AN AUDIENCE WITH…

Jane Reese-Coulbourne


Reagan-Udall Foundation

During the re-authorization of PDUFA IV, the US Congress created the Reagan-Udall Foundation, a not-for-profit tasked with supporting the development of regulatory science for the FDA. Five years on, the foundation has finally received its first dose of federal funding: US$900,000 to support its operational overhead in 2012. This long-awaited money, along with support from charity and industry backers, means that the organization can finally get down to business, says its executive director Jane Reese-Coulbourne. Cardiotoxicity and multidrug regimen projects are already underway, and pharmacovigilance and fellowship programmes are in the works, she tells **Asher Mullard**.

Why did Congress create the Foundation?
Back in the mid-2000s, there was a report from the Institute of Medicine that said the US Food and Drug Administration (FDA)'s mission was at risk because it had not kept up with the science. This report got a lot of attention, and so members of Congress decided in 2007, as part of the prescription drug user fee act (PDUFA) re-authorization process, to create a not-for-profit organization that would have a statutory relationship with the FDA and could support the agency's science mission.

The FDA does have quite a bit of funding to drive its own regulatory scientific development, but the Reagan-Udall Foundation was created to support these efforts because there are a lot of things the FDA can't really do. For instance, it can't convene public–private partnerships (PPPs) on particular issues when it will also have to regulate the outcome. We can do those kinds of things on its behalf.

What projects are already underway?
At the moment we have two projects that are funded. One of these is a tuberculosis (TB) project, which we are working on with the Bill & Melinda Gates Foundation, the Critical Path Institute and seven or eight pharma companies. The project focuses on developing multidrug regimens for TB; historically, the drugs that are part of a regimen go through development as individual drugs until they are approved, at which point companies can start putting them into combinations. We are trying to figure out how to develop and evaluate new drugs together as they move through clinical trials, and right now we are in the process of identifying the regulatory science hurdles that need to be addressed.

TB is just the beginning. Once multidrug regimens are evaluated and developed together, this project could provide proof of concept that could be applied to oncology, AIDS and other diseases that need a multidrug approach.

In our second project we have set up a PPP that will use a systems biology approach to try to figure out the mechanisms of cardiotoxicity of tyrosine kinase inhibitors. If we can make this pilot study work, we can make databases of genes and pathways associated with cardiotoxicity publicly accessible and construct a cardiotoxicity taxonomy. It is also a proof-of-concept project because if we can make it work we can re-apply it to liver toxicity or another class of drugs.

And you have more projects planned?
One of the bigger ones that we are working on now is called Innovation in Medical Evidence Development and Surveillance, or iMeds. What we will do is pull together the methods research work of the pharmacovigilance Sentinel programme along with the learnings from the Observational Medical Outcomes Partnership (OMOP) so that we can create a long-term research strategy, an agenda and an infrastructure that can make the most of the agency's active surveillance system. There will also be an associated fellowship programme: we need to train folks to use these big unstructured data sets so that industry, academia and the FDA can make the most of these resources. And then we want to set up an evaluation component: how are we going to apply our methods and infrastructure in a real-world setting?

We've also started working on a paediatric reformulation project, in which we will work together to develop some standards and methods.

And then another whole stream of work will be to put together fellowship programmes. We are working on one international toxicology project that would let scientists from around the world come to the FDA's toxicology centre in Arkansas and learn how to set up a laboratory for toxicology work. And we are also looking at doing a bioinformatics fellowship. The FDA has taken drug application data that had been submitted in paper and worked it into an electronic database, and are looking at how to approach mining that data. We are now defining what sort of backgrounds the FDA want so that we can help bring those folks in.

We feel like we are in three buckets. One is safety and better evidence, which is where iMeds sits. Another is 'filling scientific capacity', which is all the fellowship programmes. And the third, which doesn't roll off the tongue, is 'precompetitive standards and data analysis systems', which includes the cardiotoxicity project and the paediatric reformulation project.

Is your federal funding enough to meaningfully back all these projects?
Part of what Congress wanted us to do was use this funding as an operational overhead, but then also to bring funding from other sources, including the government and industry, into the mix. We're trying to do our work by setting up PPPs, and that entails bringing all kinds of different resources together.

Getting funding from the FDA was really a benchmark for us, but it's really just the beginning.

How will you work alongside the Critical Path Institute, which is also backed by the FDA and aims to support regulatory science through PPPs?
We're in communication with them regularly. They have a new CEO, and we've had conversations to figure out what we will do and what they will do.