Clinical Laboratory COVID-19 Response Call

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Panelists

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Jay Butler, MD, Deputy Director for Infectious Diseases, CDC
Sara Brenner, U.S. Food and Drug Administration (FDA)
Tim Stenzel, U.S. Food and Drug Administration (FDA)
Jim Flanigan, American Society of Clinical Laboratory Science (ASCLS)
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NANCY ANDERSON: Good afternoon, everybody. Thank you for joining us today. My name is Nancy Anderson. I am the Senior Advisor for Clinical Laboratories in CDC's Division of Laboratory Systems. As you may have heard on previous calls, we're the CDC division that works to advance laboratory quality and safety, data and biorepository science, and workforce competency across the US clinical laboratory community. We also work closely with clinical and public health laboratories across the country to support laboratory emergency preparedness and response activities.

Throughout the COVID-19 response, we've been supporting CDC's Emergency Operations Center by serving as an interface between CDC and the clinical and public health laboratories. Some of the areas we've focused on include laboratory biosafety, the regulatory requirements under the Clinical Laboratory Improvement Amendments, or CLIA, additional laboratory quality issues and challenges associated with implementing laboratory-developed tests.

During the calls, we've been discussing hot topics and soliciting questions about the work that clinical laboratories are doing to support the nation's response to the COVID-19 pandemic. We want to use the calls to create a platform for CDC and other government agencies to provide valuable information to clinical laboratories.

Because we anticipate there being a large number of participants on this call and receiving many questions, we may not be able to directly and immediately address every issue. However, we do appreciate your questions and feedback and we tailor the content of future calls accordingly. We'll be sharing some slides during today's call, and we'll post the slides online along with the audio and transcript later this week.

If you happen to have a clinical laboratory related question you'd like our team to address on a future call, you can submit those for consideration by using the question and answer Q&A function in Zoom or by emailing DLSInquiries@cdc.gov. If there are any media on the call that

have questions, please contact CDC Media Relations at media@cdc.gov. And if you are a patient, please direct any questions you have to your health care provider.

Now, an announcement-- after today's call, we'll begin hosting these calls every other week instead of weekly. And the call time will be extended from 45 minutes to one hour. So the next call will take place on Monday, July 6th, from 3:00 to 4:00 PM Eastern Daylight Time.

Here's some information for laboratories that may be useful. CDC has now posted LOINC In Vitro Diagnostic, or LIVD, test code mapping for the SARS-CoV-2 test results. This specification supports the use of standardized LOINC and SNOMED clinical terms to improve the accuracy of reporting tests for the SARS-CoV-2 virus. Using these harmonized LOINC and SNOMED CT codes helps ensure that the same type of test is represented uniformly across the United States.

So we've included a link to this LIVD specification on the Information for Laboratories slide. And more information is available on the IVD Industry Connectivity Consortium website. Please download the LIVD mapping and share with your IT division. The test that is being performed should be represented with a LOINC code. The result answer and the specimen should be represented with SNOMED CT codes identified in the mapping. So using the identified codes will make it easier to define triggers to initiate a digital case report and start contact tracing.

Before we begin, I'd like to share that our Training and Workforce Development branch is interested to learn more about the education and training gaps you're currently experiencing. We invite you to send your feedback via email to LabTrainingNeeds@cdc.gov.

At this time, I'd like to welcome Dr. Jay Butler, who's CDC's Deputy Director for Infectious Diseases, who will give us some opening remarks. Dr. Butler, I'll turn it over to you.

JAY BUTLER: Great. Hey, thank you. And good afternoon, everyone. Good morning if anybody's joining us from Alaska or Hawaii. So let me start with just a quick situational update. Over the past two weeks, on average, roughly 23,000 new COVID-19 cases have been diagnosed and reported each day with, on average, 675 new deaths reported each day.

The trend over the past two weeks has been that there's been an increase in the absolute number of new cases reported. That's not consistent across the country. 19 states have seen an upward or flat trajectory. Roughly 35 states or territories have seen a downward trajectory in incidence.

The areas that are seeing high and growing incidence are in both urban and rural areas mainly in the southern US. Arizona has reported probably the most rapid increase in incidence over the past few days. The number of deaths, though, has continued to decline. And at this point, it's a little early to say whether or not this is because there's a lag between when cases are diagnosed and reported and when death occurs, which generally occurs during the second week of illness, or whether this is a reflection of an increased number of diagnoses in people

who are young and otherwise healthy or possibly even asymptomatic infections that are being diagnosed-- so following that situation very closely.

Another metric that we're following closely is the proportion of tests that are positive. One of the metrics that we follow is the proportion positive in the past seven days compared to the prior 30 days. 30-- rather, 24 jurisdictions actually have had a higher rate of positivity in the past seven days compared to 30 days ago. Seven have had no significant change. And 17 have actually had a decline.

And somewhat like the cases reported, some southern states, particularly Texas, Arizona, and Florida, have seen the biggest increases in the proportion of the tests positive. Looking at the volume of tests, we're not seeing a huge increase or decline, so we do think that this increase in positivity is related to actual increases in transmission.

In looking at hospital data from around the country, it's important to recognize that the total number of inpatients with COVID-19 have actually remained relatively stable over the past week, although the total number of people in hospitals has continued to increase, reflecting the fact that as mitigation efforts are eased there's an increased number of people who are admitted to the hospital for a variety of elective reasons.

Nationally, the total number of ICU patients and total number of ventilators in use have remained stable. And of course, every now and then we do hear of hotspots where ICU and ventilators are being utilized more, and those are usually picked up pretty readily by the media.

Mentioning serology, I think it's important to look at some of what's showing up in terms of seroprevalence around the country. I think, like many people, we're finding that the number of cases that are reported is probably on the order of at least tenfold below what the actual rate of infections are based on seropositivity. I think that's not shocking to most people on this line given the fact that asymptomatic infections and mildly symptomatic infections may not have resulted in testing and may be very unlikely to have resulted in contact with medical care to receive testing. Additionally, those who do seek medical care are not always tested for COVID-19.

The state health departments and some of the large city and territorial health departments-- 64 jurisdictions altogether-- are receiving funding to support testing, and it involves submitting plans for testing for the months of May and June as well as the second phase of testing during July through December. The first round of those plans has been received. Most were rated good to excellent.

There were a few jurisdictions where there was follow-up to provide technical support, and we continue to work to get testing guidelines out and available to the states to help guide them on the second round of their testing plans, which are now due on July 10th. So maybe with that, I'll pause, and there may be an opportunity for question and answer later, but I'll turn it back over to the moderator.

NANCY ANDERSON: Thank you so much, Dr. Butler. I don't see any questions for you right now. So at this time, I'll turn it over to our first panelists. Again, please welcome Tim Stenzel and Sara Brenner from the FDA.

TIM STENZEL: Thank you, Nancy. A couple of quick topics and then I'll go into some previous questions and attempt to answer them. First is last week we issued our first warning letters to some serology providers. They were apparently following unauthorized activities and marketing. So a press release was made last week, and warning letters went out.

Second is that we have now made public 11 NCI serology reports. And that-- those are present and can be viewed by the public. I'm just trying to find out where that link might be posted. But, Nancy, I can forward the link to you so that you can disseminate it as needed. Subsequent calls, I'll make sure where that link might be found. [Link: https://open.fda.gov/apis/device/covid19serology/]

OK, those are the two starter topics. I'm going into questions and hopefully answers. First question is, "Any thoughts upcoming data recommendation or expected EUAs regarding cooled salivary samples?" I would say, please see our updated molecular templates. We have updated it for pooling. Those announcements were made last week. Pooling can apply to any sample type. And I would reiterate that pooling does require an EUA, whether that's a lab altering a test, their own test, or, for kit manufacturers, if they wish for their test to be-- utilize pooling.

"Could you provide a statement regarding sensitivity of saliva in relationship to other samples?" So for labs that wish to validate saliva, we have recommendations on comparison performance compared to another sample type, such as a nasal swab, nasopharyngeal swab, or a mid-turbinate swab.

And there are different kinds of sensitivities. There's analytical sensitivity, which is LOD. There's clinical sensitivity, which I just referred to. And it is determined between two swab types or, in some cases, between different tests. And then there's also correlation between cycle threshold, or CT, CTs for those assays that generate CTs.

So the most important is that we don't see a huge dropoff in LOD and that we see a good clinical sensitivity concordance between two sample types that are used to validate saliva, whether this be the recommendations for labs or the recommendations for kits. And we would say that we would like to see 95% or greater concordance between those two sample types. Certainly for those who are making authorizations, that is the recommendation for performance.

When it comes to correlation with cycle thresholds, there seems to be sometimes a challenge showing good correlation between saliva and any of the swab types. We're not exactly sure why that is. This is even in well-preserved saliva samples. So we just think that virus levels in saliva can vary widely for whatever reason relative to a nasal, nasopharyngeal, mid-turbinate swab samples.

So pay attention to that. If you submit something with saliva, we'll want to look at that as well. But, again, the most important measures are that you maintain a good LOD and that your clinical correlation studies show good concordance between paired sample types.

Next question is on on-home self-collection kits. "Would you say a health care provider observation is still required?" I would refer you to the molecular home collection template that is posted. We are working on one for serological tests. So stay tuned for that. We will update our website when that is available. I can't promise a time though.

The observation that might or might not be required does depend on the sample type. So no, it's not required if there is an anterior nasal swab in general or mid-turbinate swab as long as it's validated. And for mid-turbinate, it includes a pediatric size, and when there's a mid-turbinate used on kids and in a home environment, we would expect that in every situation there may be a child so that a child-size mid-turbinate swab is important to put in that kit and that it's validated when performed by a parent or guardian for collection.

So again, health care observation is not necessarily required. There are some sample types that we were asked about that would require it. We've discouraged those kind of sample types. And hopefully using anterior nasal swabs and mid-turbinate swabs this meets performance expectations. And unless there's some performance observed that would require observation, in general, we do not require it.

If there is any sort of observation, yes, a video link could help and meet that need. But, in general, we're trying to steer people away from requiring, for at least sample collection, the presence of a health care provider online or virtually.

Next question, "Does the laboratory performing a non-FDA approved international test as an LDT must the laboratory notify FDA of implementation of such testing prior to testing and reporting patient samples?" So my answer is that any testing for clinical purposes for SARS-CoV-2 and COVID-19 does require an EUA via one of the pathways that is appropriate. This particular question has to do with probably an RUO kit. For now, reach out to our EUA templates address, email address, to ask that question. And we are working on a frequently asked question with regard to use of our research use only kits.

Next question, "Our lab doesn't use either of these two tests." I think these are point of care tests. I think one is the Abbott ID NOW, and the other is the only authorized so far antigen test. They're asking, "But our epidemiologists are hearing from some health care professionals that they suspect some false positives from asymptomatic people. And it may not just involve these two tests. We do understand that not all infected will exhibit symptoms. Are others hearing reports of possible false positives?"

So I would refer you to our updated molecular templates that were posted last week, which involve recommendations for asymptomatic test validation. They are required if you're going to

make claims for use in the asymptomatic population. But we think there are good recommendations to understand performance of the test in that population.

Most if not all tests will have false positives and false negatives. The quality of sampling and the time difference between sampling can play a big role in discordant results between two tests or two observations. So you can have a positive with one test and say, I'm not sure if that's positive, and go back and sample that patient again and they're negative even with maybe a more sensitive test. But there could be-- if the difference involves a change in the virus shedding or if there's a difference in how well that sampling is performed, that could explain the differences.

So I would say that we have not heard of false positive issues that would at this time cause us concern with any of the molecular tests. That's not true for serology, obviously, but for the molecular tests. We have not seen concerns there. But do please report any issues to the test developer and/or report through the MedWatch link on the FDA EUA FAQ page.

Next had to do with an Abbott ID NOW question with a literature reference that showed low sensitivity. Again, I would reiterate that we are closely monitoring this situation with Abbott ID NOW. We have required an IFU update that says that negatives are now presumed negatives, and when appropriate, testing should be reflexed to another molecular test. And we have required Abbott to perform a new post-market study for the Abbott ID NOW that we are closely tracking. And we will make additional updates and announcements as warranted.

Next question is, "What vendors can we contact for serology validation?" My answer is there are contract research organizations out there that are qualified. However, we do not make recommendations for such organizations.

And finally, the final question is, "For antibody testing, the FDA recommends an independent two-test algorithm when the testing population prevalence results in a low PPV." The question is, "What percent of PPV, positive predictive value, does the FDA consider low?" I would say please refer to the CDC guidance on serology testing for one. We know that even with tests with a very high specific specificity-- greater than 99%, say-- can have significant false positives.

There is no perfect strategy. And even when two positives with two very specific serology tests-- maybe even both, more than 99% specific-- even using two different antigens in their tests can result in an overall false positive. It's probably exceedingly rare, but it can happen. So in all circumstances, care must be taken in the interpreting the results of serological testing. So with that, I'm going to turn it back over to you, Nancy.

NANCY ANDERSON: Thank you, Tim. As I've looked at the questions, I think most of them are things that you touched on in your comments. So we won't ask you anything more today. And we will move on to our next presentation, which we're moving into the area of the laboratory workforce. Our next speaker is Jim Flanigan, who is with the American Society for Clinical Laboratory Science and will talk about workforce impacts. So Jim, please take it away.

JIM FLANIGAN: Thank you, Nancy. And good afternoon, everyone. I appreciate the opportunity to talk about the laboratory workforce with all of you. What I'll be focusing on is the short-term impact of COVID-19 versus the long-term demographic trends that the laboratory workforce has been dealing with for several decades. Next slide, please.

Last Tuesday marked the 20th anniversary of the first of two Laboratory Personnel Summits that were convened by ASCLS and included a broad representation of the laboratory community. But it was even back in the late 1980s when the Institutes of Medicine identified issues around allied health services and potential crises arising from that.

So for 20 years, ASCLS and other laboratory groups have been talking about an impending crisis on the laboratory workforce. And in each one of those cases, the anticipated demand based on growth in usage as well as growth in number and complexity of tests indicated to us that we were going to need a larger workforce. And over those 20 years, largely the workforce has been able to keep up because of innovations within the laboratory community around automation and artificial intelligence. Next slide, please.

So the question becomes, what kind of short-term impact does COVID-19 have on the workforce? And I emphasize short term. I went up to three ASCLS leaders-- Rick Panning at Health Partners, Kim Von Ahsen at Unity Point Health, and Michele Adams at Marcus Daly-- to get kind of a cross-section, a little mini case study about what the short-term impact has been from COVID-19.

Health Partners is based out of the Twin Cities and is obviously a very large health care system. They have 900 full-time equivalents in their laboratory workforce. They saw pretty significant drops. The drops in volumes are highly variable based on where the laboratory is in the country as well as the kind of laboratory testing that they're doing.

You can see pretty significant drops in volumes for health partners. Their solutions to these for the most part have been furloughs, but along with voluntary paid time off, leaves of absence, reduced hours, temp pool. But they emphasize all along they've maintained benefits. In Central Iowa, the Des Moines, a smaller system with a Unity Point Health, has one third of the full-time equivalents. Their drop was between 30% and 60%, again, depending on the kind of laboratory work that was being done. They also focused on furloughs and personal leaves.

And then, finally, we have Marcus Daly, which is the smallest of all a critical access hospital. Their volume of what they term billable events was down 19% from 12,000-- a little over 12,000 procedures per month to a little more than 10,000 April and May. They've got the smallest of those workforces.

In all three cases, there is a noticeable return to normal volumes. In some cases in some areas, those volumes have increased to above pre-COVID levels. But there has been some impact in what will be largely smaller impacts on the laboratory workforce moving forward in the case of health partners. There is a focus on potentially consolidating resources into fewer laboratory

locations. In the case of Unity Point, they have dramatically expanded their molecular testing capacities and have taken four laboratory professionals-- have trained 10 laboratory professionals with four new to molecular to do the COVID testing in their area.

In the case of Marcus Daly, they're currently-- they've currently lost one full time MLT and one PRN that they're not replacing. And on July 1st, they're going to be doing a review that may end up with wage cuts, furloughs, and continued hiring freezes and attritions. I have two observations from this. One is the laboratory workforce is remarkably flexible to have been able to ramp up and take generalists to quickly learn new techniques and to move them into other areas to get up to the level of molecular testing we're doing for COVID, but also that there is likely to be some lasting effects that may not be necessarily a reduced demand for the laboratory workforce, but may impact our ability to develop the laboratory workforce. Next slide, please.

We have a bit of a conundrum here. Demographics are relentless. So we have a growth in demand from an aging population and a continuing rise in the number and complexity of diagnostic tests meeting up with an aging and stressed-out workforce not able to train enough new professionals to replace those lost to retirement or burnout. And that's where I'll focus the rest of my time. Next slide, please.

The American Society for Clinical Pathology has been performing the most important studies over the course of time to tell us about the laboratory workforce. And I'm going to focus on just two of those studies in time-lapse. One is the vacancy study that they do. In blue, you see the 2016 numbers. And in orange, you see the 2018 numbers. And you can see in almost all categories the vacancy levels have increased in laboratories reporting into that study. Next slide, please.

That same study looks at retirements. And over time, what you can see is a very interesting trend. These are just five areas of the laboratory. And you can see from 2012 to '14 to '16 and then '18, you saw a dramatic rise in the number of people anticipating retiring over the course of the next five years before dropping off in 2018, most likely because there were significant retirements between 2016 and 2018. Perhaps most troubling is that blue line, which is the supervisors within those areas of the laboratory where you're seeing retirement rates anticipated above 30%. Next slide, please.

And I'll need one more click. I guess you have to click all the way through. I'm sorry. I didn't pull all that out. In February, ASCP released a new study that dealt with job satisfaction and burnout. It is an incredibly important study because it documents for the very first time the problem, in addition to retirements, of people leaving the profession mid-career because of burnout and the lack of job satisfaction.

The major findings are that significantly higher rates of younger professionals-- those are people under the age of 44-- are dissatisfied. Only 38%, almost 38%, are somewhat or very dissatisfied with their jobs. But the young professionals are even more dissatisfied. A majority

of all respondents reported feeling a lot of stress. One of the top three responsibilities, I would note, for causing stress is involvement in education, which means that preceptors are stressed out and potentially modeling negative emotions to their students.

And finally and the one that is the scariest to me is that most respondents reported feeling overwhelmed by varying degrees by their workload. And less than 15% reported not feeling overwhelmed, which means that a dramatic number-- 85% of the workforce is feeling overwhelmed in some way. And this was before COVID-19 happened. Next slide, please. You're going to have to click through this as well. Sorry about that.

Perfect. Thank you. So this is a graph of the number of MLS and MLT programs as well as the number of graduates of MLS programs and MLT programs. What this would tell you if there were a trend line over it is that, at the very best, it's a flat line. At the very worst, you're seeing a dropoff over the course of the last five years in the number of programs as well as the number of graduates from MLS programs. And this is where the effect of COVID-19 is most likely to see the most significant long-term impact on the laboratory workforce.

Last Friday, ASCLS was informed by letter that Eastern Carolina University was suspending its MLS program. Eastern Carolina was one of only four programs in North Carolina training laboratory professionals. And its professionals oftentimes took jobs and took positions within both North and South Carolina. Unfortunately, I don't think this is going to be the last letter that we receive indicating that a program is going to be suspended.

As health care systems struggle with the financial impacts of COVID-19 and place even more pressure on their laboratory workforces, it will become increasingly more difficult for educational institutions to find clinical partners where they can send their students for clinical preceptorships. With a lack of clinical sites, that caps the number of students that many of these programs are able to take, thus limiting our ability to generate more graduates that are needed to maintain our workforce. Next slide, please.

So this is two projections from the Bureau of Labor Statistics, one from 2016 and then the most recent from 2018. And this is the relative growth of the laboratory workforce compared to all occupations. And you can see that the growth of the workforce generally is shrinking from 16 to 18 according to BLS. But the percentage rate continues to be about twice the rate of growth of other occupations.

Based on the 2018 to '28 projection, the Bureau of Labor Statistics is estimating that we will need a net 3,500 new professionals per year to keep up with demand and to keep up with retirements and those leaving the profession. Next slide, please.

So here I show the math. In terms of outflows, 20% is, in our estimation, a reasonable expectation for retirements and resignations over the course of the next five years. Applying that to the size of the workforce via the Bureau of Labor Statistics or the Board of Certification, we get an outflow of between 13,400 and 14,300 per year. If we add in the demand for the

Bureau of Labor Statistics, the number of needed professionals each year is somewhere around 17,000 to 18,000 per year.

In terms of inflow, our new certificates are approaching 15,000. But 2,100 of those are medical laboratory technicians who are moving up the career ladder to medical laboratory scientists, which is great, which means our net inflow is really just short of 13,000 people per year, which leaves us with an annual shortfall of between 4,200 and 5,100 per year. Based on that math, what this tells us is we're not even graduating enough people to take care of the people leaving the profession, much less deal with the increase in demand based on an aging population. So none of this is new. And next slide, please.

What's interesting is we return to that 20-year anniversary of the formation of the Coordinating Council for the Clinical Laboratory Workforce-- that the issues that were identified 20 years ago were data collection, recruitment and marketing-- essentially get more people interested in the profession-- and financing education. The focus of the professions and the organizations supporting it have been on those first three-- data collection, recruitment, and marketing. In fact, there is a website called laboratorysciencecareers.com, which has just been redone in the last year, which is-- if you're interested in helping market the profession, this is a wonderful way, by linking to it from your own website.

But financing education is the piece that we've had the most difficulty with. Finding states or federal programs that will help underwrite the cost of educating laboratory professionals is likely to be the most impactful way to address the shortfall. We know that one of the reasons why universities like East Carolina are closing their programs is because it costs more to educate a new medical laboratory scientist than is generated through tuition. This is not uncommon in the health professions, but other health professions have federal programs to help underwrite those educational costs.

And so with that in mind, ASCLS in particular is focused on addressing the financing education piece of the puzzle and will be moving forward. ASCLS has a position paper-- the link is right there-- that documents this in great detail. It was approved by our House of Delegates a little less than two years ago. But the general findings of it are still valid. And my contact information is there should you have any questions.

NANCY ANDERSON: Thanks so much, Jim. I think to try and keep us as close to the schedule as possible, we're going to move ahead to our last presentation for today, which will be given by Senia Wilkins, who is from the Division of Laboratory Systems here at CDC.

SENIA WILKINS: Hi, everyone.

NANCY ANDERSON: It's your turn.

SENIA WILKINS: Thanks, Nancy. All right, so I know we have about three minutes, so let me see how quickly I can go here while still allowing you all to understand what I'm saying. So I want to

start-- I want to talk to you all about some laboratory training resources. Many of you might be aware of these. Many of these may be new to you all. But before I go into the specific resources-- let me see here. Let's see. Nancy, are you showing the slide? For some reason, my screen just went blank. Oh, there we go. OK, we're back. We're back on.

And so on this slide right here, we recently pulled registration data on 13 of our courses that are currently live on our Learning Management System called CDC TRAIN. And we focused on these 13 courses. There's actually 37 that are live right now, but we focused on these 13 because they're relevant to the current COVID-19 pandemic and that the knowledge that are presented within these courses is helpful when responding to a public health emergency. So they're not specific to COVID-19.

But as you can see, we've seen a peak in registration since activating for the COVID-19 response on January 20th. And that orange line right there is the same-- is also the registration data for these courses the previous year. So you see that, although we also saw a bump in registrations last spring, it's nowhere near as large as the one we're seeing currently. Next slide.

So for the-- to look at this a different way, we also compared the course registrations to COVID-19 relevant courses to our other courses. So the other-- what is 37 minus 13-- 24. So between January and May 2020, 72% of all course registrations are for those 13 COVID-19 relevant courses. So again, both of these-- this data analysis is telling us that learners are taking training courses and they're interested in courses that relate to the current COVID-19 pandemic.

This is very good for us to know, and it also validates that we need to continue to identify education and training needs and address those needs by developing resources in relevant and easy-to-access formats. So not necessarily an e-learning course every time, but, again, we need to keep doing the work where I think previously before doing this data analysis it was unclear if folks were still taking training or not. Next slide.

So to highlight a couple of courses, we have top-- there's three courses that are at the top right now in terms of the greatest number of registrations. These include Fundamentals of Personal Protective Equipment-- next slide-- Packing and Shipping of Division 6.2 Materials. And again, we'll be releasing-- just as an update, we'll be releasing an update to this e-learning course very soon. So keep an eye out for it. And also-- next slide-- Fundamentals of Working Safely in a Biological Safety Cabinet. And next slide.

So again, all courses are listed on our newly redesigned website, https://www.cdc.gov/labtraining. It just got redesigned. We're really proud of this website. You can search by topic, keyword. There's also active filters that will allow you to search by categories in the library. So it makes it easier to find what's all on there. Next slide.

From our website, you can also access our learning management system, which I mentioned is CDC TRAIN. Again, this is where all of our courses live. And so on our web page, there's a little button that says “Create a Lab Training Account.” So if you click on there, you're able to register

on CDC TRAIN. Once you register on there, I encourage you all to sign up for our laboratory training group. It'll prompt you to sign up for a group when you're setting up your profile. And what joining this group allows you-- it will give you email updates in real time of new courses as they become available. And then, again, registering on CDC TRAIN and accessing all CDC courses are completely free. Anyone can create an account from anywhere.

Another update-- next slide-- that I want to share with you all that we're very, very excited about is we're very close to releasing the first ever CDC laboratory training course in virtual reality, or VR. It's been a long time in the making, but we're excited about this course, which focuses on biosafety cabinet setup. The course will be available on CDC TRAIN, and we're also going to release it on Steam, which is one of the most popular gaming platforms out there. And with the appropriate VR equipment, learners will be able to experience a safe and controlled simulated learning environment from the comfort and convenience of their own home.

So this is an exciting new activity for us. If you'd like more information on this course that's about to be released or on our VR activities in general, please email VR@cdc.gov. By the end of the year, we're also hoping to release two more courses in VR. One will expand on this current course that we're about to release, and it will move beyond setup of the BSC and go into spill cleanup and emergency shutdown procedures. The second course will focus on donning and doffing PPE. Next slide.

And again, I know you all see this email address at the beginning of each of these calls, but I just want to re-emphasize-- as I mentioned earlier, it's incredibly important for us to keep a pulse on the needs and gaps in education and training that you're experiencing or that your workforce is experiencing. And we are working-- currently we're working on developing a training needs assessment with our partners.

But we also encourage you all to reach out to us with any feedback that you may have. Again, LabTrainingNeeds@cdc.gov -- we monitor that box 24/7. So please, please share your feedback with us. And feel free to share any of these resources, any of these email accounts with everyone. All right, thank you very much for your time. Nancy, I'm a little bit over.

NANCY ANDERSON: No, that's great. In fact, I'm going to ask you a really quick question that came in. Someone wanted to know if there are CE credits available for the courses.

SENIA WILKINS: Yes, many of them do-- thank you so much. I missed that. Many of them have P.A.C.E. ® credits available with a lot of those courses. So if you take a look at that, you can actually search by P.A.C.E. ® and it will let you know which courses are available for that-- also, free of charge. Great question.

NANCY ANDERSON: OK, thanks so much, Senia. And thank you, again, to all of our speakers for today. We're going to wrap up with just a few closing comments and reminders. First of all, we do encourage you to opt into the Laboratory Outreach Communication System, or LOCS, to

receive ongoing laboratory communications related to the COVID-19 response. So if you have not signed up for LOCS, the email is LOCS@cdc.gov.

And with that, we are going to conclude our call today. I want to just remind you one more time that after today these calls will take place every other Monday at 3:00 PM Eastern Daylight Time with the time frame for the calls extended from 45 minutes to an hour. You can find the slides, transcript, and audio from this call posted to the website soon. And to access that, you can visit cdc.gov/safelabs. Then click Resources and Tools, and click the link for the Clinical Laboratory COVID-19 Response Calls.

We hope you will join us again for that next call on Monday, July 6th, and encourage your clinical laboratory partners and colleagues to join for that as well. And last, if you do have questions that you still want to submit for consideration, please use the Q&A function in Zoom or send an email at any time to DLSInquiries@cdc.gov.

If you do submit a question, please make sure to include your email address so that we can get back to you. Some CDC social media addresses are listed here. And with that, I will just thank you for joining us today. Thank you for your ongoing dedication to protecting our nation's health as we work together to respond to the COVID-19 pandemic. And that is it for our call for today.