Janet Woodcock: Thanks so much, Ron, and hello, everyone. I am really delighted to be able to talk to this group and have really appreciated the outstanding support over the years. It is really critical both for the patient and consumer community that we have a strong FDA. So, what I decided to do since the team sent me a large number of questions that many of you submitted, I decided to have a Q&A with myself so that we can go over many of these questions as part of my presentation, and then leave ample time, as we said, for further discussion on whichever ones there are additional issues to be discussed. So, let me just get started.

The first one was what are our long-term budget priorities? Well, clearly, from my point of view, the FDA needs to keep up with its obligations and we need to have adequate funding to conduct those, including modernization efforts. So, across the agency, there is ongoing resource strain, more severe in some programs than others. So, our goal needs to be to make sure, through whatever means improving efficiency – of course, I have always been a proponent of – and modernization, as well as having adequate resources to conduct all of the different programs that support public safety and health. So, particularly, I share with you the interest in modernization, both of our IT infrastructure as well as data modernization. I will get into that in a little bit more detail.

So, another question, has the agency's budget kept up with the demands put upon it? No, we have inflationary costs that are difficult to explain to everyone, both on the payroll side as well as the capital side. We have deterioration of facilities that need to be upgraded. Anyone who owns or manages facilities understands there has to be ongoing upgrades and investments. We cannot write off depreciation like the private sector.

What are our plans for spending the $500 million from the recent COVID relief bill? We were really happy to get that. We are going to spend a significant amount of money on surveillance in both continued pre-market work that has to be done for many things coming along. Things that are EUA are not fully on the market, obviously, and more interventions continue to be tested. Then, things that are on EUAs, their surveillance must be stepped up and kept active across all three commodity areas, the devices, drugs, and biologics, the vaccines.

Of course, we have issued some guidance and the variants are beginning to impact the therapeutics and a little bit of the diagnostics right now. Fortunately, the vaccines are continuing to

hold and we hope that continues to happen. We also are going to invest in supply chain. One of the things that this pandemic made very, very clear is that we do not have enough insight and visibility into various supply chains. We have received some monies to do this, but we have received additional within this supplemental, and we plan to invest.

Much of this is IT-driven supply chain issues. We also plan to invest in advanced manufacturing, which also has to do with shortages, the need for surge capacity, and advanced manufacturing. Particularly, we are looking at vaccines, mRNA, and so forth. The need for surge capacity in a pandemic is obviously very clear and these advanced manufacturing techniques are actually what can be searched rather quickly compared to traditional manufacturing. So, we were very grateful that Congress gave us these monies.

We are also going to be using some of the money for recovery because, as many other questions ask, "how are we managing when we have COVID on top of everything else?" The answer, I think, that some things had to be put off, such as some inspections and so forth, and we need to have a recovery plan.

What major programs are you working to implement this year? Well, our tech modernization is really major, both the data modernization and the infrastructure modernization. What are we doing? We are going to try to have enterprise-wide platforms and common data standards so our systems can talk to one another and we are not paying so much for individual siloed platforms.

Is there a risk with COVID and all of the breakthrough drugs coming along and so forth? Will food safety and veterinary medicine budgets will be neglected? My answer to you, and I tell you this very sincerely, is not on my watch. That absolutely will not happen on my watch. I believe that we have to invest in every program. Every program that the FDA has is important. It affects all sectors. Animal health, for example, affects many, many people and so forth. Food safety is a critical public health issue. So, we are not going to neglect those, and I am already getting myself up to speed on what we need to do. For example, we just issued the baby food action plan, Closer to Zero, and I think you will see more activity on our part in the various components of food safety.

Now, again, one of the questions, are we staffed at a level that allows us to carry out our critical public health mission? Well, it

depends on how thoroughly and how people wish us to want to carry out that mission. We have been criticized prior to the pandemic, for example, for our lack of conducting foreign inspections. We do that to the ability of our resources, so the more we have, the more we can do. So, it is not like a black and white issue. It is kind of a sliding scale of we do as much as we can, as effectively as we can with the resources that we have.

What type of staff are 2021 hiring priorities and are they different between medical products and food safety? I think that is a little too complicated to go into the 10 minutes. We are hiring where we have vacancies and where we can get people in. Yes, 21st Century Cures, that has been another question - that has been a tremendous help, I think, in both hiring and retaining staff in the areas where it is applicable, the medical product areas. So, that has been a very important tool enabling us to retain staff.

How would I characterize agency morale? Well, it is difficult to say in general, but there was a federal survey that is done every year. The employee viewpoint survey was conducted in November and FDA employees at that time, which was right in the middle of the pandemic, had extremely high morale. I would attribute this, despite the fact that they under awful strain and workload in some of the programs, to the fact that during a crisis, people with public health orientations step up to the plate and they feel like this is what they were born to do and they give it their all. So, we have that kind of *esprit de corps*.

We have sent a lot of people down to the border to help temporarily with the unaccompanied children, and I have been hearing from them how inspiring that is and how happy they are to be able to help. We will not have a big drain on our resources from that, but we have temporarily sent a lot of people. It is the same phenomenon. They understand there is tremendous public health need and they are able to step up and fill it.

So, I would say our staff is weary. Many of the people, say in the medical products centers, are weary with all the work and it is more problematic in some areas than others, obviously, but I think they are very proud of what they have been able to accomplish and I am too. I am very proud of that.

So, the data modernization plan, tech modernization action plan, we got a lot of questions about that. How dependent are we on legacy software and what are some of the problems and lost

opportunities? Well, it is a very painful subject, so if I have a sour-looking face… Basically, we really have very high-cost systems where we do not get the return on investment that we need. We have a lot of systems that are legacy systems. They were built for one purpose. They may have been very highly customized or purpose-built rather than off-the-shelf. They do not talk to each other and they cost a tremendous amount in maintenance because we have so many of them.

So, the operations and maintenance costs are significant and some of them even have lost support by the original vendor because they are so old. So, we are spending a lot of money. We are not getting that return. So, what we need to do is really build enterprise-wide platforms using available, off-the-shelf software that we can utilize across the agency, and then transition these processes and databases and everything onto those platforms. The data modernization plan then will have enterprise-wide data strategy.

So, with modern computing, you do not need to have the exact same system doing everything. They can talk to each other as long as the data are somewhat compatible so that you have links. So, we have just formally kicked this off. I was at the first meeting of the Data Council. The good news from my point of view, organizationally, is I think everyone gets this and we have Amy Abernethy, who has built a strong central group to manage these programs, and we have a method to move forward now. Everybody sees the fact that we cannot continue the way we have been doing.

So, what are the budget and human capital requirements? Well, I think that is simply the usual. We have asked for more dollars to support these plans, and hopefully, we will get some support on that. Now, someone said what are the benefits to food safety, that is harder to see, and actually the New Era of Smarter Food safety is mainly an informatics, data type of initiative where we get information and can apply modern analytics to figure out risks, to pinpoint problems, and to figure out trace-back in a rapid manner because right now when we have a food outbreak, it is really very difficult for us to figure out where the food came from and it is not timely. So, I think food will be beneficiary.

One of our initial driver projects in the data modernization relates to the food program and the animal drugs program. So, what about AI is the question? Could that provide a fundamental role in transforming our regulatory activities? Yes, but first of all, you have to have data that the AI can work on, so that is where the data

modernization goes. If we could target risk for imports so we could figure out with a smarter intelligence than human what to target, that would be terrific.

So, inspections and program initiatives, what are we going to do to catch up? We will be putting out some more information on that probably very soon, so I do not want to talk about it here.

Are there key differences between medical products and food safety? Well, mainly, the differences in medical products, we have some applicants whose applications have been delayed because of the lack of inspection. So, we will look at that and how we can recover very quickly for that. Otherwise, this story is fairly similar across the agency.

The New Era of Smarter Food Safety, how can we promote this and get support for it? Well, I will seek your support. We need to flesh this out, have specific initiatives that we do over time, but really it is to have more informatics and modern infrastructure that looks at both distribution of foods and also is able to pinpoint risks better. Then, use, of course, which we are doing of modern genomics and so forth, can we get that to a higher level? Cell and gene therapy is the most pressing resource need, yes, and we are aware of that and everyone is aligned with the fact that that field will probably explode. We hope so because people with rare diseases and genetic diseases and some cancers will probably benefit tremendously from this field in the short term.

Shortening supply lines, people ask what role does advanced and continuous manufacturing plays. I have been supporting this for years and FDA has. Well, obviously, continuous manufacturing for APIs, for example, can be done, say, in the U.S., and the U.S. government has put out some contracts in supporting that right now. The intermediates, the chemicals that go into that, are a different issue. They are usually made all around the world and that is where supply chain management and trying to figure out where critical components come from will still be very important, even if we establish an advanced manufacturing base in the United States.

How did we manage to fully address COVID as we have and still fulfill the rest of our public health mission? Well, I think it is by many of our staff working 24/7 and although their morale is high, were very tired. How can improvements in technology and data be leveraged to respond to future public health crises? Well, from my

position where I was at Warp Speed, we are conducting a lessons learned across all the U.S. government sections, at least for therapeutics, so that we can figure out the more efficient ways to do things, where could we plan better, construct better infrastructure that could respond faster. Even though we actually managed to respond very well, we could have done better. You can always do better. So, we are doing a lessons learned.

How do I envision FDA being different or better in five years? Well, for all the commodity areas and all the things that we do, we are seeing increased scientific sophistication, increased use of information and data, and so forth I would see that we hopefully can move most of our things to the cloud. We can automate many tasks. So, our scientists and other staff are working on things where they really can contribute and they do not have to do a lot of busy work and we can rise to the challenge of all these new technologies that are being developed everywhere from foods to medical devices. So, thanks very much, and I will open it for questions.

Ron Bartek: Steven, do you want to start?

Steven Grossman: I will start because at least some of the ones that came in are rather a bit too political.

Janet Woodcock: Yeah, let us avoid that.

Steven Grossman: My question is that obviously, this has been a 15-month period when FDA has been more visibly mixed in with CDC and NIH. I guess as we return to something that might be more "normal," what are the challenges and what are the opportunities in working with NIH and working with CDC?

Janet Woodcock: Yes, we had been working with NIH more and more. For example, I sit on the AMP initiative. I think this provides tremendous opportunities for us all to get together and work together. The CDC also, on the public health side, with modern technology and everybody getting used to using Zoom meetings and other ways of interacting, these geographical differences and lack of co-location I think become much smaller issues. There is a tremendous amount we can do both with the NIH and with CDC and I think it is a tremendous development that these agencies are working so closely together.

Steven Grossman: Okay. Maybe I will take the next one as well. The COVID-19

lessons learned report talked about an environment conducive to sustained innovation in clinical trial conduct. How do you envision that playing out in terms of institutionalizing clinical trial innovations, decentralized trials, adaptive trials, master protocols, and greater use of real-world evidence?

Janet Woodcock: If you would recall, these are themes we had been working on before the pandemic came along. Some of them, like telehealth, we have been forced into this as has the healthcare system. Everyone has discovered it works a lot better than we were worried about. So, I think remote clinical trials are something that will be here to stay. I do think though that we cannot do all those recommendations in the prep report right now.

We are still in the middle of the pandemic and we have to recover. So, we will obviously be incorporating some of those things as we go, but some of them will require more broad public input and discussion before we make them an instantiated practice going forward.

Ron Bartek: Steven, I would like to take one of the questions that is recently in for Dr. Woodcock. The question is in your opinion, Dr. Woodcock, would you believe that new centers of excellence for neuroscience, for example, and rare diseases be beneficial or redundant with the current departments that you have available in the FDA now?

Janet Woodcock: Right. Of course, once you have one Center of Excellence, every disease area would like to have a Center of Excellence. The oncology example, just because you establish a Center of Excellence does not mean the oncology example would be replicated. Let me say that those are a series of unique circumstances and personnel and so forth, and Rick Pazdur is not just the head of the OCE, he is head of the oncology office in CEDER. So, we have a very, very close relationship there.

Certainly, we would explore and have been exploring, because it has been suggested so many times, other Centers of Excellence and how that would operate. The agency right now is under so much stress that really trying these major or even minor structural reorganizations and so forth take a couple of years to get in place and then you also have to socialize them and make sure everyone plays together well and learns how to work within the new systems and so forth.

So, the last thing, I think, we need to do right now, our people are

tired and they are continuing to have to work, we have a wall of work in front of us that has to be gotten through, is to do a lot of very disruptive things. That said, we are certainly talking about it and thinking about how because there is convergence across different commodity areas of treating similar diseases, their part of an armamentarium that any given clinician might have, their common themes, like for rare diseases, which is how do you get a trial done that tells you anything, and so forth.

So, there are definitely pluses to doing this. It is simply we do not want to do it in a way that breaks things and we do not want to ask exhausted staff members to have to take some additional initiative on right now.

Ron Bartek: Thank you.

Steven Grossman: We have two questions that are related about diversity and service to communities of color and indigenous populations. One is sort of a global question, how can FDA do better, and then there is a specific question with regard to workforce, both hiring and sensitivity.

Janet Woodcock: Okay.

Steven Grossman: So, a three-part question.

Janet Woodcock: Yeah. Well, I actually did call up the stats, I think, for our workforce and as you all know, our workforce is extremely diverse. For a scientific workforce, it is extremely diverse. We are re-initiating a lot of this and will have a big push on it internally now with the new administration because some of this, in the prior administration, was downplayed, shall we say, and now it is a major focus for the new administration. So, that will enable us to pick up where we left off and continue to push on this. On how we can do better in clinical trials, I have some ideas about this. I have been telling everybody I think this is what has to happen.

I think we are seeing traction on this, so stay tuned. You have seen the snapshots data. We publish that so everybody knows, at least for drugs. It is not enough to say we have this number of participants. What we need to do is conduct clinical research in those communities, give those individuals, the people who are providing the care, the opportunity to conduct research, support them so they are able to do that, and then they can enroll people in their community who do not have to leave their community and go

to the major medical center or the CRO site 50 miles away if they want to be in a clinical trial.

Say in cancer right now, the opportunity to be in a clinical trial, and many are single-arm trials, it may be your one chance to get advanced therapy that is much better. So, not offering clinical research in those settings is wrong. So, I believe, and I have been working on this and I think we are going to have some big progress on this, in supporting clinical research in communities where it is not typically conducted.

I think that is a better solution than "you have to have this many people enrolled in your trial" or whatever, although that may be part of it, but that would remove the opportunity for many people who do not want to leave their own community to participate in clinical research.

Steven Grossman: I think that is an important message for everybody. Ron, do you have another one?

Ron Bartek: Yeah, I do. There are a couple of questions that are related in another way and that is about the current level of flexibility being demonstrated by agency reviewers. There seems to be a conviction that there are a number of drug reviews, for example, that are being delayed and that maybe there are some accelerated approvals that are getting a relook. With that and some other signs of maybe not the same level of flexibility being manifested in terms of single, well-controlled, and adequate clinical trials with confirmatory evidence being adequate for even the receipt of an NDA.

The question is do you believe that this is possibly a sign that the agency is taking a more stringent approach to reviews and maybe willing being to manifest a little less flexibility than in the past?

Janet Woodcock: I do not think so. I think that what is happening is that drug development into fields that typically have not seen the kind of advances that we have seen in other areas like cancer. So, I think there is some adjustment that has to be made as people deal with that. I recall the HIV epidemic for example. I was around when the treatments started and there was a great deal of internal resistance at first, if you recall, in using surrogate endpoints and an external concern too, and that went on for a long time. Had that prevailed, we would not have controlled that epidemic the way we did and drug development would have been slowed tremendously.

It was taking a big chance at the beginning, not later but at the beginning, so that kind of willingness or boldness or whatever is predicated on the idea that the need is so great that you are willing to take those kinds of chances. I think the people that are asking these questions should have more conversations with Drs. Cavazzoni and Peter Stein and so forth. Just as the pandemic was breaking out, they were trying to finish their reorganization and they had not done so and they had a lot of vacancies and so forth.

So, I think they are cranking out a lot of work and so forth, but I think that made it very difficult to get that organization to be a coherent and fully-staffed organization because it finished its growing up during a worldwide, unprecedented pandemic. So, I would not read too much into the tea leaves over this, but I do think it is worth those who are interested in having more conversations with the Center for Drugs.

Steven Grossman: Thank you very much.

Ron Bartek: I am going to jump in. Something that was said about HIV that I think is true of this current pandemic is that if it had occurred 10 years earlier, it would have been beyond even the current devastation, and if had occurred 10 years later, it would not have been anywhere near such a big deal. That was said about HIV and it can be said about the pandemic. What are we doing to get ahead of the curve so the next time it becomes 'Oh, we already addressed that and it is not the big deal it would have been 10 years ago'?

Janet Woodcock: Well, I believe that for viral illnesses and perhaps some others, there is discussion of more government investment in the science of the antivirals, the basic science that is needed to advance these therapies and vaccines. Obviously, if the work had not been done on the mRNA technology for 15 years or whatever, we would not be where we are today. The same actually, I would say, with some other kind of technology. Look, we are having this call over Zoom. I can assure you that if the FDA tried to do full remote work with every person online 10 years ago, it would not have worked.

So, many things have advanced to the point where we are able to manage this somehow. I do think, as I said, from the therapeutics group at Operation Warp Speed is performing a lessons learned, I know NIH is doing a lessons learned, and I think everybody needs to do some lessons learned so that we are better prepared next time.

Steven Grossman: Ron, do you have one?

Ron Bartek: There were several questions about the recent vaccine decisions. The role of the FDA versus the CDC and making the decision to pause the J&J vaccine, for example, and maybe you could add some color to that general situation, Dr. Woodcock?

Janet Woodcock: Sure. Obviously, the FDA manages the emergency use authorization, but we are supposed to do that in consultation with CDC and NIH and BARDA and so forth. I think we have a very good relationship with the CDC and we had a very good process to talk this through. You may have different ideas and then you talk it through with other people who are smart and who have thought about it and you can arrive at a collective decision that everyone is comfortable with and seems right. Then, you are really glad you talked it through and had that conversation.

So, I think we are having a very productive relationship with the CDC and we are working very collectively. That is why we issued a joint statement. We do not want to have any light between us because I think the federal government has to have a unified, consistent message about anything we do. That is really critical to build public confidence.

Ron Bartek: Just in, there is a cluster-related question recognizing, as you have just indicated and we did earlier, the FDA's extraordinary role in rising to the initial pandemic challenges. What do you foresee, Dr. Woodcock, in terms of going forward in a role for the FDA in the recovery phase of the pandemic?

Janet Woodcock: Well, we have our own recoveries to make and we are doing a whole exercise on that over facility surveillance and so forth, the inspections that we did not do, some other things that may not have been gotten to, so obviously all of that. Then, of course, we are going to work with our other partners. People already talked about strengthening the supply chains. We look forward to the studies that are being done on long COVID or whatever you want to call it, the post-viral syndromes that are existing and people will be thinking about how can we do treatments for those.

We still have to keep track of the variants. This is not over and this is a worldwide problem, and until all people in the world have herd immunity, we are still going to have a lot of virus replication and the danger of other variants arising that might be resistant to vaccines, especially if we have more selective pressure by having a

lot of vaccinated people.

So, I think number one, this is not over. Number two though, as people are vaccinated, and we have done scenario planning in sort of the base cases, over the next few months, things will quiet down in this country, and we will be able to turn to more of the ordinary work, on top of what we are doing with COVID, but more of that ordinary work to catch up and get done, especially our inspectorate.

Steven Grossman: I have got a very personal question from one of the audience. As a person who is living with dementia, how can I play a bigger role to work with the FDA and NIH to enhance products and procedures that will work to benefit the area of dementia and related issues?

Janet Woodcock: I would say do not go it alone. There are a number of groups out there that are working both to have a patient voice in how dementia trials are done and how drugs are developed for dementia treatments and diagnostics and so on. So, I would join up with a group that has an agenda and add your voice if you agree with that particular agenda that they are advocating for because there are strong patient advocacy groups in the dementia space.

Steven Grossman: Thank you.

Ron Bartek: So, back to your comments in your personal Q&A period in your presentation. You mentioned how readily the FDA has recognized the increasing importance of cell and gene therapy moving forward. So, the question is do you foresee the need of a good number of additional personnel at CBER or more resources to address the growing application of those wonderful technologies? Seeing the number is INDs you already have before CBER, that is without going forward and hoping that some of those find the back of the net and lead to BLA applications, do you foresee the need of substantially more in terms of resources and personnel for CBER?

Janet Woodcock: Absolutely. If we are going to staff these programs, and of course they are more complex even than many drug development programs due to the manufacturing issues and the actual nature of cell and gene therapy with very complex products, if we are going to staff them at the level we staff drug development programs and our oversight of those, and if you look at that balance, then we are going to need a significant increase in the workforce to have the same level or even a slightly higher level of oversight given the complexities of these programs.

Ron Bartek: Thank you.

Steven Grossman: One of the questions was on the Sentinel project, which given your continuing interest in safety, is obviously near and dear. How is the agency building Sentinel to be sure that it includes not just drugs, biologics, medical devices, diagnostics, that it is an integrated system and becomes big data for insights that could not be gathered any other way?

Janet Woodcock: Well, this gets more to our data infrastructure and our platform and so on. Sentinel, we are not doing that right now. They have enough problems. They are trying to try to get integration of the electronic health record as step into the analyses and so forth. The best program that CBER has is trying to do that, but there are significant data challenges with this, as you probably know. So, the evidence accelerator that we are doing as a public/private partnership over with Reagan-Udall is looking into this with COVID and seeing what they can learn from real-world evidence and how it compares to clinical results and trials and so forth.

So, there are multiple efforts going on. I think in the foods area, we have to get another level with a New Era and that is the plan. As I said, that has more informatics and IT infrastructure and so forth involved than the current way that we manage food. So, that is primarily an information initiative going forward so that we have better information and we can use it better. So, could these all converge someday? Well, they are very different kinds of data. That is why we have this data modernization plan so that as we design these new systems, it is with an eye towards integration in the future.

Ron Bartek: Dr. Woodcock, we recognize you have a hard stop coming up in a few seconds, so on behalf of all of our members and the guests, let us thank you very much for, first, all that you have accomplished on our behalf, and all that you continue to accomplish on our behalf, and for agreeing to speak with us today. You are a real hero to all of us so thank you.

Janet Woodcock: Well, thank you. They were all great questions. We will try to do work on all of them and move everything forward. Thank you very much.

Ron Bartek: Thank you, thank you.

Steven Grossman: Bye.

Ron Bartek: Bye-bye.

Janet Woodcock: Bye.

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