a data collection and analysis infrastructure to support many types of trial designs, including, but not limited to, randomized trials, such as large simple trials, pragmatic clinical trials, and observational studies (prospective and/or retrospective).

The use of RWE and RWD have the potential to allow researchers to answer questions about treatment effects and outcomes more efficiently, saving time and money while yielding answers relevant to broader populations of patients than might be possible in a specialized research environment. This could help streamline clinical development. The use of these data also can help inform the safe and effective use of medical products.

To do this, FDA will establish a program to evaluate the potential use of RWE to help support the approval of a new indication for an already approved drug or to help support or satisfy post-

approval study requirements. Over the past year, CDRH, CBER, and CDER have harmonized their definitions for RWD, data relating to patient health status and the delivery of health care routinely collected from a variety of sources, the clinical evidence regarding the usage, and potential benefits or risks of a medical product derived from analysis of RWD. FDA has already finalized guidance on RWE for devices, and we will issue new guidance to define how we plan to incorporate these principles into product development for drugs and biologics.

FDA's focus on RWE has already advanced patient care. On June 5, 2017, FDA became the first regulatory body in the world to approve the most recent iteration of the Sapien valve, the Sapien 3, to treat high-risk patients whose surgically-placed aortic or mitral bioprosthetic valves were old and worn out. This approval was based in part on data from the Transcatheter Valve Therapy (TVT) Registry, a partnership of the American College of Cardiology and the Society of Thoracic Surgeons. The TVT registry collects clinical data on the performance of transcatheter valve replacement procedures performed in the U.S. once a product goes to market – including both on-label and off-label uses – making it possible, under certain circumstances, to accumulate more data faster, without the need for costly and time-consuming formal clinical trials.

FDA is currently focused on developing a framework for a program that will evaluate the use of real world evidence to support regulatory decisions for new indications or post-approval study requirements. The draft framework, required under the Cures Act, is due in December 2018, but the Agency is already gathering stakeholder input to move this field forward. For example, in September 2017, FDA collaborated on a workshop convened by Duke-Margolis Center for Health Policy to bring stakeholders, including industry, academia, and patient advocacy groups, together to discuss both the challenges and opportunities for applying RWE and RWD to drug development. Similarly, the National Academies of Sciences, Engineering, and Medicine have organized a series of meetings—with FDA participation—to explore these opportunities. The first, also held in September 2017, was entitled “Examining the Impact of Real-World Evidence on Medical Product Development: A Workshop Series.” Two additional meetings are planned.

FDA also is supporting numerous demonstration projects to advance the regulatory framework for how best to incorporate RWE into regulatory decision-making. For example, as part of a big data analytics initiative at the FDA called Information Exchange and Data Transformation (INFORMED), the OCE has a current collaboration with Flatiron Health to examine how RWD can be used to gain insights into the safety and effectiveness of new cancer therapies.

In addition, in June 2017, FDA announced a partnership with CancerLinQ, the American Society of Clinical Oncology's big data initiative. FDA and CancerLinQ will be using real world, aggregate, de-identified patient care data from oncology practices to understand a variety of issues related to the appropriate use of newly approved therapies. The initial focus will be on immunotherapy agents approved for melanoma. FDA is also leading an effort that includes NIH's National Center for Advancing Translational Sciences, National Cancer Institute, National Library of Medicine, and the HHS Office of the National Coordinator for Health Information Technology to develop a general framework by harmonizing several Common Data Models.

FDA will continue to partner with a range of stakeholders to do all the Agency can to address the challenges and realize the opportunities posed by RWE and RWD, so that FDA can get effective treatments and therapies to those who need them more efficiently.

Medical Countermeasures

At FDA, we remain fully committed to continuing to use our authorities to the fullest extent to help facilitate the development and availability of medical countermeasures—such as vaccines, therapies, and diagnostic tests—to counter chemical, biological, radiological, nuclear (CBRN) and emerging threats such as pandemic influenza and Zika virus.

While many of the provisions in the Cures Act that are intended to facilitate the development and availability of medical products in general also will serve to help facilitate the development and availability of medical countermeasures, the Cures Act contains two FDA-specific provisions to help advance the development and availability of medical countermeasures.

Section 3088 of the Cures Act amends FDA's Emergency Use Authorization (EUA) authority (section 564 of the FD&C Act) to permit EUAs that: (1) authorize emergency use of unapproved animal drugs or unapproved uses of approved animal drugs, (2) make applicable other emergency use authorities (e.g., to issue emergency dispensing orders, waive compliance with Current Good Manufacturing Practices, make available CDC Emergency Use Instructions, and extend expiration dates) to approved animal drugs, and (3) allow unapproved animal drugs to be held for emergency use. In January 2017, FDA issued guidance on Emergency Use Authorization of Medical Products and Related Authorities, in which we explained that the Emergency Use authorities and guidance recommendations are now applicable to animal drugs and encouraged anyone interested in utilizing these authorities to contact FDA to discuss how to proceed. FDA plans to address any issues raised as we develop more experience with these new authorities.

Section 3086 of the Cures Act adds section 565A of the FD&C Act for FDA to establish a new priority review voucher (PRV) program to help incentivize the development of material threat medical countermeasures. Upon approval of a material threat medical countermeasure application, FDA will award a PRV provided certain criteria are met. The PRV may in turn be used by the sponsor who receives it, or sold to another sponsor who may then use it, to obtain priority review for a product application that would otherwise not receive priority review. In October 2017, we announced in the *Federal Register* the fee rate for using a material threat MCM PRV for FY 2018 (\$2,830,579; the rate was effective on October 1, 2017, through September 30, 2018). We also plan to issue guidance to address medical countermeasure-specific issues in the near future, with the intent to implement the program consistently with the other PRV programs, such as the Neglected Tropical Disease Voucher Program.

The FDA stands ready to use these new authorities as appropriate to help facilitate the development and availability of medical countermeasures.

Conclusion

These are just some of the ways the Cures Act has supported and enhanced FDA's work to make the process for bringing safe, effective, and innovative treatments to patients more efficient. FDA's improvements in transparency, consistency, predictability, and efficiency will benefit industry, healthcare providers, and, most importantly, patients. We expect our continued implementation of the Cures Act will further advance these goals. The Agency stands ready to work with Congress and stakeholders to help make the promise of the Cures Act a reality.

Thank you for inviting FDA to testify today. I would be happy to answer any questions you may have.