



## Capitol Hill Steering Committee on Pandemic Preparedness & Health Security



JOHNS HOPKINS  
BLOOMBERG SCHOOL  
of PUBLIC HEALTH

Center for  
Health Security

### Transcript from May 26, 2021: U.S. Leadership for a Pandemic-Free Future: Technologies to End Biological Threats

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00:00:07.529 --> 00:00:18.570

Andrea Lapp: Welcome to today's webinar US leadership for a pandemic free future technologies to end biological threats our moderator and nita Cicero will now begin.

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00:00:20.550 --> 00:00:29.160

Anita Cicero: Thank you welcome and thanks for everyone for joining us today, my name is Anita Cicero i'm deputy director at the Johns Hopkins Center for health security.

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00:00:30.240 --> 00:00:40.980

Anita Cicero: Our Center started the Capitol Hill Steering Committee as a bipartisan educational effort, and it was formed, with the support of both Congressional leaders, as well as former administration officials.

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00:00:41.310 --> 00:00:52.800

Anita Cicero: Who are all committed to making the country more prepared for the greatest health security threats we're very grateful that the open philanthropy project supports this monthly webinar series.

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00:00:54.150 --> 00:01:08.730

Anita Cicero: On today's webinar we're going to explore how the federal government can prioritize both programs and investments in technologies to ensure that nothing like the coven 19 pandemic, or worse, could ever lead to such extreme consequences again.

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00:01:10.140 --> 00:01:19.320

Anita Cicero: For military technology and material, the United States has the best in the world, R amp D large reserves and domestic supply chains.

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00:01:19.860 --> 00:01:29.700

Anita Cicero: But as we've seen a large scale infectious disease pandemic caught the United States to flat footed rushing to respond to a crisis and save lives and livelihoods.

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00:01:31.050 --> 00:01:41.580

Anita Cicero: We also know that the frequency of pandemics is increasing, there have been at least seven pandemics in the last century that have collectively caused more than 70 million deaths worldwide.

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00:01:42.000 --> 00:01:44.850

Anita Cicero: and the next one could occur within the next 10 years.

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00:01:45.780 --> 00:02:02.550

Anita Cicero: But by investing in specific known and future technology innovations, the United States can better prepare and protect American lives, while also regaining our claim to international leadership in science and technology innovation, public health and national security.

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00:02:03.750 --> 00:02:16.920

Anita Cicero: Today we're very lucky to be joined by five speakers, and they are Senator Richard Burr who among other titles is an honorary senate co Chair of the Capitol Hill steering committee on pandemic preparedness and health security.

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00:02:17.490 --> 00:02:28.950

Anita Cicero: We also have Dr Gary Desborough who's director of the biomedical advanced research and development authority and also Deputy Assistant Secretary for preparedness and response at HHS.

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00:02:30.060 --> 00:02:47.010

Anita Cicero: Dr Amish A. Delta my colleague who's a senior scholar at the Johns Hopkins Center for Health, Security, Dr Tara T. O'Neil who's a senior fellow and executive Vice President at Ink by Open Philanthropy and also Jacob S. M. who's an advisor at Open Philanthropy.

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00:02:48.360 --> 00:03:01.860

Anita Cicero: So Senator Byrd is our first speaker the Senator was first elected to the US House of Representatives in 1994 where he served five terms and he's currently serving North Carolina in his third term in the US Senate.

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00:03:03.000 --> 00:03:12.330

Anita Cicero: during his time in the House, he led legislation modernizing the FDA and began his work to improve our nation's biodefense and pandemic preparedness capabilities.

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00:03:13.020 --> 00:03:27.780

Anita Cicero: In the Senate, he serves as ranking member of the health education Labor and Pensions Committee, promoting innovation and america's healthcare system has been a priority for him, throughout his time in Congress Thank you so much for joining us Senator over to you.

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00:03:28.860 --> 00:03:36.120

Senator Burr: Well it's great to be with you this morning and my mentors their tool, and this for a year or disproving great to see all of.

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00:03:40.590 --> 00:03:48.480

Senator Burr: You know we've all had an opportunity now to reflect on what we've been through the last year and a half and for everybody who.

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00:03:49.680 --> 00:03:52.830

Senator Burr: spent any amount of effort to try to prepare for this.

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00:03:54.900 --> 00:04:00.060

Senator Burr: I think I gotta say I never dreamed it would be like it was.

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00:04:01.230 --> 00:04:02.820

Senator Burr: The good news is that.

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00:04:03.960 --> 00:04:07.170

Senator Burr: The time that was spent trying to create an architecture.

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00:04:08.220 --> 00:04:11.130

Senator Burr: In case this happened have.

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00:04:12.960 --> 00:04:14.910

Senator Burr: allowed us to have a response.

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00:04:15.990 --> 00:04:18.720

Senator Burr: That, I think, by all standards its historic.

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00:04:20.340 --> 00:04:21.600

Senator Burr: Not only the.

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00:04:23.250 --> 00:04:24.930

Senator Burr: Recovery that we've gone through.

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00:04:25.950 --> 00:04:27.750

Senator Burr: But what we've learned.

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00:04:28.890 --> 00:04:30.210

Senator Burr: Through that process.

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00:04:31.320 --> 00:04:38.820

Senator Burr: I think this will begin to reshape how government collaborates with the private sector.

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00:04:39.600 --> 00:04:45.450

Senator Burr: And with academia and I will tell you that if there's one takeaway from the last year and a half.

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00:04:45.930 --> 00:05:00.750

Senator Burr: You can't go forward in the future without all three participants playing a role, like Oh, I call it the three parts of the school today, academia, has to be in with the private sector and with government and collaborative relationship.

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00:05:02.100 --> 00:05:07.320

Senator Burr: I think what i've been most impressed with is how we leverage technology.

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00:05:08.700 --> 00:05:12.570

Senator Burr: it's not limited to Mr and a platform.

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00:05:13.980 --> 00:05:21.780

Senator Burr: But it's the development of diagnostic testing that we've seen it's RAD X its.

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00:05:23.700 --> 00:05:38.550

Senator Burr: efforts that are underway on a lot of academic campuses today one at the University of North Carolina Chapel hill called ready that's that's really looking at at how we develop future technology platforms, like Mr RNA.

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00:05:39.630 --> 00:05:44.910

Senator Burr: That could potentially play a factor in the next event that we go through.

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00:05:47.280 --> 00:05:58.650

Senator Burr: I think that Tara tool has a front row seat at the technologies that are around the below that could play a role in the next response.

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00:06:00.630 --> 00:06:01.170

Senator Burr: and

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00:06:02.430 --> 00:06:06.210

Senator Burr: I think it's safe to say that Chairman Maria and I are focused on.

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00:06:07.620 --> 00:06:15.960

Senator Burr: An after action review of our response in this country, what worked what didn't work, what did we not think of.

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00:06:17.250 --> 00:06:39.150

Senator Burr: But I think the the the takeaway here really is about how we understand how technology played an integral role in everything that we did, and how we take those technological advances and leverage those two other areas of health care as quickly as we possibly can.

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00:06:42.390 --> 00:06:54.810

Senator Burr: that's something that's going to be a shared responsibility between government between the private sector and between academia and I think, academia, is going to play an ever increasing role and identifying those technologies that can.

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00:06:55.920 --> 00:06:58.500

Senator Burr: really be the portal to something new.

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00:07:03.540 --> 00:07:11.490

Senator Burr: Congress has had a tendency lately to get bogged down, and I hope this is not an area where we're going to see things come to a screeching halt.

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00:07:13.650 --> 00:07:14.460

Senator Burr: i've been.

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00:07:15.600 --> 00:07:18.060

Senator Burr: One of the biggest critics in the past of.

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00:07:19.980 --> 00:07:25.500

Senator Burr: The speed with which FDA moves Gary i've questioned the speed with which Barton moves occasionally.

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00:07:27.600 --> 00:07:40.800

Senator Burr: But I think when you look at when press to go on the field and play all these different pieces performed better than any of us ever thought they would.

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00:07:42.150 --> 00:07:47.220

Senator Burr: And my challenge in addition to working with patty on the architecture in the future.

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00:07:48.240 --> 00:07:55.770

Senator Burr: is to also to try to work with those federal agents use to make sure that we don't give up the advances that we made.

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00:07:57.150 --> 00:07:58.470

Senator Burr: That, if we can.

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00:07:59.490 --> 00:08:14.760

Senator Burr: process an application for a new vaccine or process, the new an application for new device enlightening speed, because there was a need to do it, then, how do we transfer that over and figure out how that becomes the norm and not the exception.

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00:08:16.320 --> 00:08:24.510

Senator Burr: And you alluded to the fact that it was now 26 years ago when I did FDA reform, and I remember when I started that legislation and people said.

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00:08:25.680 --> 00:08:28.170

Senator Burr: You can't reform the FDA it's too big.

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00:08:30.900 --> 00:08:45.660

Senator Burr: We did it and reforms are a continual process it's not a one time deal, so I sort of look at what we've been through as it relates to the federal agencies that went through coven response.

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00:08:46.830 --> 00:08:57.720

Senator Burr: and realize that the Congressional role is to figure out how we work with those agencies to make sure that we never go backwards, from where we ended up.

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00:08:58.320 --> 00:09:15.360

Senator Burr: That we process applications, the same way that we processed vaccines, which means we can do it faster, but it requires a different approach and I really do commend Gary and his team at Barda and and and the FDA and.

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00:09:16.740 --> 00:09:22.740

Senator Burr: The folks at CDC who, I think, had the toughest challenge to incorporate technology moving forward.

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00:09:23.880 --> 00:09:32.520

Senator Burr: Is Taro Taro to taught me one time, when you get data that seven days all it's not a very good predictor of the future.

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00:09:33.240 --> 00:09:41.940

Senator Burr: gives you a good snapshot of the past, but not necessarily what's around the corner tomorrow and when we've got an organization like CDC.

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00:09:42.690 --> 00:09:53.460

Senator Burr: That needs to look around the corner, then we've got to make sure that we do everything we can to set up a surveillance mechanism that.

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00:09:54.030 --> 00:09:58.860

Senator Burr: Has a layers of technology that allow us to see with that clarity.

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00:09:59.730 --> 00:10:09.180

Senator Burr: And that's, a far cry from the surveillance mechanism, which is hospitals reporting to state some States reporting to CDC and CDC processing a big amount of data.

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00:10:09.600 --> 00:10:18.570

Senator Burr: i'm putting things in simple terms, but you've got to understand that how how I think we've looked at it in the past.

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00:10:19.140 --> 00:10:30.420

Senator Burr: And that has to change so it's not just the technology leveraging technology that enables us to have a vaccine quicker so leveraging the technology that allows us to understand.

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00:10:30.930 --> 00:10:39.780

Senator Burr: what's getting ready to happen to us, so this is an exciting time I thank you for the opportunity to share just a few general thoughts, so this morning.

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00:10:41.370 --> 00:10:49.200

Senator Burr: you've got the experts that you're going to hear from i'm looking at them in any screen and I look forward to what i'm about to hear today, thank you.

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00:10:50.490 --> 00:11:07.350

Anita Cicero: Senator thanks Thank you so much for for your remarks and for joining us today and also for your efforts with Senator Murray to to look to developing bipartisan legislation going forward, and I wonder if you if you have time for one question.

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00:11:08.370 --> 00:11:19.680

Anita Cicero: i'd like to ask if, in terms of modernizing our development of medical countermeasures, and I agree with you that the speed at which we were able to.

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00:11:20.250 --> 00:11:43.470

Anita Cicero: develop and get an emergency use authorization for the the covert vaccine is truly stunning, and probably did exceed expectations, how do we maintain that engagement of industry, both small and large pharma companies and in terms of engaging with barda working with the government.

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00:11:44.880 --> 00:11:53.460

Anita Cicero: In order to stay on that cutting edge and and especially with you know future unknown pathogens that can come down the Pike.

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00:11:54.690 --> 00:11:57.000

Senator Burr: Well, I think I summon up in one word leadership.

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00:11:58.860 --> 00:12:08.760

Senator Burr: it's gary's leadership or its potential potentially Janet Woodcock leadership at FDA it's Rochelle will excuse leadership at CDC.

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00:12:10.200 --> 00:12:27.600

Senator Burr: You know, Washington has this tendency that when we can shut the doors and the windows around an agency internally, they feel better code forced us to open all the portals and there's a tremendous amount of sunlight, but there was tremendous amount of interaction that happened.



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00:12:28.620 --> 00:12:43.680

Senator Burr: agency to agency private sector government government, academia and what I want to do is make sure that those portals remain open as as widely as we can possibly keep them, but I think at the end of the day.

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00:12:44.880 --> 00:13:00.240

Senator Burr: Only good leadership can take the cultural change inside these agencies that we saw and continue to make progress on the design that became the result of their actions.

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00:13:00.930 --> 00:13:14.100

Senator Burr: And I think through that then we will spur something within bartow word Gary comes to the oh and says, if I had this authority, we could do this type of change the same at FDA the same at CDC.

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00:13:15.120 --> 00:13:27.270

Senator Burr: And I guess, my message to all this morning is that ELISE Center Maria and I need that that feedback we need to know what it is, I just give you one quick.

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00:13:28.740 --> 00:13:32.730

Senator Burr: snapshot of what we're working on right now, which is supply chain.

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Senator Burr: And it's fairly easy to figure out how to keep people in the United States in the production manufacturing of PT.

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00:13:43.380 --> 00:13:50.790

Senator Burr: But it's hard to figure out how to keep them in if if every six months china's going to dump in 95 masking gowns and gloves.

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00:13:53.850 --> 00:14:05.790

Senator Burr: So trying to create an architecture that make sure that we have domestic capacity for ppa is more than just working with my colleagues, come up with an incentive or working with.

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00:14:06.270 --> 00:14:20.820

Senator Burr: With Gary on what up on SNS procurement should look like because we actually purchase 4% the federal government of ppa which produces 96% the rest of the commercial market.

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00:14:21.840 --> 00:14:23.970

Senator Burr: So we're we're a small sliver.

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00:14:25.980 --> 00:14:42.930

Senator Burr: But the capacity is what we have to be focused on and the leadership that each of those agency heads provides will allow us to understand better how to create the capacity and maintain that capacity in some form or fashion.

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00:14:45.180 --> 00:14:51.270

Anita Cicero: and well, thank you, thank you, Sir, for your leadership and for participating today really do appreciate it.

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00:14:52.290 --> 00:14:52.920

Senator Burr: Thank you.

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00:14:54.510 --> 00:15:06.000

Anita Cicero: Our next panelist is Dr Gary desborough Dr desborough as you've heard is the director of barda, which is a component of the Assistant Secretary for preparedness and response at hhs.

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00:15:06.510 --> 00:15:20.670

Anita Cicero: barda invest in innovation advanced research and development acquisition and manufacturing of medical countermeasures and those include vaccines, drugs therapeutics diagnostic tools and non pharmaceutical products like pee pee masks.

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00:15:21.240 --> 00:15:23.700

Anita Cicero: needed to combat health security threats.

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00:15:24.360 --> 00:15:37.530

Anita Cicero: barda has established hundreds of public private sector partnerships and as of April of this year, and now has a portfolio of 59 products that have earned FDA regulatory approval slice insurers are clearances.

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00:15:38.310 --> 00:15:53.070

Anita Cicero: Dr desborough joined barda in January of 2007 and has held a variety of positions related to the advanced development and procurement of medical countermeasures against an array of threats to national security and public health Gary i'll turn it over to you now, thank you.

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00:15:53.700 --> 00:16:05.130

Gary Disbrow: Great thanks Anita and Senator Byrd truly appreciate those opening comments, it is critical that we maintain the transparency, not only between.

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00:16:05.490 --> 00:16:12.660

Gary Disbrow: agencies within the Federal Government, but also between the government and the private sector, moving forward it truly has.

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00:16:13.230 --> 00:16:19.890

Gary Disbrow: been game changing and allowed us to do some incredible things I do want to thank the committee for this opportunity today and.

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00:16:20.340 --> 00:16:25.410

Gary Disbrow: highlight the critical role that Barbara has played in the covert 19 response.

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00:16:25.800 --> 00:16:32.430

Gary Disbrow: As many of you know, Bart his mission is to develop medical countermeasures against chemical, biological, radiological nuclear threats.

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00:16:32.790 --> 00:16:47.100

Gary Disbrow: As well as pandemic influenza and emerging infectious diseases and while party does not receive dedicated funding for emerging infectious disease we're always called upon to respond, we responded to H one in one in 2009 Ebola and 2014.

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00:16:49.530 --> 00:16:53.340

Gary Disbrow: A Bola again in 2018 through 2020 and now coby.

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00:16:54.780 --> 00:17:05.850

Gary Disbrow: We accomplish this mission through as Anita said public private partnerships with pharmaceutical biotech government and academic product developers and these partnerships have led.

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00:17:06.270 --> 00:17:17.490

Gary Disbrow: To 59 FDA approvals licensure clearances for vaccines therapeutics and diagnostics that cut across the CBS n pandemic influenza and emerging infectious disease efforts.

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00:17:18.270 --> 00:17:25.830

Gary Disbrow: Early in the coven 19 response we leverage our flexible contract agreements with some of these partners to rapidly pivot to develop.

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00:17:26.190 --> 00:17:30.870

Gary Disbrow: Vaccines therapeutics and diagnostics, to prevent treating detect SARS colby to.

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00:17:31.380 --> 00:17:41.910

Gary Disbrow: We established a coven 19 federal market research portal just prior to the declaration of the public health emergency and today we've reviewed 4400 submissions.

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00:17:42.300 --> 00:17:56.220

Gary Disbrow: And hosted over 630 corona watch meetings with our industry partners, since February of 2020 Bart has entered into or expanded 142 partnerships to develop and support at one products for.

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00:17:57.960 --> 00:18:06.660

Gary Disbrow: Of these, at one products three vaccines three therapeutics and 22 diagnostic tests and been granted emergency use authorization by the FDA.

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00:18:07.560 --> 00:18:18.810

Gary Disbrow: For vaccines and one of therapeutics embargoes coven 19 portfolio were developed using platform technologies in which barda had previously invested for sica Ebola and influenza.

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00:18:19.380 --> 00:18:26.640

Gary Disbrow: These intentional investments in rapid response technologies were critical component of artist pandemic preparedness posture.

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00:18:27.210 --> 00:18:35.220

Gary Disbrow: Other components of our preparedness include the centers for innovation events development and manufacturing or clinical services network.

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00:18:35.580 --> 00:18:47.460

Gary Disbrow: And the division of research, innovation and ventures are easy be a solicitation mechanism that allows barda to rapidly support the early stages of development of innovative products.

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00:18:48.210 --> 00:18:56.940

Gary Disbrow: We as a government have to continue to leverage the investments we've made during the coven 19 response to make sure we are prepared for any future pandemic.

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00:18:57.690 --> 00:19:12.870

Gary Disbrow: We need to prepare now for the next potential pandemic This includes developing prototype vaccines and manufacturing these vaccines at commercial scale development of antivirals that address families of viruses and therapeutics and diagnostic platforms as well.

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00:19:14.010 --> 00:19:18.450

Gary Disbrow: barta is supporting innovation through our division of research, innovation and ventures.

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00:19:18.810 --> 00:19:26.580

Gary Disbrow: Our partnership with Johnson and Johnson J labs DC under the blue night program that recently opened at children's hospital campus in DC.

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00:19:26.970 --> 00:19:34.620

Gary Disbrow: And the just launched barta ventures to fulfill the medical countermeasure innovation partnership authority provided under the 21st century cures act.

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00:19:35.070 --> 00:19:44.370

Gary Disbrow: That allows Barton to partner with a third party entity that can utilize venture capital practices to invest in promising technologies to enhance public health response.

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00:19:45.000 --> 00:19:53.820

Gary Disbrow: The usg needs to support the industrial base capacity expansion efforts for the supply chain as Senator Byrd mentioned, we have.

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00:19:54.960 --> 00:20:05.430

Gary Disbrow: never had the men with sorry we have never had to manufacture vaccines on a global scale and investments in capacity for drug substance and drug product is only part of the solution.

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00:20:06.150 --> 00:20:20.760

Gary Disbrow: If we don't have the critical raw materials and consumables to manufacture these life saving products, we are not prepared the US will be making investments to span domestic capacity and to onshore capacity for products that are manufactured overseas.

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00:20:21.780 --> 00:20:23.100  
Gary Disbrow: We have lessons learn.

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00:20:24.240 --> 00:20:33.480  
Gary Disbrow: from each one and one, and it is critical that we continue to build on these lessons learned so that we can better be paired in the future, thank you.

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00:20:36.630 --> 00:20:37.710  
Anita Cicero: Thanks so much Gary.

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00:20:38.790 --> 00:20:43.770  
Anita Cicero: I will turn now to our next speaker who is Dr Amish adult Joe.

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00:20:45.180 --> 00:20:55.140  
Anita Cicero: Amish is senior scholar at our Johns Hopkins Center for health security than his work is focused on emerging infectious disease pandemic preparedness and biosecurity.

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00:20:55.920 --> 00:21:08.160  
Anita Cicero: Amish has served on US government panels tasked with developing guidelines for the treatment of plague botulism and anthrax and in mass casualty settings and for the system of care for infectious disease emergencies.

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00:21:08.760 --> 00:21:16.470  
Anita Cicero: he's also served as an external advisor to the New York City health and hospitals emergency management highly infectious disease training Program.

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00:21:17.520 --> 00:21:27.480  
Anita Cicero: he's a spokesperson for the infectious disease society of America, he previously previously served on their public health and diagnostics committees and the precision medicine working group.

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00:21:29.400 --> 00:21:41.940  
Anita Cicero: During the pandemic Amish has served on he's been an advisor to a number of businesses, schools, organizations and informal advisor to the International Monetary Fund.

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00:21:43.380 --> 00:21:54.180  
Anita Cicero: He practices infectious disease medicine critical critical care and emergency medicine and the Pittsburgh metropolitan area and has treated, a number of code patients himself Amish over to you.

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00:21:55.290 --> 00:21:59.880

Amesh Adalja: So thank you for that introduction thanks for inviting me to participate, so what i'm going to do.

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00:22:00.270 --> 00:22:09.210

Amesh Adalja: In my comments is kind of talk about how I think we should move forward with pandemic preparedness and move away from kind of a traditional approach where what we've seen is.

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00:22:09.570 --> 00:22:14.760

Amesh Adalja: Basically, a reactive approach that you only see the government, you see the funding agencies jumped into action.

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00:22:15.150 --> 00:22:25.230

Amesh Adalja: After the fact, so there if something is not named in legislation if it's not a bio threat agent that appeared on a list that that includes anthrax tularemia botulism smallpox.

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00:22:25.590 --> 00:22:33.510

Amesh Adalja: For example, you don't see people really doing much work on it until after the fact, and that was that was very evident during sega that was very evident during.

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00:22:34.110 --> 00:22:37.800

Amesh Adalja: During Ebola and I think that type of an approach is something we have to.

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00:22:38.100 --> 00:22:46.290

Amesh Adalja: Get rid of, we have to change the way we think about this because we can't afford to be flat footed when the next infectious disease emergency, even if it's not a pandemic.

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00:22:46.650 --> 00:22:53.910

Amesh Adalja: occurs, so what I think you know, in the past, people have thought this is something that's hard to do, how do you know what's, how do you know what's going to come.

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00:22:54.420 --> 00:23:00.090

Amesh Adalja: How do you prepare for something that might be a disease X something that's not on somebody's list that's not on somebody's radar.

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00:23:00.840 --> 00:23:07.380

Amesh Adalja: And a couple of years ago I worked on a major project at the Center for health, security, trying to distill down what the characteristics of these.

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00:23:07.710 --> 00:23:11.490

Amesh Adalja: threat agents might be that could cause a pandemic, and I think when you do that.

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00:23:11.730 --> 00:23:16.230

Amesh Adalja: Some of it might seem obvious, but some of it is not quite obvious, and nobody really had done that, before to think.

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00:23:16.410 --> 00:23:23.670

Amesh Adalja: What will the next infectious disease emergency or what will the next pandemic pathogen have it will be likely be a virus, it will likely be spread through the respiratory route.

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00:23:23.940 --> 00:23:34.890

Amesh Adalja: It will likely be something that has a spectrum of illness, for very mild to very to very severe there's likely to be no human immunity to it there's likely to be no vaccines and no antivirals.

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00:23:35.310 --> 00:23:47.670

Amesh Adalja: And when you look at the whole schema of viral families out there, it really you can distill that down to maybe about six viral families where there's probably very high confidence that the next pandemic pathogen will emerge from.

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00:23:48.120 --> 00:23:57.630

Amesh Adalja: In those 666 families include things like influenza that we know about a corona viruses that everybody knows about now, but some other respiratory viruses and in those families.

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00:23:58.080 --> 00:24:06.960

Amesh Adalja: There are many different candidate viruses that have that in fact humans now, and there are many that I haven't been discovered yet, but it's likely that something from there will will will emerge.

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00:24:07.380 --> 00:24:12.180

Amesh Adalja: So what I think we could do differently, is to really.

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00:24:12.960 --> 00:24:19.590



Amesh Adalja: digging up with what Dr disco said is really have an emerging infectious disease program that's actually proactive that saying.

150

00:24:19.830 --> 00:24:26.640

Amesh Adalja: We know that there's these viruses out there, these viral families can you actually devise a program where you've got people working on medical countermeasures.

151

00:24:27.210 --> 00:24:31.410

Amesh Adalja: ahead of time from family so, for example, the parent mix of virus family.

152

00:24:32.100 --> 00:24:36.810

Amesh Adalja: And they're working on antivirals they're working on diagnostics they're working on vaccines.

153

00:24:37.020 --> 00:24:42.420

Amesh Adalja: ahead of time and maybe some of that work is being used for the seasonal versions of that because inside pair of mixed virus.

154

00:24:42.660 --> 00:24:50.010

Amesh Adalja: Family includes things like rsv that everybody deals with and you've got this kind of proactive approach that's going forward before the pandemic.

155

00:24:50.490 --> 00:24:57.780

Amesh Adalja: And I think in a way coven 19 proves that, because if there wasn't work that had been done on SARS in 2003 and merged into in.

156

00:24:58.020 --> 00:25:08.550

Amesh Adalja: In 2013 2014 you probably wouldn't have been able to accelerate so quickly when it came to the vaccine platform technologies that basically have saved the world from coven 19.

157

00:25:08.850 --> 00:25:18.060

Amesh Adalja: But because people have figured out, this is the correlative immunity to spike protein is important, all of that work, so what i'm envisioning is a disease X countermeasure program where you actually.

158

00:25:18.270 --> 00:25:25.170

Amesh Adalja: do this for a variety of families and you actually have a program that's dedicated to it so it's not going to be.

159

00:25:25.410 --> 00:25:33.930

Amesh Adalja: Something that's reactive that it's something that we're doing on a day to day basis, and it may actually lead to not only countermeasures for these emerging infectious disease threats, but.

160

00:25:34.140 --> 00:25:40.170

Amesh Adalja: Maybe some of these seasonal viruses that we deal with, day in and day out so there's also a commercial market to it as well, but I think.

161

00:25:40.410 --> 00:25:47.880

Amesh Adalja: What we need to do is really move away from waiting for something to happen and then say okay now we're going to fund it now we're going to have countermeasures because that's not going to work and.

162

00:25:48.090 --> 00:25:53.880

Amesh Adalja: And it wouldn't have worked if there if we wouldn't have had mums and SARS, I think we would be in a very different situation with coven 19.

163

00:25:54.690 --> 00:25:59.760

Amesh Adalja: So that's kind of what i've tried to introduce and I think this is something that can be done, I think it should be done, I think it really.

164

00:26:00.570 --> 00:26:04.440

Amesh Adalja: illustrates what what needs and talked about earlier about really thinking about how.

165

00:26:04.680 --> 00:26:16.950

Amesh Adalja: To think think about the intersection of infectious disease and national security and actually think about infectious disease preparedness as a core component of national security so hopefully that that gave you a flavor of what i'm thinking about, thank you for the opportunity.

166

00:26:18.090 --> 00:26:19.440

Anita Cicero: And thanks so much Amish.

167

00:26:20.850 --> 00:26:27.930

Anita Cicero: Our next speaker is Dr Taro tool, Dr Taro tools executive Vice President and senior fellow at inky tell.

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00:26:28.560 --> 00:26:35.340

Anita Cicero: Prior to joining inky tell Tara served as the undersecretary for science and technology at the Department of Homeland Security.

169

00:26:35.880 --> 00:26:43.560

Anita Cicero: And in this role, she was responsible for scientific and technological research, designed to provide new security and resilience innovations.

170

00:26:44.550 --> 00:27:01.950

Anita Cicero: Previously, she was CEO and director of the Center for health, security and it's past names and affiliations and Dr tool is internationally known for her work on bio security and on health and safety issues related to the US nuclear weapons complex Tara over to you now.

171

00:27:03.390 --> 00:27:09.120

Tara O'Toole: Thank you, Anita, thank you for the invitation to participate today, and I also want to thank.

172

00:27:10.230 --> 00:27:18.990

Tara O'Toole: Gary desborough and his colleagues, in order for their heroic efforts over the past year to keep us all safe.

173

00:27:20.790 --> 00:27:29.280

Tara O'Toole: The big pandemic has shown us, among other things, that we need to expand our notion of what national security is all about.

174

00:27:29.730 --> 00:27:45.150

Tara O'Toole: And we also need to think more strategically about technology as Senator Byrd suggested and how the US can continue to be a leader and producing new technologies to solve big problems among them pandemic response.

175

00:27:46.590 --> 00:28:01.140

Tara O'Toole: Today, I want to talk about two things, firstly, I want to sketch the present innovation ecosystem in the US it's not what it was after World War Two when it's not what Benito Bush thought it was.

176

00:28:02.160 --> 00:28:14.040

Tara O'Toole: But America is innovation capacity is unique and I think it's important to understand how it works today in order to think through how we might improve it and make it more efficient and sustainable.

177

00:28:14.520 --> 00:28:21.240

Tara O'Toole: Secondly, i'm going to briefly describe a conceptual framework but thinking about pandemic technologies.

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00:28:21.630 --> 00:28:30.120

Tara O'Toole: That might be next colleagues and I cutie have developed over the past several years we call such a framework technology architecture.

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00:28:30.960 --> 00:28:44.850

Tara O'Toole: it's not truth but it provides a way of thinking about the capabilities we desire how existing and emerging technologies might be applied or combined to realize as such capabilities.

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00:28:45.390 --> 00:28:56.850

Tara O'Toole: And it also highlights, where the gaps are and where we need new development or investments so first of all, the President innovation ecosystem for biotech.

181

00:29:00.690 --> 00:29:11.490

Tara O'Toole: The neva Bush made a lot of contributions to us, science, but he also was wrong about several matters and one is one was this notion.

182

00:29:12.390 --> 00:29:16.470

Tara O'Toole: That R amp D is a linear process it's not it's iterative.

183

00:29:17.160 --> 00:29:24.780

Tara O'Toole: Technology is as likely to contribute to our understanding of how the universe works, ie basic research.

184

00:29:25.020 --> 00:29:43.440

Tara O'Toole: As his research likely to give rise to technology, and we need to understand that that's one of the reasons, but the necessity of communications between the basic researchers, mostly house and universities and the people who translate that research into usable technology.

185

00:29:45.960 --> 00:30:04.230

Tara O'Toole: The essential components of the US biotech life sciences and biotech innovation ecosystem today, our first of all basic research, how does nature work, how to living organisms, work and, as we deepen our understanding of that, how can we emit manipulate them to our ends.

186

00:30:07.320 --> 00:30:13.290

Tara O'Toole: Our universities have been the envy of the world since World War Two they've been supported.

187

00:30:13.680 --> 00:30:25.080

Tara O'Toole: by the Federal Government, but today the federal R amp D contributions are below 2003 levels in real money, if you think of money flowing to basic research for universities.

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00:30:25.710 --> 00:30:33.210

Tara O'Toole: The second part of the ecosystem, which I think is often overlooked or smooosh in with the private sector and industry.

189

00:30:33.840 --> 00:30:39.450

Tara O'Toole: Is this ecosystem of startup companies that began in the 90s when.

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00:30:40.020 --> 00:30:52.560

Tara O'Toole: The investments and the outputs of our end from the private sector, started to outpace those coming out of federally funded efforts, and that is the case today.

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00:30:53.250 --> 00:31:00.150

Tara O'Toole: startups a small companies who have an idea, they want to translate into a technology or product.

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00:31:01.140 --> 00:31:21.900

Tara O'Toole: it's where most of the innovation across technology areas is happening today it's where our company in cartel works, we go out and hunt for technologies that might solve problems faced by our national security agency customers and then accelerate their use by the Federal agencies.

193

00:31:23.970 --> 00:31:32.610

Tara O'Toole: It began with the revolution in the Silicon Valley and those stories startups but it's come the norm in particular for biotech.

194

00:31:34.920 --> 00:31:42.390

Tara O'Toole: And it's important to understand how this works these small companies are usually supported by venture capital firms.

195

00:31:42.870 --> 00:32:00.870

Tara O'Toole: who are willing to take some risk in investing in an untried solution or supporting the development of a proof of concept we have by far the biggest global vc enterprise in the world and the United States, which is much admired in Europe and gives us a big advantage.

196

00:32:02.430 --> 00:32:04.710

Tara O'Toole: In 2021 and the first order of.

197

00:32:06.240 --> 00:32:16.950

Tara O'Toole: venture capital invested 4.6 billion in synthetic biology companies alone, most of this was bio MED and that was four times the amount.

198

00:32:17.580 --> 00:32:35.280

Tara O'Toole: invested in q1 of 2020 so investment in biotech is absolutely on an upswing, and as I said, these vc investments oppose support most of the translational activity coming out of the universities in biotech and biomet.

199

00:32:37.200 --> 00:32:46.770

Tara O'Toole: So the vcs have some appetite for risk but it's not unlimited they want their money back, preferably more than their money back within three years.

200

00:32:47.280 --> 00:32:53.250

Tara O'Toole: So they're not a good source of funds projects that are high risk, high payback are required long term epic.

201

00:32:53.700 --> 00:33:05.310

Tara O'Toole: That sort of sustained effort really has to be supported by the government, and we need to pick out those technology issues that we really need salt and go after those in a focused and sustain way.

202

00:33:06.540 --> 00:33:12.750

Tara O'Toole: The third part of the ecosystem or big corporations, they have the ability to scale up pro top prototypes.

203

00:33:13.230 --> 00:33:20.340

Tara O'Toole: to manufacture at scale and reach a big customer base and there's other payer players, such as philanthropy and so forth.

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00:33:20.970 --> 00:33:27.810

Tara O'Toole: But as Senator borough said at the outset, we need tighter connections between these different parts of the ecosystem.

205

00:33:28.740 --> 00:33:45.840

Tara O'Toole: barda is one such connection I cutie is another such connection, but we need more regular more informed in deeper relationships between the private sector components of the innovation enterprise and biotech and the universities.

206

00:33:46.590 --> 00:33:57.450

Tara O'Toole: We don't have time to talk about that, today, but keeping each component, strong and constructively interacting with the other parts is going to be critical to the health of the innovation ecosystem.

207

00:33:58.500 --> 00:34:07.680

Tara O'Toole: Now, about a technology architecture for biodefense, as I said in architecture is a conceptual framework for understanding what technology exists today.

208

00:34:08.070 --> 00:34:21.060

Tara O'Toole: What its capabilities are and what capabilities we wish to have need to embody a new tech or combinations of tech it's basically a map for what tech to hunt for and invest in, and what needs to be developed.

209

00:34:21.780 --> 00:34:31.380

Tara O'Toole: So the pandemic technology architecture, we developed at a very high level, we can talk about this till the cows come home with you have time and you want to give me a call.

210

00:34:31.950 --> 00:34:41.610

Tara O'Toole: But at a very high level a technology architecture for detecting responding to quenching epidemics has four big parts or chunks.

211

00:34:42.690 --> 00:34:52.650

Tara O'Toole: First of all, the capabilities, you need our first of all, the first chunk is the ability to detect diagnose and characterize pathogens.

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00:34:53.910 --> 00:34:56.070

Tara O'Toole: So we call that the diagnostic.

213

00:34:58.050 --> 00:35:08.220

Tara O'Toole: piece Secondly, you have to protect those who are well, we saw how important that was during coven Thirdly, you need to treat the sick.

214

00:35:08.850 --> 00:35:21.810

Tara O'Toole: And the fourth technology chunk is that the collection, the cleaning the analysis, the communication of data and using it to inform all three other of the pieces now.

215

00:35:23.460 --> 00:35:36.750

Tara O'Toole: Again i'm going to talk at a very high level, but we don't have time, but if you think about the capabilities, you need in a pandemic response it Apps what technologies, you need we need.

216

00:35:37.530 --> 00:35:47.280

Tara O'Toole: To immediately diagnose what a new emerging pathogen is the best way to do that diagnostically when you don't know what you're looking for is DNA sequencing.

217

00:35:48.300 --> 00:35:59.190

Tara O'Toole: And we did that for diagnostics what you really want if you've got your magic wand out is point of views diagnostics that are quite accurate very easy to use.

218

00:35:59.940 --> 00:36:15.630

Tara O'Toole: And can be bought in safeway the technology for those diagnostics existed in 2005 2006 the reason we don't have more and better diagnostics in the marketplace.

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00:36:16.200 --> 00:36:27.030

Tara O'Toole: i'm excluding the PCR diagnostics tab their place, but, as we know, are expensive slow and you get log jams using these big tech companies.

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00:36:27.750 --> 00:36:38.430

Tara O'Toole: The reason we don't have point of views diagnostics, has to do with market failures in the way diagnostics are reimbursed which we could talk about it's not technology gap.

221

00:36:41.250 --> 00:36:47.040

Tara O'Toole: Clearly we have to continue to characterize the virus, we know that, now as we watched these variants of all.



222

00:36:47.550 --> 00:36:57.870

Tara O'Toole: And I could go on and on that first john for protecting the well you quickly realize the vaccines, the most effective and cost effective medical intervention in history.

223

00:36:58.080 --> 00:37:08.310

Tara O'Toole: Or what you want, you want to be able to design them rapidly and scale up manufacturing very rapidly, there are lots of technologies out there for doing that.

224

00:37:08.610 --> 00:37:19.350

Tara O'Toole: Again it's market forces that have slowed their development, Mr na is amazing it's an obvious choice for a platform, there are others out there.

225

00:37:20.160 --> 00:37:28.050

Tara O'Toole: Including software that basically redesigns the virus to make it into a non replicated but perfect antigen.

226

00:37:28.350 --> 00:37:38.970

Tara O'Toole: A lot of these new technologies again developed by small companies we haven't even seen yet, because the first of the finish line were vaccine technologies.

227

00:37:39.810 --> 00:37:52.470

Tara O'Toole: That had the support of large companies, which is not a bad thing i'm just saying that there's a lot more innovation out there, we also saw that we need technologies to get do away with needles.

228

00:37:53.610 --> 00:38:06.570

Tara O'Toole: The next pandemic auto involve vaccines that are administered be a band AIDS or la or in some mild that you can do at home and doesn't require the intervention of the already overburdened healthcare system.

229

00:38:07.320 --> 00:38:14.430

Tara O'Toole: P P contact tracing would be other technologies under the protect the well chuck moving on to treat the sick.

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00:38:15.690 --> 00:38:32.250

Tara O'Toole: We need to do a much better job of screening existing drug for efficacy again so emerging pathogen Janet Woodcock recently said that of all the clinical trials aiming at that objective that were carried out 96% did not produce useful data.

231

00:38:33.330 --> 00:38:39.090

Tara O'Toole: Either they were underpowered statistically or the biological endpoints for wrong, we got to fix that.

232

00:38:40.320 --> 00:38:59.310

Tara O'Toole: But the other thing you want to do the main capability, you want is the ability to offload pressure on the hospital systems, which we know are going to be under great stress one way to do that, and this happened, the private sector did this on their own was more use of telehealth.

233

00:39:00.900 --> 00:39:11.430

Tara O'Toole: we're not going to go backwards telehealth is here to stay, what we missed was the public health potential of tell it how these companies were collecting good real time data.

234

00:39:12.090 --> 00:39:26.520

Tara O'Toole: That we never incorporated into our situational awareness, they also learned a lot about what works, so we should rethink that going forward and remote monitoring using digital devices which was used for clinical trials and also.

235

00:39:27.060 --> 00:39:35.730

Tara O'Toole: Monitoring patients who couldn't come to the hospital didn't have co but mostly is also here to say so that's the Third, the fourth data.

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00:39:37.020 --> 00:39:47.040

Tara O'Toole: We had a massive failure to collect and make sense of public health data, even for situational awareness, this was no surprise to any of us on this panel.

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00:39:47.850 --> 00:39:57.630

Tara O'Toole: We still have public health departments using faxes and CDC can't hire expert computer sciences, but this is an era where data is everything.

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00:39:58.440 --> 00:40:12.900

Tara O'Toole: Your average advertising company has better data collection and an analytic systems than CDC we have got to fix this if we don't create some kind of rudimentary data supply chain.

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00:40:14.010 --> 00:40:19.950

Tara O'Toole: we're state health departments have standardized data and the foundational capacity to collect it.

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00:40:20.910 --> 00:40:30.930

Tara O'Toole: It doesn't matter what we do with the 1.7 billion forecasting the Congress awarded, we also have a big talent deficit, we need to put some of the best minds.

241

00:40:31.590 --> 00:40:45.210

Tara O'Toole: In a very competitive area of data science on figuring out what kind of data, we need and how to get it and have make much use word, I will end by saying hospitals did much better in this arena than public health.

242

00:40:47.250 --> 00:40:51.570

Tara O'Toole: Particularly the big hospital systems were very data driven.

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00:40:52.080 --> 00:40:59.520

Tara O'Toole: And the way that they altered, not just their clinical care, but the protection of their staff, the deployment that P P, etc, etc.

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00:40:59.820 --> 00:41:07.320

Tara O'Toole: And I think one of the things we ought to do, in the spirit of Senator Byrd saying we have to glue things together and have more collaboration.

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00:41:07.860 --> 00:41:12.510

Tara O'Toole: Is think much more careful way, but how hospitals could serve public health functions.

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00:41:12.870 --> 00:41:29.190

Tara O'Toole: And maybe we want to move the Center of gravity towards hospitals which have a lot more capacity, a lot more resources than state or local health departments ever would I don't know how to do that, but I think it's something that we need to consider anyway.

247

00:41:30.240 --> 00:41:35.970

Tara O'Toole: we're in a bio revolution, we know a lot about how organisms work and how to manipulate them.

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00:41:36.480 --> 00:41:50.910

Tara O'Toole: there's lots of technology out there, the task for the government is figuring out how to see and reach and invest in and help develop those technologies to meet the capabilities that we need, thank you.

249

00:41:52.620 --> 00:41:54.990

Anita Cicero: Thank you so much Tara a lot of food.

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00:41:56.400 --> 00:42:00.780

Anita Cicero: i'm sure it's already I see generating comments and questions in the chat.

251

00:42:01.860 --> 00:42:12.000

Anita Cicero: i'm going to turn now to our final speaker Dr Jacob sweat and jake, with your permission i'm going to truncate your impressive bio a bit to give you some more airtime but.

252

00:42:12.510 --> 00:42:21.390

Anita Cicero: jake is an advisor to the open philanthropy project on biotechnology nanotechnology and bio security issues and he's worked on it.

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00:42:22.050 --> 00:42:37.500

Anita Cicero: With a number of organizations at the intersection of science and policy and worked on novel forms of DNA sequencing biosensors and materials at the nano scale and jake i'm looking forward to hearing your remarks.

254

00:42:38.520 --> 00:42:44.220

Jake Swett: Thanks Anita and thanks to the Center for an opportunity to speak today about a topic that i'm very passionate about.

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00:42:44.610 --> 00:42:54.300

Jake Swett: You know, start by echoing many of the messages that other than that our panelists have already conveyed today, and you know, use the kind of opportunity to speaking last to reiterate and summarize some of these points, while.

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00:42:54.720 --> 00:42:58.650

Jake Swett: Taking a few minutes to talk about you know where I think we can go from here.

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00:42:59.790 --> 00:43:13.260

Jake Swett: You know, as as a country as well aware, and each and every one of us is well aware, the pandemic is caused tremendous suffering and its really laid very bare have any of the vulnerabilities and equities and blind spots to infectious disease.

258

00:43:14.250 --> 00:43:24.810

Jake Swett: But I think with this tragedy there's also come a fair bit of clarity on areas where we can improve and as many others have said, I think there's tremendous opportunities here for.

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00:43:25.260 --> 00:43:39.060

Jake Swett: Technology, which it goes without saying now you know technology underpins the foundation of all aspects of addressing biological threats everywhere from vaccines to pee pee to diagnostics and.

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00:43:39.780 --> 00:43:50.280

Jake Swett: While it's certainly only a component of an effective system, I really like to argue that technologies have a tremendous opportunity as that component to empower public health.

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00:43:50.910 --> 00:43:56.460

Jake Swett: provide the tools to support the Community out there, doing the work the infrastructure needed.

262

00:43:56.940 --> 00:44:06.120

Jake Swett: And even the ability to deter against deliberate biological threats and collectively, it provides the tools that we need to prevent pandemics in the future.

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00:44:06.960 --> 00:44:13.500

Jake Swett: And you know the major conclusion that i've come away with you know as a result of this panel and also.

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00:44:14.310 --> 00:44:27.330

Jake Swett: From your large effort that open plans free took to survey experts from all sectors fields industries is that there's really a unique moment now as a consequence of the pandemic, to ensure that nothing like coca.

265

00:44:28.680 --> 00:44:39.870

Jake Swett: or, worse, could ever happen again, and we can do this with, as already been mentioned, the lessons learned from the pandemic the incredible momentum of technology development.

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00:44:40.320 --> 00:44:45.510

Jake Swett: And really the clarity and focus that the pandemic has brought to the problems that we need to solve.

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00:44:46.290 --> 00:44:53.310

Jake Swett: You know it's well within our reach, to have a world in which you know pathogens are sequence within a day of an index case.

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00:44:54.210 --> 00:45:02.340

Jake Swett: or even before anyone's infected, you know where we can have a vaccine widely available in 100 days or less SAP has announced.

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00:45:02.880 --> 00:45:12.600

Jake Swett: we're gonna even before that you can have broad spectrum antivirals know as Amish mentioned and have those already in advance of the threat showing up at our doorstep.

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00:45:13.080 --> 00:45:20.190

Jake Swett: You know everything from targeted therapeutics you know monoclonal we could have those within a week in the future if we if we really focused.

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00:45:20.850 --> 00:45:27.270

Jake Swett: And we have the ability to treat you know people who are affected, if any, and then you know provide these also proactively.

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00:45:28.140 --> 00:45:35.610

Jake Swett: You know, we can have a world in which our surroundings in our built environment or buildings in our vehicles, reduce transmission of infectious disease.

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00:45:36.120 --> 00:45:43.980

Jake Swett: As opposed to enhancing it that we've seen with the current pandemic and you know, we could have innovations and bb you know, not the least of which so that it's available to everyone.

274

00:45:44.340 --> 00:45:52.950

Jake Swett: but also ensuring that you know we're prepared for another pathogen like SARS coby to but also making sure that you know the pee pee we have next time around.

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00:45:53.370 --> 00:45:57.450

Jake Swett: Also, has this prepared for more transmissible pathogens, such as measles.

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00:45:58.020 --> 00:46:05.970

Jake Swett: I mentioned, you know many, many more aspects, but you know, sometimes I think it's often easier to summarize the goal, especially when the goal is clear and.

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00:46:06.630 --> 00:46:15.600

Jake Swett: You know I think there's an analogy here, you know justice countless technologies went into the space program to take us to the moon, you know a number of technologies and people.

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00:46:16.200 --> 00:46:20.190

Jake Swett: will allow us to achieve a goal here of a pandemic free future.

279

00:46:20.760 --> 00:46:32.640

Jake Swett: You know around free from pandemics, it is, is a world when we you know replay the timeline of the current pandemic and it's largely a non event, you know it was it was over before it ever made the headlines.

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00:46:33.510 --> 00:46:37.320

Jake Swett: And you know i'll be the first to admit that this is this is absolutely ambitious.

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00:46:38.070 --> 00:46:43.170

Jake Swett: But bringing about such a world I think it's really important to emphasize is absolutely achievable.

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00:46:43.500 --> 00:46:53.610

Jake Swett: You know I would contend that it's certainly less challenging to bring this road all about than it is to go to the moon, and you know if we were to apply the same sort of resolve that we did to go to the moon.

283

00:46:53.970 --> 00:47:02.310

Jake Swett: and bring a person safely back to earth, then we could achieve a world resilient to biological threats and a future for you from pandemics before this decade is out.

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00:47:03.300 --> 00:47:12.270

Jake Swett: And it's also really the case that we can't afford not to you know, investing in innovation in the technology ecosystem will pay dividends for for years to come.

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00:47:12.780 --> 00:47:18.240

Jake Swett: And, coupled with changes to strengthen our public health and our Defense systems it's absolutely possible.

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00:47:18.810 --> 00:47:26.430

Jake Swett: You know, several other panelists have already mentioned, but this, but you know we already largely possess the scientific capabilities needed to achieve a pandemic, for your future.

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00:47:26.760 --> 00:47:34.560

Jake Swett: Advances in the life sciences, especially accelerated by the pandemic have brought many technologies and capabilities, you know I would say to an inflection point.

288

00:47:34.950 --> 00:47:48.390

Jake Swett: Where you know, the first time in humanity ending pandemics is within our grasp, but you know only if we commit ourselves to it, you know example, everyone knows now is Mr na vaccines, which saw rapid advances as a consequence of the pandemic.

289

00:47:49.140 --> 00:48:04.650

Jake Swett: But you know, next time, though, we could have that technology developed beforehand, and you know, Mr RNA vaccines are really just one example of countless other technologies that are waiting to have the same success story, and hopefully the same success story not during a time of crisis.

290

00:48:05.850 --> 00:48:14.520

Jake Swett: But you know, a pandemic free futures really only going to be realized, by the end of this decade, if the US Government provides the leadership for the private sector and academia.

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00:48:14.940 --> 00:48:21.660

Jake Swett: And the focus that really goes beyond the status quo, you know net now is absolutely not the time to double down on the way we've done things before.

292

00:48:22.350 --> 00:48:33.510

Jake Swett: You know, we need to make sustained investments in technology development and sure that the necessary infrastructure and systems are put in place and that the talent, is there to both bring the technology to fruition and utilize it.

293

00:48:35.670 --> 00:48:47.940



Jake Swett: You know we're going to be tested again, and the next time, maybe much, much worse in you know what we'll look back at this time and at what was done and will know whether we rose to the challenge or not.

294

00:48:49.050 --> 00:48:58.860

Jake Swett: You know i'll just wrap up by saying that you know I think you know Congress has historically lead on pandemic preparedness and I think Congress has a unique opportunity here to look ahead to the horizon.

295

00:48:59.310 --> 00:49:09.510

Jake Swett: and push to a better future, you know, by providing the funding and resources necessary authorities and oversight, you know holding agencies accountable to ambitious goals.

296

00:49:10.200 --> 00:49:15.180

Jake Swett: You know our nation can absolutely lead the way over the next decade to an era of and being pandemics.

297

00:49:15.930 --> 00:49:20.340

Jake Swett: know that there's, of course, a lot more that can be said about this, but i'm conscious of the time.

298

00:49:21.090 --> 00:49:26.130

Jake Swett: So i'd like to just end with the final comment, which is that you know I think this is the first time in history.

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00:49:26.700 --> 00:49:34.110

Jake Swett: That we didn't really have the opportunity to mobilize the nation and shorter course to and inspiring goal of a pandemic free future.

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00:49:35.070 --> 00:49:50.760

Jake Swett: it's within our reach to completely change humanity's relationship with infectious disease, and I for one absolutely think that's such an incredible goal that's worth achieving and I really look forward to some of the discussion about that, with the rest of the panelists Thank you.

301

00:49:55.650 --> 00:50:05.490

Anita Cicero: Thanks so much jake and thank you all, while we have Senator burst alliance and thank you, Sir, for staying on until this point.

302

00:50:06.270 --> 00:50:13.590

Anita Cicero: There is a question, maybe you could address, which is how do we convince both in the US.

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00:50:14.580 --> 00:50:30.270

Anita Cicero: populace and government representatives that prevention is absolutely worth it, so they investments that Tara and Jake were referring to in terms of you know more on the prevention side, and not just you know treatment both from.

304

00:50:30.840 --> 00:50:41.130

Anita Cicero: The economic and you know human lives angles, how do we get that message across, and I mean overall, how do we inspire investment.

305

00:50:42.750 --> 00:50:43.920

Senator Burr: I think the answer is.

306

00:50:46.380 --> 00:51:09.900

Senator Burr: We have shown a tendency over the last 20 years to invest in that is Gary knows from the history and Barton noses Congress has an attention span that only last so long so as Gary mentioned, we went through each one and one we went through a Bola we went through SARS.

307

00:51:10.950 --> 00:51:24.120

Senator Burr: A laundry list of things those still didn't get the attention of policymakers and appropriators and there were several times, I think Gary would agree, we had barda on life support.

308

00:51:24.690 --> 00:51:40.800

Senator Burr: Because people forgot about why we created that entity we've got an opportunity right now that I think is unbelievably unique is while this is fresh in people's minds and they understand that that investment paid off and.

309

00:51:42.390 --> 00:51:53.370

Senator Burr: The challenge is as Jacob said let's double down on some things as long as we've got the correct oversight and and.

310

00:51:53.880 --> 00:52:08.100

Senator Burr: To use terrorists term is we create this architecture we've got the plane we communicate to CDC to FDA to barter exactly what the expectations are and then Congress has to do the oversight.

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00:52:10.530 --> 00:52:22.320

Senator Burr: To make sure that the deliverables were there, we will always run into a situation that if five years from now, we haven't had another scare.

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00:52:23.940 --> 00:52:30.900

Senator Burr: Then Congress will begin to divert funds from areas that we need that investment in.

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00:52:31.620 --> 00:52:40.860

Senator Burr: And that's why I think it's absolutely crucial that academia, be a full fledged partner into this, because the things that we can accomplish on the academic bench.

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00:52:41.850 --> 00:52:53.220

Senator Burr: With distractions that happened within Washington and that's the fastest way to make a quick connect to the Members through who represents it.

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00:52:54.780 --> 00:53:05.700

Anita Cicero: Thank you and I know my colleague Margaret Miller who's on the line has been monitoring trashing some other questions that have come up Margaret mode, what do you have for us next year.

316

00:53:06.120 --> 00:53:17.820

Margaret Miller: So here's a question for Dr tool, I mean you mentioned some of us in the chat but just if you could reiterate it here can you address the differences and importance of detection used and surveillance for early warning first detection used in response effort.

317

00:53:21.630 --> 00:53:22.530

Margaret Miller: you're on mute Tara.

318

00:53:25.530 --> 00:53:26.790

Tara O'Toole: You think I know by now.

319

00:53:28.830 --> 00:53:41.160

Tara O'Toole: detection and response is really centered on diagnostics, on being able to get rapid point of use diagnostics out to the whole population and then have them.

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00:53:41.550 --> 00:53:52.770

Tara O'Toole: diagnose themselves again and again and again, so you have a real time picture of where the epidemic is where it's going whether it's getting better whether it's getting worse, the technology for that exists.

321

00:53:54.390 --> 00:54:08.010

Tara O'Toole: If you do not have that kind of diagnostic capability, you do not know what's going on you're guessing basically, so I would place diagnostics, close to the Center of the universe and pandemic response.

322

00:54:09.360 --> 00:54:17.760

Tara O'Toole: Early Warning IE can we move to the left on the evolution of pandemics, so that we see spillover as it occurs.

323

00:54:18.600 --> 00:54:32.400

Tara O'Toole: or shortly after it occurs, requires a different focus the focus, there is not on, who in the population is sick or infected the focus on spillover has to be on where to animals and people come together.

324

00:54:33.480 --> 00:54:50.190

Tara O'Toole: In unusual ways it seemingly has occurred most often where differences and land use are occurring where humans are commercializing jungles or moving into previously.

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00:54:50.970 --> 00:54:59.940

Tara O'Toole: uninhabited areas uninhabited by humans and coming into close contact with animals so it's a different focus and we're going to require different tools.

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00:55:00.420 --> 00:55:11.340

Tara O'Toole: it's mostly going to be observational and sequencing I think that tells us what's going on in these ecosystems, but addition and additional in addition to early forecasting.

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00:55:11.970 --> 00:55:16.950

Tara O'Toole: We need to get smart on how we avoid spillover in the first place.

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00:55:17.850 --> 00:55:38.010

Tara O'Toole: We need to figure out how to live peacefully with animals while developing the land, we need to help humans survive, but understanding spillover the whole one health concept is going to take one I think more heft and we will need more technological capabilities in that area to come.

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00:55:42.720 --> 00:55:53.820

Margaret Miller: Great Thank you i'm a doctor just bro how is your vision, specifically for the ID work at barda shifted and what's your kind of strategy moving forward.

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00:55:55.140 --> 00:56:03.540

Gary Disbrow: So I mean as a mesh in jake highlighted, you know emerging infectious disease is.

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00:56:04.170 --> 00:56:12.030

Gary Disbrow: You know you have to prepare in advance if you're responding it's going to be expensive we're always going to be chasing it we're always going to be behind the eight ball.

332

00:56:12.570 --> 00:56:24.180

Gary Disbrow: So you know the the thought is that you take a virus family, and this is what was done for SARS coby to the work done by NIH and the brc for search SARS and mers.

333

00:56:24.510 --> 00:56:33.030

Gary Disbrow: Is they had developed a stabilized spike protein they had shown in non clinical studies that generated an immune response, and it can be expressed.

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00:56:33.360 --> 00:56:42.240

Gary Disbrow: That was the same technology that served as the spike protein for SARS coby to so within the same family, so you develop a prototype vaccine.

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00:56:42.510 --> 00:56:53.640

Gary Disbrow: That you know once if it's some virus from within that family, you can just start utilizing that technology as similar thing was done for Ebola it's was not a pandemic.

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00:56:54.300 --> 00:57:06.300

Gary Disbrow: But you know, working together with Merck in Interagency partners in the who we developed the first licensed Ebola vaccine so we're now utilizing that same technology that was.

337

00:57:06.810 --> 00:57:20.670

Gary Disbrow: used to support that to look for to develop Marburg and Sudan vaccines as well, so again use the same platform if it works for one member of a viral family, it should work for others as well.

338

00:57:27.780 --> 00:57:33.870

Margaret Miller: Sorry okay great um and i'm going to ask, maybe Dr site, if you could talk about this.

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00:57:34.410 --> 00:57:39.930

Margaret Miller: One has to change at the federal level to realize the full potential of the technologies being developed in the ecosystem.

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00:57:40.320 --> 00:57:48.600

Margaret Miller: And how do we create create an integrated federal response that leverages the power of innovation to stay ahead of future events and others can jump in on this question too if you'd like to.

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00:57:50.190 --> 00:58:00.510

Jake Swett: Oh well, I think many of the points that other panelists made get to this, you know I think all sectors from you know the Federal Government to industry to academia.

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00:58:00.960 --> 00:58:11.610

Jake Swett: And philanthropy will need to play a role in this, but you know what I think is missing a bit, though, is this coordinating function, and this is where I think the government really has a unique opportunity.

343

00:58:11.910 --> 00:58:19.950

Jake Swett: You know, to go back again to the analogy, I gave before going to the moon, you know this was a vision achieved by NASA, but when you look at you know who did it.

344

00:58:20.250 --> 00:58:25.980

Jake Swett: It was Americans in every single state across the country, and it was people in universities, it was people.

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00:58:26.340 --> 00:58:40.410

Jake Swett: and companies and what I think needs to be done is really a clear vision set out and then across the technology development ecosystem, you know up the technology development scale from innovations at NIH.

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00:58:41.040 --> 00:58:49.410

Jake Swett: Through to implementation at agencies such as the CDC the government, we need to have a comprehensive vision of how to.

347

00:58:49.920 --> 00:59:01.290

Jake Swett: coordinate these and bring them about, and that will involve you know, several agencies, you know, such as barda and in to tell which I think they absolutely essential role in directly interfacing with.

348

00:59:02.100 --> 00:59:10.110

Jake Swett: These different components to ensure that the government government has the opportunity to achieve that vision, while leveraging.

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00:59:10.530 --> 00:59:29.340

Jake Swett: Much more of the research and development funding that is available in this country and and around the world, and so I think it comes with you know, a vision that you know is across the government that's you know resourced over over many years to bring that about.

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00:59:31.350 --> 00:59:39.660

Anita Cicero: And jake ic and via the Q amp a there's a little bit of pushback from from one of our participants online about how.

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00:59:40.050 --> 00:59:46.860

Anita Cicero: Whether what the task at hand is more or less difficult than sending someone to the moon, or even to Mars and.

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00:59:47.730 --> 00:59:55.590

Anita Cicero: And that we should all prepare for a much longer and larger term effort, because there's still so much to learn about.

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00:59:55.980 --> 01:00:09.120

Anita Cicero: Basically, the chemistry of life, so I wonder, you know Tara Amish Gary or were jake if you want to jump back in what your reaction to that is and how we see the gravity of the issue.

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01:00:12.030 --> 01:00:13.230

Anita Cicero: You would like that one tear.

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01:00:13.410 --> 01:00:21.540

Tara O'Toole: yeah we're look we're in a scientific revolution, based upon the life sciences converging with the digital sciences.

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01:00:22.980 --> 01:00:31.080

Tara O'Toole: And this is going to keep going because most of the world is avidly seeking the products of the scientific revolution.

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01:00:32.670 --> 01:00:42.540

Tara O'Toole: So what we have to understand is how much capabilities out there if we figure out how to marshal it and what we want, frankly.

358

01:00:42.990 --> 01:00:57.000

Tara O'Toole: I mean Senator Byrd was talking about supply chains 10 years from now 60% of our supply chain, all of the economic goods going into the economy, this is, according to the McKinsey global will is going to be made biologically.

359

01:00:58.080 --> 01:01:07.830

Tara O'Toole: Synthetic biology is going to solve a lot of our manufacturer at home problems and we're going to manufacture on demand, with less pollution.

360

01:01:08.940 --> 01:01:25.590

Tara O'Toole: We need to realize what a big deal the scientific revolution is and the United States created, it was our decades of funding and nsf and NIH that made this possible, plus the digital revolution that NASA and the moonshot help generate.

361

01:01:26.940 --> 01:01:41.520

Tara O'Toole: And we need to think big, we need to think long term and we need to understand what what's at stake economic competitiveness is going to depend to a tremendous degree on biotech in the next decade.

362

01:01:42.840 --> 01:01:48.300

Tara O'Toole: And, as I said, it's going to be a major manufacturing platform and not just for vaccines.

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01:01:49.380 --> 01:01:59.340

Tara O'Toole: But thinking big is what we ought to do, and the question is quite correct this is going to be a long a long runway, as they say.

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01:02:00.690 --> 01:02:12.420

Anita Cicero: Okay, I think that is a good place to stop at our our final minute on the hour Thank you all so much for joining us thank you senator for your leadership on these issues.

365

01:02:13.290 --> 01:02:21.270



Anita Cicero: And just want to remind our broader audience here to please join us for our next webinar in this series which is going to be on June 16.

366

01:02:21.660 --> 01:02:35.310

Anita Cicero: And we're going to be talking at that time about global vaccine needs and what role Congress can play and expediting international vaccine access so until then, I thank you again and enjoy the rest of your day thanks.