FEDERAL COMMUNICATIONS COMMISSION
CONNECT2HEALTHFCC TASK FORCE

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BROADBAND PRESCRIPTIONS FOR MENTAL HEALTH:
A POLICY CONFERENCE

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WEDNESDAY
MAY 18, 2016

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The conference session convened at the University of Houston Law Center, Bates Law Building Room 109, 4604 Calhoun Road, Houston, Texas 77204-6060 at 8:30 a.m.

PRESENT:

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NORA BELCHER, Executive Director, Texas e-Health Alliance

HENRY CHUNG, MD, Strategic Medical Advisor, Big White Wall, Associate Professor of Clinical Psychiatry, Albert Einstein College of Medicine, Vice President of Care Management Organization (CMO), Montefiore Medical Center

THE HONORABLE MIGNON CLYBURN, Commissioner, Federal Communications Commission

THE HONORABLE GARNET F. COLEMAN, Texas House of Representatives District 147 (D-Houston)

TIMOTHY R. ELLIOTT, PhD, Professor, Department of Educational Psychology, Texas A&M University College of Education, Executive Director, Texas A&M University Telehealth Counseling Clinic

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LEX FRIEDEN, MA, LLD (hon), Professor of Biomedical Informatics and Physical Medicine and Rehabilitation, University of Texas Health Science Center at Houston School of Biomedical Informatics, Senior Scientist and Director, Independent Living Research Utilization Program, TIRR Memorial Hermann

LAURA M. GALBREATH, MPP, Director, SAMHSA-HRSA Center for Integrated Health Solutions, National Council for Behavioral Health

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ROBERT C. ROBBINS, MD, President and Chief Executive Officer, Texas Medical Center
MARI ROBINSON, JD, Executive Director, Texas Medical Board
SUSAN RUSHING, MA, Chief Executive Officer, Burke
YAHYA SHAIKH, MD, MPH, Senior Advisor for Connected Health, Connect2HealthFCC Task Force, Federal Communications Commission
MICKEY SLIMP, EdD, Executive Director, East Texas Interactive Healthcare Network, University of Texas Health Science Center at Tyler, Executive Director, Northeast Texas Consortium of Colleges & Universities (NETnet)

SHARON L. STROVER, PhD, Philip G. Warner Regents Professor in Communication and Director, Technology and Information Policy Institute, University of Texas at Austin Moody College of Communication

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ALLISON N. WINNIKE, JD, Director of Research and Research Professor, University of Houston Law Center Health Law & Policy Institute

THE HONORABLE JOHN ZERWAS, MD, Texas House of Representatives District 89 (R-Katy)

C-O-N-T-E-N-T-S

C-O-N-T-E-N-T-S (cont.)

P R O C E E D I N G S

(8:30 a.m.)

DEAN BAYNES: Good morning. How's everybody doing this morning? This is a great day -- great day for the University of Houston Law Center. Great day for the FCC. And a great day to discuss broadband technologies and its impact on mental health and health policy generally.

I'm Leonard Baynes. I'm the Dean of the University of Houston Law Center and I want to welcome you here today. It's my pleasure to welcome our guests in the audience and those who are joining us on the live webcast to the Broadband Prescriptions for Mental Health: A Policy Conference. So this will be both live and also on the web. Which is very fitting given the nature of this conference.

This conference is hosted by the Federal Communications Commission, it's Connect2Health Task Force under the leadership of the Task Force Chair Michelle Ellison who is not

with us, but she is watching. She told me by email last night that she's watching by live stream.

So this has been a unique partnership with the University of Houston Law Center and the FCC. It's been spearheaded by the Director of Research of the Houston Health Law Policy Institute Allison Winnike. Where's Allison? There goes Allison. Allison is wearing red as I am.

I know it's mental health month and we should be wearing green like the Commissioner, but I couldn't find my green tie which I usually wear for St. Patrick's Day. I couldn't find it today, but Allison is wearing -- as I always do, the school colors -- which are red.

And so if you have any questions, that's Allison and she'll be holding up cues for time and whatnot during the day. And she is an expert on the facilities and everything you need to know here.

I also want to recognize several of

our other distinguished members of the Health Law & Policy Institute. Our co-director Jessica Mantel. Is Jessica Roberts here?

PARTICIPANT: She's on her way.

DEAN BAYNES: Oh, okay, she's on her way. Among others, and of course, April Moreno and so many others. And our research -- two research professors, Steve Chin and Daphne Robinson who all worked with the FCC team to put this very important conference together.

We are so -- we also are in collaboration with the University of Texas Rio Grande Valley School of Medicine. It's a new medical school under its founding dean Francisco Fernandez.

We've been honored to work with the honorable FCC Commissioner Mignon Clyburn and the Connect2Health Task Force to bring this Beyond the Beltway Series to Texas and to the series' only stop at a law school that's going to address the legal, regulatory, and policy issues that impact mental health care access and improved

health outcomes.

And as many of you may know, I'm a recent transplant to Texas and the City of Houston from New York City. I love being in Houston. It's a great city and I love being in the State of Texas. Recently, we had a gala which was Texas Under the Stars and I wore a bolo. And I realized even wearing a bolo, was really acceptance of being a Texan. So it was even like that that was great.

So people have been very, very accepting of this native New Yorker to the great state of Texas; and Texas is a great state. It has a population of 27 million people. It's the second largest state in the country in land mass and population. It is racially, ethnically diverse. It's 43.5 percent white or Caucasian or Anglo, 37.6 percent Hispanic, 12.5 percent are African American, and 4.5 percent are Asian or Asian American.

We're home of some of the most diverse cities and population. The cities and the state

continues to grow. The U.S. Census Bureau recently announced that our four major metropolitan areas of Houston, Dallas, San Antonio, and Austin grew in size. And last year, their collective increase in population was more than any other state in the country.

The City of Houston has been recognized nationally as one of the top ten most diverse cities across four key areas: diversity, ethno-diversity, economic diversity, and household diversity. And the Houston metro area is now considered the most ethnically diverse, large metropolitan area in the country according to the Kinder Institute at Rice University, surpassing my native home city of New York City.

But while we have these bustling metropolises, Texas also has the most rural and sometimes isolated areas in the country. For example, Brewster County in West Texas is over 6,000 square miles in size. It's larger than the State of Connecticut with its -- Connecticut's 3.5 million people. Yet, Brewster County has

only 10,000 residents.

Another example of this divide between urban and rural portions of the state is the East Texas Region, which borders the States of Louisiana and Arkansas and includes 14 counties with a total population of 100 -- of 839,625 people. Sixteen percent of that population in that 14 county area live in poverty.

The State of Texas is home to 7.6 percent of all U.S. veterans making it the state with the second largest population in the country for veterans. The veteran population in Texas is also racially and ethnically diverse with 68.7 percent being white, Anglo or Caucasian, non-Hispanic. 16.1 percent being Hispanic, 12.6 percent being African American, .9 percent, Asian American, and 1.8 percent other.

In Texas 89.5 percent of the veterans are male and 10.5 percent are female. According to the Mental Health America of Greater Houston, over 200,000 veterans of military service live and work in Houston and Harris County; the area

making the city home to one of the largest populations of military service members and their families in the nation.

Research continues to show that veterans deployed in Afghanistan and Iraq may experience a variety of issues upon their successful return to their communities; 22 veterans per day, or nearly one per hour, loses their life to suicide because of untreated mental illness.

However, innovators in mental health treatment communities are utilizing the telehealth counseling and telepsychiatry to reach veterans suffering from mental illness in some of the most remote areas of the state. As the technology grows and policies that regulate the field advance, it is our hope that mental health treatment will be extended to meet the veterans and other Texas residents wherever they may be.

In addition, Texas has physician shortages and access to broadband internet are

issues of concerns here as they are in other parts of the country. Texas has over 1,000 federally designated health professional shortage areas, including 362 mental health shortage areas that's been determined by the U.S. Health Resources and Services Administration, HRSA.

These mental health shortage areas are defined as counties or geographic areas having a shortage of mental health providers and cover the entire state of Texas from right here in Houston, down to the Rio Grande Valley, out to the west, and up to the panhandle.

Texas is second only to California in the number of health shortage areas for a state. In response to our mental health care access needs, Texas Trail Blazers, including individuals attending today's conference and those participating on the program, have pioneered several broadband infrastructure projects developed -- developed that -- developed innovative health care technologies and advocated for legislative and regulatory policies to

improve mental health care and outcomes.

The University of Houston Law Center, which I'm very proud to be its dean for almost two years, is uniquely situated to deal with these issues and have this conference. As dean, one of the goals I have is to bring national and regional figures to the campus to bring and start conversations on many important issues.

Our Health Law Policy Institute recently has been recognized as the number two health law program in the nation. It is one of the oldest and most respected -- respected health law programs in the country.

The University of Houston is a member of the institution of the Texas Medical Center which gives the Health Law & Policy Institute a formal link to the world's largest complex for healthcare and biomedical innovation. The institute also maintains a strong relationship with the Texas legislature and its members, including two distinguished members will be in attendance today, the Honorable Garnet Coleman

and the Honorable John Zerwas, both members of the House Public Health Committee.

And the Health Law & Policy Institute is often called upon to advise legislators and other policy makers on issues related to the regulation of health and public -- public health and health care. We have an excellent program today which brings together mental health care and broadband technology policy makers, industry leaders, health technology innovators, consumer advocates, clinicians, rural health organizations, and others interested in leveraging technology to address and improve mental health.

This is an interactive policy conference where we aim to share ideas and develop proposals to improve the legal and regulatory landscape for mental health broadband technologies. Please join in the conversation with your colleagues and submit questions to speakers by tweeting with the hashtag -- #C2HFCC. That's #C2HFCC.

We have numerous speakers -- distinguished speakers throughout the day, including our notable keynote speaker, Dr. Bernard Harris this morning on the future of broadband technologies. And this afternoon, we will hear from Dr. Lex Frieden on utilizing broadband health technologies to improve mental health care access for people with disabilities.

We have a feature on The Texas Story: An Overview of Broadband and Health in the Southwest with a special guest dean Francisco Fernandez of the University of Texas Rio Grande Valley School of Medicine, to discuss his new medical school and its efforts to address underserved populations in the Rio Grande Valley.

We have wonderful panels today. This morning we'll examine care challenges in mental health and behavioral health. And hear about some innovative programs around Texas to address these issues. This afternoon we will have a distinguished panel of policy makers, including Representative Garnet Coleman and Dr. John

Zerwas to discuss health legal and regulatory and policy issues in broadband enabled health care. Throughout the day we will hear from innovators using broadband technologies to address mental health care issues.

At this time, it's my pleasure to welcome Dr. Bobby Robbins, President and CEO of the Texas Medical Center and ask him to say a few words of welcome to all of you. Dr. Robbins.

DR. ROBBINS: Well, thank you Dean Baynes and Commissioner Clyburn. It's a pleasure to meet you. You are all in for an enormous treat as my good friend Dr. Harris will -- will be a treat to listen to today.

I -- I wanted to welcome you -- especially Commissioner Clyburn. Thank you for making time to be here in Houston at this great facility. We all have to apologize because anytime we're on the campus we need to be wearing red. Chancellor Khator -- too bad that she's not here right now but she -- it shows how leadership in one person can really make a difference in an

institution. And I know that she's very proud of the -- the program that's going on here today. And thank you for being here and thank you all for being here and giving me a few minutes.

I also wanted to say hello, you know, by -- by Internet to -- to Dean Fernandez down in the Rio Grande Valley and thank you for hooking us up here so that -- that the remarks could be heard down there. Again, it's certainly appropriate for this conference.

I'm going to say a few words, but I actually have several slides. So I'm going to -- I'm going to do my best to -- to tell you my usual hour presentation in five minutes.

So the Texas Medical Center, this is an enormous issue that you're addressing today, certainly, in our nation and, particularly, in our city. As Dean Baynes had mentioned, we are the most diverse city in America. We have the largest medical complex in the world, yet in the shadows of this incredible high tech facility with huge names of institutions that are really

leaders in the world, we have a population in this city that really doesn't have adequate access to medical care and mental health is a major problem. When I've heard over and over again that our largest health care facility is the -- is the county jail, we've got a problem.

So I -- I look forward to the contents of the con -- of the conference today. I'll have to shamelessly promote a conference that is starting right after this, so we can all just move -- you can all go hop on the train and go down to the George R. Brown, because we're opening the third annual Medical World of Americas that bring together multitudes of people from all over the world to talk about important issues, and especially the theme of this conference starting today and running through Friday is innovation.

And Dean Kamen, who is the inventor of the Segway and the wheelchair that can go up steps, he's a tremendous individual and he's our keynote speaker.

So just some facts. For those of you in Houston, you know all these things. It is the largest medical complex in the world. If you look at the $20 billion aggregated, consolidated budget of all the 57 institutions that make up the Texas Medical Center and the 50 million square feet of space that is developed, that is increasing to 55 million square feet of space over the next three years, that would make it the eighth largest financial district in the country.

When you think of it in that terms, our little town of over 100,000 employees and 60,000 students, residents, and trainees, it's really, as Barbara Bush said, you know, Houston's gift to the world.

We've got eight million patient encounters, over 9,000 beds. So if you took Central Park and you put all of the health care facilities in Manhattan in Central Park and named it the New York Medical Center, then you would have about the equivalent of -- of what we have here in Texas. These are some of the -- in

Houston.

These are some of the institutions: of course MD Anderson, UTMB has been a big player in telehealth, obviously, serving the -- the Texas penal system, and all of these great institutions that come together and make up the Texas Medical Center is a great consortium of health care institutions.

One of the issues though was that the institutions have not necessarily played together well and collaborated. So one of my jobs was to try to get them to collaborate well. And now, I'm down to 60 seconds.

So one of the things we did, was do a strategic planning process. We came up with five areas where we thought that collaboration and working together would be important. Of course, you see health policy is one of those areas, and the policy experts from the University of Houston Law Center participated in that nearly one year planning process. So I'm appreciative to all of the faculty that participated to help us to -- to

come together around health policy issues.

These are just some of the systems that are leaders in mental health in the Texas Medical Center. I'm going to, very quickly, come through what we've done to try to bring together people around innovation and -- and collaboration in the innovative space.

And it's apropos because, just down the road at the old Nabisco cookie factory at the corner of Alameda and Holcombe, we've got 120,000 square feet of accelerator incubator space that makes us the largest life size incubator accelerator in the country.

There are companies that have been through. We have had 21 companies in our first cohort. Particularly interesting are the -- and I wish that more of our companies were here for this conference, but there are -- this cohort of companies that are in the accelerator now are all focused on digital health and digital health solutions to improve human health.

These are some of the companies: We

have a biodesign program that has two tracts. One for medical devices and one for digital health. And interestingly, the digital health company is working on nursing coordination in our emergency rooms, a lot of which see mental health patients.

We were lucky that Johnson & Johnson chose Houston as a place to put their flag and we have a beautiful 30,000 square foot incubator that we own and Johnson & Johnson, through their JLABS mechanism, operates for us. And that opened in March.

Finally, I would just say that we were lucky to secure AT&T putting a flag down in the cookie factory and opening one of their digital innovation centers that many people in the community and across the state will be able to take advantage of.

This is -- this was announced at the Consumer Electronics Show in Las Vegas in January. It'll be the first innovation center that AT&T is -- is focusing just on digital

health. So we're -- we're really appreciative of that.

There are many things that the Health Policy Institute is doing. These are just some of the slides -- some of the bullet points -- I don't have time since I'm already overtime, but one of course is improving access to healthcare for all of Texans. Particularly, that 30 percent of people in the third largest city in America that don't have access to health care. It's an embarrassment. So we're working with the Health Policy Institute which is a multi-institutional collaborative effort to address many of these important issues.

The last thing I would say apropos to this conference is, we just -- Tim Cook, the CEO of Apple just announced a major deal in collaboration with the Texas Medical Center where we'll be developing mobile care plans using the iPhone. And Apple is a consumer facing interface for patients to take care of them outside of the hospital. And one of the areas we are focusing

on is mental health, particularly in the adolescent and teenage and early adult patients who are often not compliant and may be able to use their iPhones or iPads to receive mental health.

The final thing I'll say is that we're developing this translational research campus that will bring together our major collaborators and partners, and this is just south of the bayou right next to the new Methodist McNair campus. It will be about a two million square foot facility that will have a core facility in the middle there. You see this double helix, it will, actually, be a park on top with core facilities in the middle to house our five institute -- institutes and provide core services like genomic sequencing, high-throughput drug screening, imaging, and cell flow facilities that could be shared by all the institutions that participate.

I apologize for running over, but I thought it would be important just to show some

slides. Thank you for having me here. Welcome to all of you. Have a wonderful conference. Get on the train and come over to the Medical World of Americas, and Commissioner Clyburn thank you for making the time to be here. Thank you.

DEAN BAYNES: Oh, Dr. Robbins, are these your glasses? Dr. Robbins?

DR. ROBBINS: I won't get very far without those. These are my glasses. Thank you so much.

DEAN BAYNES: Thank you, Dr. Robbins. We are fortunate to have a wealth of health care experts and resources in Houston and in Texas Medical Center. The Law Centers Health & Policy Institute is a frequent collaborator with our Texas Medical Center partners to inform, define, lead health policy in Texas and at the national level.

Now, it's my privilege to welcome FCC Commissioner Mignon Clyburn to provide opening remarks for the conference. Commissioner Clyburn -- I'm going a little bit off script. We met --

well, we met a few times, but I worked for the FCC in the late '90's; I was a scholar in residence there. And I was in Washington, I guess, about a year ago and I stopped by her office and saw my former colleague Karen Onyeije and we talked about this Connect2Health. And I said, "Oh, I would love to do it here."

And so, I always like -- you know, I think leadership is often having a dream and being able to implement it, and I'm really thankful for the Health Law & Policy Institute team for making sure that my dream is actually a reality. So let me go back to script.

So she -- she -- she's in her second term as Commissioner. She was nominated by President Obama in 2009 and confirmed by the Senate. She served as acting Chair of the FCC and she was the first woman to serve in that role as Chair acting or otherwise in the FCC. So it was quite an accomplishment even though it was just a few years ago.

She, previously, spent 11 years at

the South Carolina Public Utility Commission. She's a noted champion for consumers and a defender of the public interest. She's a strong advocate for enhanced accessibility in communications for individuals with disabilities, and works closely with representative groups for the deaf and the hard of hearing.

She's fought to support strong competition across all communication platforms believing that the most robust and competitive marketplace is the best. It doesn't need necessarily as much regulation, but when the market fails and doesn't work effectively in addressing consumer needs, Commissioner Clyburn is a champion for the consumers and to ensure that the public interest is realized with targeted regulatory action.

She's pushed for media ownership rules that reflect the demographics of the United States of America for affordable universal telephone service and high speed Internet access, greater broadband deployment, and adoption

throughout the nation of -- with transparency and regulation.

So we're very honored to have Commissioner Clyburn with us today and the whole Connect2Health Task Force and to make -- that made all of this possible. So let us give a warm round of applause, Commissioner Mignon Clyburn.

COMMISSIONER CLYBURN: Good morning once again everyone. I thank -- oh no, no, no, no, no. Now, I know there's a debate whether we're in the south or southwest, but I'm from the south. So let's try this once more -- again, as we say. Good morning everyone.

(Chorus of good morning.)

COMMISSIONER CLYBURN: It is such a pleasure to be here despite your delay in giving me a good morning greeting. That's all right. We're here for a great cause. I really appreciate, Dean, that kind introduction and such a warm welcome here to Houston.

We are all grateful to the University of Houston Law Center, Dean Leonard Baynes,

Professor Allison Winnike, and all you for partnering with the FCC's Connect2Health Task Force and so -- for so, graciously, hosting this conference.

Some of you have been made aware that Dean Baynes is an alumnus of the FCC and we're very proud of that. He lent the agency his expertise on market entry barriers and competition policy, and he has been a part -- is a part of shaping the very conversations and focus when it comes to our national media diversity framework.

So if you know the Dean, you know he's oft -- you know he knows -- you know that he's often the smartest person in the room though he doesn't brag about it, but that's one of the reasons why we are so delighted to come to this critically acclaimed Health Law & Policy Institute to kick off this dialogue today.

I also want to thank, in his absence now, Dr. Robbins, who as you know runs the largest health care system in the world. They're

on the cutting edge on so many fronts and then there are several innovations that we'll demonstrate outside today that are a direct result of TMC's unwavering commitment to the future of connected care.

Now, we're all here today because we share a common truth, that broadband connectivity can transform. It can empower. It can enable. And this month, as we know, is Mental Health Awareness Month where we highlight our national commitment to meeting the needs of the 10s of millions of Americans with mental illness.

At the FCC, we firmly believe that broadband connectivity, in this case particularly through telepsychiatry, telemental health, and other connected health platforms can be transformative when it comes to mental health care.

But every time I hear the stats that I am about to quote, I pause. According to the Centers for Disease Control, mental health illness last year impacted one in every five

Americans. That's over 42,000,000 people that had a mental health illness or crisis last year.

That's more than the population of this state, Alabama, Arkansas, and Louisiana combined. Twenty percent of our most precious resources, our children, have a mental health disorder so serious that it affects their daily functionality. And that's more than the number of children who have asthma and diabetes combined.

Over 40,000 people commit suicide every year. That's the number -- the same number of deaths as breast cancer, the most common cancer as we know in women. It's more than the number of deaths from prostate cancer, which is the most common form of cancer in men. And it's three times the number of homicides that occur each year.

The bottom line is mental illness costs. It costs greatly. It costs our families. It costs our communities. Many caretakers are struggling with fragmented care. They're

constantly worrying about their loved ones.

We are -- to be honest -- and I'm going off script now. We are too often in a state of denial about mental health. We dismiss it. We see our families or our neighbors in crisis, and we act like we don't see it oftentimes. We explain it away. You know, they're a little different, but I think we can work with them. Too often we can't and the consequences, they're costly.

By one estimate, we spend about 150 billion dollars for mental care each year, but including lost earnings and payments, it is actually costing our nation almost a trillion dollars per year because that money that we're spending is quite frankly not adequate. Millions are not receiving care. By one estimate, 60 percent of adults with a mental illness do not get the type of care that they need.

So if you were not persuaded before these stats and before the day, you should be. And you should also understand why we are having

this conference at this point in time to focus on how we can do things better. How can broadband and connectivity be more of an enabler for us to tackle a mental health -- mental illness? And how the FCC can play a role in supporting all of these efforts.

Now, I know you all are anxious to hear about what Dr. Bernard Harris is about to share -- his galactic perspectives, but before we launch into that today, I want to offer three guideposts for our conversations.

First, when it comes to mental health, connectivity can be more than a simple medium to deliver care. Let's don't think of it just as a simple medium. Let's think bigger and bigger still. So as we hear more today, we'll talk about telepsychiatry, which has been shown to improve access to services, increase patient satisfaction, and produce real savings when it comes to time, cost, and travel.

And in the case of telepsychiatry we're taking physical interaction and we're

virtualizing it. We are facilitating the same type of interaction we have in a physical world, and we're delivering that over broadband pipes.

Put another way, connectivity is being used as a pillbox to deliver much needed medicine, but that is only one way that we can leverage broadband connectivity in mental health. Connectivity can be more than just a passive vehicle. It can offer support and care just when a person needs it, personalizing their clinical experiences and approaches. It can be a force multiplier addressing serious mental health professional shortages that exist. They so, so exist. Particularly, in these rural and underserved areas.

Take for example, a person with depression in the Grande area -- in the Valley -- in the Rio Grande area who feels socially isolated and alone. They can use a connective platform to anonymously share their feelings and thoughts in a way that transcend time and place.

They can leave a comment about their

illness or what is on their mind on a virtual wall, and another user may come in, read it later and reply to that comment with experiences of their own. And imagine over the next series of days and weeks that these persons will connect.

They will understand that there are kindred spirits out there all over this country who are suffering, but they give each other affirmation and support and a reaffirmation that they are not alone because many studies -- this is important because many studies show that social isolation is as strong a risk factor for dying as is smoking. The lonely, the elderly, they die earlier and lose their mobility faster than those who are not lonely.

So that social -- that -- that isolation is very critical, but Internet usage, online video conference, and virtual social networks, they have been shown to greatly reduce those feelings of isolation. And -- and in this instance, it could be the very prescription that is needed.

And let's not forget those apps that are constantly being developed for people struggling with substance abuse, which is often a byproduct of mental illness. These apps use geo-location and an archive of a person so that they can be reminded, in their own voice, to guide themselves away from those temptations like bars or other triggers in their environment that would lure them back into destructive behavior.

There are so many connective technologies that are driven by algorithms to personalize even schizophrenic care, and offer support so that a person can have a sense of control and achievement in improving their adherence to medication, mood regulation, and social functioning.

All of this -- this empowerment and support would not be possible however, without connectivity, which is why we are here. This is an intrinsic ingredient.

So now I recognized that mental and behavioral health can be intensely personal when

it comes to causation, progress, and prognosis. Mental illness occurs in a context of lives lived in families and communities. It occurs along stresses of work and relationships, but here's the kicker for me. Connective technologies can place treatment and management in the hands of the person experiencing the illness.

Connective technologies can empower, and this sense of empowerment and engagement and personhood, that the connectivity enables, can often be just what that person needs and just what the doctor ordered -- orders.

Now here's a second principle I wish to share. The kind of transformative shift in mental care that we are discussing will require regulatory creativity and flexibility. Yes, I said it out loud. Regulatory creativity and flexibility so that at the end of the day we all win.

But it would also require clinicians, policy makers, and innovators, and all of you to exercise foresight and courage, to solve both

longstanding and spot emerging issues. This is our brave new world, but it isn't without pitfalls.

I for one am willing to listen. I am here to share what the FCC can and should do differently at the federal level.

And the final principle is this: we can leave no man or no woman behind. We must not accept the status quo; that connectivity gaps and health disparities go hand in hand. Let's not accept that as a foundation. For too long we've done that. We've looked at these chronic problems, particularly, when it comes to mental health, and we throw up our hands too often and say that we cannot solve it. We absolutely can.

Now, I know I'm in the big state of Texas where you all do things big and grand. So let's take that personality and that enthusiasm and tackle this head on. There are counties that you know, where 100 percent of the residents can get broadband and 100 percent can subscribe to the Internet, but there are counties in your fine

state where less than 20 percent can access broadband and one in two don't subscribe to even basic Internet services.

You've got some work to do. And these places that I mentioned with the latter stats, are usually the places with the worse health outcomes, with the biggest challenges, but we can change that. These disparities are playing all throughout the country, so you're not alone. Collectively, we can change that and this is why this forum is so relevant and so timely.

I shared a story last night, as I take my seat, about a neighbor that we had that we could tell that he might have been a little, you know, a little different. Functional, fully functional, married with children. We know he was struggling, you know, with a couple of things -- you know a couple of issues.

He even worked at a drug treatment center where he was helping everybody else with their adherence, but I cannot tell you what all happened. But after we read about his hanging,

self-inflicted, we all paused because too often the support system that other people give and deliver, are the very systems that they need for themselves. And we need to do a better job of recognizing that.

And that is why we're here, because it's going to take a community of a whole to tackle this problem that is costing our nation billions. It's costing this world over a trillion dollars a year, because honestly -- too honestly, we're too silent about mental health issues.

Today we break that silence. We collectively come together and say, what can we do as regulators, as attorneys, as clinicians to deliver better care for those who need it the most.

And I for one am incredibly grateful for being a part of that effort which launches here today from an attorney-centric perspective. Because this is the one time that I will admit and yield that we need you attorneys to make it

all possible. Thank you very much for this day.

MS. MANTEL: Good morning. I want -- thank you. I just want to echo Dean Baynes' remarks and welcome you all this morning to the University of Houston Law Center. We are so excited to be able to host this really important conference and to further the conversation on how we can better use technology to connect consumers to mental health services.

It's my distinct honor this morning to introduce our keynote speaker, Dr. Bernard Harris. Dr. Harris has an incredibly impressive resume; I could probably spend the entire 15 minutes allotted to his talk talking about him. My guess is you're more interested in hearing him talk than mine -- listening to me talk, so let me be brief.

Dr. Harris, currently, is the CEO and a managing partner of Vesalius Ventures; a venture capital firm investing in health technology companies. He previously was with Vanguard Ventures, where for six years he led

that company's telemedicine initiatives.

And before that, he was the Vice President and Chief Scientist with SPACEHAB, and the Vice President of Business Development with Space Media, an informatics company. He's also the President of the Harris Foundation, a non-profit organization that supports initiatives in education, health, and wealth.

Prior to becoming a member of the private sector, he was an astronaut with NASA. He flew several missions in space aboard the -- in the 1990s aboard the shuttles Columbia and Discovery. And I understand he has the distinction of being the first African American to walk in space.

I think the most important thing on his resume though is that he is an alum of the University of Houston. He holds -- he holds both a bachelor's in Science and an MBA from the University of Houston. And along the way, he picked up degrees from a couple of other institutions.

He has a medical degree from Texas Tech as well as a master's in Medical Science from UT Medical Branch in Galveston. So please join me in welcoming Dr. Bernard Harris.

DR. HARRIS: What's this -- a fourth time good morning?

MS. MANTEL: I guess so.

DR. HARRIS: So I have also did a faux pas. I wore a blue tie instead of a red tie. You know Renu is going to be really upset at me. Anyway, Jessica thank you for the introduction. I really appreciate it.

Commissioner Clyburn, it's great to have you here. I know this is not the first time you've been to Houston, but maybe to the University of Houston, maybe? Is this your first time you've been to Houston?

COMMISSIONER CLYBURN: The university.

DR. HARRIS: The university, okay. All right. Well, welcome to the university. And Leonard, thank you so much for letting me come and say a few words. I had my office check

several times with Allison when they said that I was doing the keynote and I noticed it said it was from 9:00 to 9:15. I said: "15 minutes for a keynote?" Yeah, hardly can I talk for 15 minutes but I'm going to try it this morning with you.

You know, I think it's really good when Leonard mentioned to me, several months ago, that the FCC was focusing on broadband initiatives, and particularly mental health initiatives, and that he was trying to bring this conference here. I said, "Great." He knew that I was involved in telemedicine for many years. And I said, "How can I help?" Of course, I'm here because of that.

So again, I offer that help as -- as the Commissioner laid out before us. You know, her -- her goals for this organization and the impact that we'll have on the health and welfare of people all over this nation. I want to be part of that solution, too, okay.

Broadband enabled health care or health technologies for mental illness is what

we're talking about today. You know if you go to the website that focuses on this, it talks about the one in five people who suffer from mental illness.

It talks about the 40 percent of those folks that access health care -- only 40 percent. That means 60 percent of the people don't access that health care, and over 80 million people suffer or are in areas of shortage where they don't even have the opportunity to have access to health care. And we could go on and on.

And I think the Commissioner did a great job of underscoring why we are here today. I wrote down something that I think was really important that I want to underscore that she said; and that was that mental illness costs us whether we think about it or not. It costs us in many different ways, from a monetary standpoint and also from an impact to the community. So it's really important.

So all of these issues can be

addressed by what we're talking about this morning, and that is broadband technologies in the healthcare space or what I call telemedicine.

Now, I -- I have been involved in telemedicine for quite some time and, believe it or not, it started when I was a young man -- actually, a young boy back in the 60s living on a Navaho Indian reservation.

Now, that's when everybody should pause and say, "How in the world does an African American end up on a Navajo Indian reservation"? It's because my mother was an educator and she worked for the Bureau of Indian Affairs and was the first civil servant before I became a civil servant. And actually, took her kids out there.

So I grew up from age seven to around 15 on the Navajo Nation where I saw the impact of the scarcity of health care out there and the effect that it had on a population of people that have been so impacted by this nation in many different ways.

And so I -- I grew up with this notion

that we need to provide care in these underserved areas -- in these rural areas around the nation.

Poor care was highlighting those things. Watching the suffering that was happening out there led to my career -- or my decision to go into a career of medicine. I was also impacted by being out on that reservation in my career in space, in that, when the sun would go down at night, and I would watch the lights appear -- I don't know if you guys ever played this game as we did a kid -- as a kid.

As the sun goes down, you see the first stars and, you know, on the first star you make a wish, well, my wish was that one day I'm going to travel in space. I'm going to follow in the footsteps of Neil Armstrong and Buzz Aldrin. And so I set on a course to do that, with those two things in mind.

Now, I know that sounds like a crazy kid, you know, think about that. How many kids at the age of 13, watching men land on the moon would decide that they want to follow in their

footsteps and actually do it? Not very many. So dreams can come true.

That dream eventually led me through the education that you heard Jessica talk about and eventually, I ended up working in NASA, initially at Ames Research Center out in California where we simulated bed rest. We used bed rest to simulate weightlessness.

So on earth, we don't have any way in which to turn off gravity, so what we do is we put them in bed for months at a time and measure different parameters. Some people would call that a torture chamber. At least I would. I couldn't be able to do that, but it gave us a foundation for what eventually them -- me and them and us -- the foundation for, eventually, what I would end up doing.

I subsequently, moved near to the Johnson Space Center where I continued my research, and one of the things we found out is that people would lose bone and muscle and heart shrinks in size because of the issues in

microgravity.

And so, at NASA Johnson Space Center, I was in charge of developing in-flight medical hardware that could be used on the space shuttle and the space station to do remote -- remote diagnosis and treatment -- and provide treatment. And so that's how I got involved in telemedicine.

So we developed exercise equipment to -- to get away from the issues around the loss of bone and muscle. We developed an echocardiogram for looking at the inside of the body, the ECG's.

We developed ways in which we could do stress tests while we are in orbit. And all of those devices needed to have communication ability to bring that information back down here to Earth. And that's what I did for about two or three years.

And then in 1990, I applied to the Astronaut Corps and became an astronaut. Now, you know, when I tell people that I'm an astronaut, people always have this question -- I know you have it in your mind, what is it like to

travel in space?

So let me give you, as we say now in the venture capital business, the elevator pitch of launching in space. So imagine -- when I flew in space, we flew the space shuttle. It weighs about five million pounds. In order to get that five million pounds in the air, we have to light five engines that produce a thrust of seven and a half million pounds. I'm here to tell you this morning that when those engines light, you're leaving this planet in a hurry.

By the time we cleared the launch tower, we're going faster than the speed of sound, 750 miles per hour. And within a short two minutes in flight, we're already reaching an altitude of 100,000 feet above the ground. At that point, we drop off the solid rocket motors. They fall back to earth and we recover those. And now, we're above most of the atmosphere which means this, we speed up.

So at this point we're going 2500 miles an hour. And over the course of the next

six and a half minutes, we go from 2500 miles an hour to 5,000 to 10,000 and eventually to 17,500 miles an hour. At 17,500 miles an hour, we go from being pushed back in our seat to about three to three and a half times our weight.

I weigh 220 pounds, so you do the math on that and that's -- that's the force then which we feel. So we go from that force to zero gravity just like that. And then, we're floating in space.

I'll share just one story with you. When those engines stopped and gravity or the lack of gravity occurred, the checklist that I was using to -- to go through as we were blasting off to space, slowly begin to rise in front of me, and I thought that was pretty cool that it was neat to see that. So I unhooked the checklist, and I threw it, and I saw it go end over end. That was kind of cool.

And then, of course we're in a spacesuit, a suit that weighs about 120 pounds, so it's pretty heavy. It comes in different

sections. So I began to take off some of my equipment; my glove -- and I threw my glove to see it go over and over. I mean it's just wonderful. You know, this is the first time that, you know, I'd been in space so it was a -- it was -- it was just great to have all the experience.

And then, I looked around and I realized that I was the only one in my seat and everybody else had gone. And I was the rookie on the flight, so everybody knew what they were doing. They had been there before. They were not enamored with what I was going through, but -- so I rushed and grabbed my seatbelt and unbuckled it and I popped out like toast out of a toaster.

And being the first time that I was in zero gravity, I was out of control and I was kicking switches and trying to get my space legs together. And I realized why those guys got out of their seat, because I was going to be doing that flailing and kicking. And they were getting

the hell out of the way for that.

So you've heard that I've had -- had a wonderful opportunity -- an opportunity that very few people have had. On my second mission, I got a chance to do a space walk, this time donning a 350 pound suit and walking outside. It was incredible.

When you're outside in space and you look back at the earth, it -- it -- you look at things differently, right? You don't see any lines of latitude and longitude. You don't see any lines that divide countries. And it makes you start thinking about the well -- welfare of this nation, of people that's on this planet.

After all, I jokingly say that, you know, if aliens came to this planet, would they worry about what our ethnic backgrounds are and try to sort us out by that? No, they would look at us and say, "Earthlings." And they would either embrace us or shoot us on sight. So it is with that perspective that I returned to earth with a different mission -- an enhanced mission.

You know, as I said earlier, being on that Navajo Indian reservation and looking at the plight of the Native American people, I realized that there were more people that were affected that needed health care. And so, I began to get into a field that utilized my experience as a physician and also my experience as a developer of technology, to begin to invest in these technologies. So I created the -- the Vesalius Ventures, a venture capital firm.

And so we focused, specifically, on telemedicine. When I went out to try to convince investors to invest in my company, I had to define it in ways in which they understood. I said that, you know, if you're interested in investing in medical devices, we're the company. If you're interested in looking at telecommunications, we're the company. If you're interested in IT, we're the company. And our real interest is in that sweet spot, in that intersection of all those -- those areas.

So for the last 14 years, we've been

investing in this space and have a number of companies that -- that are answering or providing solutions in the broadband enabled health care technology area that we're talking about today.

I want to share with you just a couple of them just to highlight. So we invested about three years ago, in a company called Salus. And it actually was an offshoot of one of the CMS's research projects -- telemedicine research projects where they provided telehealth networks into rural areas and they connected hospitals and schools with academic medical centers.

And they came to us and said that, you know, that there is such a need for this; we want to privatize this. And so we helped them create that providing the capital. And now, they're doing this, not only in an area in Georgia, but they're doing it in South Carolina, which I think you're from or your family is from, right? North Carolina, and Florida. And so that company we're helping to take this product nationally.

Another company that we are currently

involved in that's, specifically, targeting what we're discussing today, mental health, is GSA Health which is a local company here that does telepsychiatry. And that company, last year, begin to expand from Texas and now is in California. And of course our goal is to take this -- this -- the services across the nation and -- and we will do that. We have a distinct plan.

And then, one last company -- I said a couple -- and I mention one other company called Lifebond which is a company that's a technology solution that allows you to have a transportable telemedicine unit that is able to collect -- and connect different ethereal devices, like blood pressure, heart rate, ECG, you name it, to be connected to it. And it -- it can be carried anywhere in the world.

And the secret sauce is the communications package that allow you to deliver those services or send that data either through cell phones, SAPphone, or land line. And so

those -- those are the areas in which -- which we are focused in and which, I think, are contributing to the answer today.

The company provides 24 hour -- here's my commercial. Twenty-four hours access to community health clinics, academic medical centers, to ERs, to correctional care facilities, to rural and urban and to school base. So -- so all of this allows us to do what is required in the 21st century.

So technology, the way I look at it, is going to be utilized for everything that we do as a physician and being a physician. And it will happen in all settings.

I was President of the American Telemedicine Association and one of our goals when we originally started the organization was that, we said, one day, all of this technology that we're advocating is going to be in place; it's just going to be the way in which we -- we do business and we won't have a job. That was our goal; that one day we won't have a job. We

-- the organization will go away because that would be just the way in which we operate. And indeed that's what's happening.

Now, we're using the Internet more for providing health care. We're using smart phones to provide health care. iPads, all of these different types of devices; wearable devices, implantable devices. All those technologies are being utilized right now in the 21st century. And let me remind you, sometimes I have to do this, we are in the 21st century where technology drives everything we do.

All of those things, that vision I have for health care, are enabled by broadband. It's enabled by broadband and that's how and why it's so important that we have this discussion today about how do we get that broadband more pervasive into disadvantaged areas so that we all can have access to health care.

So with that, I'm going to say good luck with the conference today. And I look forward to hearing a number of you. I know we

have a number of experts here today that are going to help to provide that solution that we are all looking for.

DR. WINNIKE: Thank you Dr. Harris. That was a wonderful overview. Next we're going to move on to The Texas Story and we have some really great speakers coming up next. This is a conference in collaboration with the FCC, so we're going to bring a little bit of technology in this morning. And we have a remote guest, Dean Francisco Fernandez, from the new University of Texas Rio Grande Valley Medical School.

And we will have a -- an innovative armchair session with the distinguished Commissioner Clyburn, and also, Dr. Chris Gibbons, also from the FCC, who is the FCC Connect2Health Task Force Chief Innovation Officer. And we are going to have a conversation with Dr. Fernandez to talk about some of the underserved populations in the Rio Grande Valley. This is down in south Texas, and some of their particular needs and what Dean Fernandez's new

medical school is doing to be able to address some of those issues.

COMMISSIONER CLYBURN: Well, thank you so much Professor Winnike.

My goodness. First, let me tell you about someone you already know. There's a Renaissance man that is peering through our cyberspace, who is intent on making a huge difference in the Rio Grande area and beyond. Dr. Fernandez, as you know, is a national leader in academic medicine and joined the University of Texas Rio Grande Valley in 2014, as the inaugural Dean.

You're going to tell me what that feels like, sir, of this new school of medicine scheduled to open this summer. He's also Vice President of Medical Affairs and a Professor of Psychiatry.

Dr. Fernandez has been active in the education of medical students and residents, serving as the Editor in Chief of the American College of Psychiatric -- Psychiatrists,

Psychiatric resident in training examination -- I want to say that three times -- and Chairing the Pride Commission.

Dr. Fernandez has extensive service in organized medicine, psychiatry, and in the community. He is President of the American College of Psychiatry and served as Chair of the Commission on AIDS in American Psychiatric -- of the American Psychiatric Association as well as other AIDS -- HIV-AIDS organizations.

And in 2007, if I could -- if you'll indulge me if can say more, he received the American Psychiatric Association's Simon Bolivar Award for his words -- work with Hispanic and AIDS and Depression in Latino Men.

In 2015, he received a Physician of the Year Award from the National Hispanic Medical Association. And today, you're receiving a special award from -- for us, because you have -- I cannot believe what you've done to join us considering every challenge in the world that you have had. We are so pleased, however, to welcome

you here, Dean Francisco Fernandez. My pleasure to welcome you, sir.

DEAN FERNANDEZ: Thank you Commissioner and thank you Dean Baynes. Can you hear me okay?

COMMISSIONER CLYBURN: We can hear you just fine. It's working.

DEAN FERNANDEZ: I promise that I didn't cause these orthopedic challenges to purposely test my connectivity between --

COMMISSIONER CLYBURN: I thought it was -- I thought it was personal, sir. I thought you did -- somebody warned you about me and you didn't want to meet me in person.

DEAN FERNANDEZ: No, I am really sorry though. After hearing your remarks about mental health and mental illness, it was spoken from the heart. I want to thank you, because it's -- it's very few people that will speak publicly, as you did today, and even talk about your personal experience with the gentleman that you knew that had hung himself.

COMMISSIONER CLYBURN: Yes.

DEAN FERNANDEZ: And I would only add one thing to what you said, and that is, think about those suicides that are occurring annually in the United States, and think about the isolation that you -- as you've mentioned is a critical factor in the sense of belonging that really people need no matter what their illness is.

But in this case, there is no other illness, really, when you think about that. We are all wired for survival and there is no other medical illness which extinguishes that survival instinct.

And so, the connectivity and being able to provide people with a sense of belonging, is absolutely key and I thank you for bringing that to everyone's attention in the audience. And all through the internet. Thank you.

COMMISSIONER CLYBURN: Well, thank you. We could end it there, actually, but I -- well we won't. And you summed it up so

beautifully. So let us -- what's keeping you busy these days? You know, a couple of things are happening down in the Valley. It could have something to do with this -- the medical school that's opening, but, tell us if you can kind of sum it up for -- for us about what you've been doing over the past couple of years and what difference will it make to that area, especially, the four county area and the state of Texas?

DEAN FERNANDEZ: So think of it this way. We have -- since 1947, when the first statute was, basically, registered to create a medical school in the Rio Grande Valley, it's actually one of the few things I can say is older than I am.

People spoke about a dream, and this is really a dream come true for this region, not just because it's a medical school, but because of, as you have there at the University of Houston Law Center, the power of education in creating successful programs that will, instead of being dream busters for the students of this

population, will be dream catchers, and allow them to really expand their horizons. And also bring great things back to the Rio Grande Valley.

But our -- our goal was to provide for the healthcare of the region, and improve access to the healthcare of the region, and improve both education and research. And our whole trajectory began with keeping busy, of course, with accreditation.

But we began this process of trying to think about connecting science to the community, and instead found ourselves looking at precisely what the theme of this conference is, which beyond science, we really needed to create a way to have access to health.

So if you think about the region, you have, basically, the four counties of which we serve which is about 2,000 square miles. And we've got about 1.3 million people in these areas. And it became critical -- and by the way the stretch of the University in terms of its distributed campus from Rio Grande City down to

Brownsville, is about 100 miles.

And so, you have to be innovative in terms of your ability to be able to reach the community, whether that's a community of learners throughout the Rio Grande Valley or a community of individuals that are seeking care for themselves and their families.

And that's how this trajectory began, creating a curriculum, but creating the network that would be able to facilitate an activity throughout our area for the distributed campus and beyond.

COMMISSIONER CLYBURN: So when you talk about that network sir, you know, you had -- I know you had 10,000 applications to the various programs. I mean, I know there will be an infusion of personnel and the like.

You know, tell me a bit about if there's any difference, you know, I don't know about the medical school process, but you know, tell me a bit about the committee, admissions, and what you anticipate -- again, what a

difference this will make in -- in the Valley. Who are the students? Are they reflective of the community? Is that important? What about the cultural sensitivities?

I have a tendency to ask -- ask compound sentences and you can just pick any -- you know, any -- any question you care to launch from.

DEAN FERNANDEZ: Well, you know when you look at the number of applicants, the 10,000 really is roughly 8,000 applications for the, so called, graduate medical education programs, which are the residency training programs, many of which are new.

There were two legacy programs, one in internal medicine and one in family medicine. But now we have obstetrics and gynecology, surgery, psychiatry -- just got approved for that medicine, and we're hoping to complete the application for pediatrics.

So we're really creating the infrastructure for not just the education, but to

be able to keep these physicians that are interested in the type of community programs that we've initiated to be able to stay. As you know, roughly, 80 percent of -- of residents that train in a community will stay in that community to practice.

The medical is roughly 2700 applicants in a short period of time. But then, we screened, and we screened not just looking at the usual sort of metrics, but, the reality is we use a holistic approach. We were interested in people who had particular life experiences, that were interested in being community and patient advocates, and that were beyond desires of lifelong learning opportunities to really focus on lifelong problem solving.

And so, it was a constellation of factors and our curriculum that's caused success. Students uniting culture, care, empathy, science, and skills. So cultural attunement and sensitivity was one of the areas in which, of course, we had to create the -- the necessary

framework, for people to be able deal with the needs of the community here, which is roughly 90 percent Hispanic.

Now that being said, we were interested in educating a diverse group of students, so we were very fortunate in terms of being able to attract individuals, like I said, that were community focused, patient advocates, culturally attuned, and were interested in being lifelong problem solvers.

And the diversity of these 50 students that are coming to the Rio Grande Valley, is inclusive of African American students. We have also a Native American, Asian, and, obviously, about 30 percent of the class is Hispanic, of which, many are from the Rio Grande Valley.

DR. GIBBONS: Dr. Fernandez, this sounds fantastic. As you know, we -- it's not just the Rio Grande Valley, but the whole country is living in times of physician shortages, healthcare professional shortages. Some people estimate as many as 90,000 physician shortages by

2025, 800,000 nurses by about that same time.

So this -- this medical school is just what the doctor ordered as they say. But, will it be enough? What do you think? Your bringing 50 more young doctors to the area. What kind of impact do you think this program will have in the future if it's successful?

DEAN FERNANDEZ: Well, as you know, 50 would be a drop in the bucket, really. The reality is that -- and we're keeping it at 50 so that you know, because remember what I said, I want to be able to keep them in the Valley.

And in order to be able to address that we thought that we needed to have sufficient graduate medical education programs. So if the students came because they were attracted to being part of the community and part of the solutions to the issues in healthcare that are in the Valley, we wanted to be able to assure them that if they wanted to stay, they could stay in other than primary care areas.

So we're building, if you will, both

a medical school and the graduate medical education programs, simultaneously, in order to be able to achieve that goal.

But it's critically important that we do the same thing for all the health professionals. That is part of our goal. In other words, we could not do this and address the needs of the area unless we have a team collaborative effort.

So we have created a network that we call STITCH, or the South Texas Inter-professional Team Collaborative for Health. And STITCH is really for two things. One is we're going to stitch things up in terms of not just the counties, but being able to provide care and access to care.

But we're going to have a stitching of the inter-professional disciplines treating inter- disciplinary care which is very much needed. And in fact, even the teaching at the medical school, is going to do that, by the way.

And you -- you work through the

history of the patient jointly with different disciplines. You engage in which tests you're going to order, engage in the differential diagnostic process and therapeutics with everybody bringing something to the table to solve the problem.

Dr. GIBBONS: That's fantastic. You kind of answered my next question. What is your -- what's your sort of short or medium term vision in the next 10 years? What -- what does it look like? It sounds like you're beginning to answer that already.

DEAN FERNANDEZ: We are trying to do that and addressing it ahead of time inclusive of sort of destigmatizing which sometimes if you, for example, bring people from different disciplines together and you survey them and you ask them, "What would you think of that other discipline and so on?"

But -- but even though they all are within health they really don't know much about each other.

COMMISSIONER CLYBURN: Right.

DEAN FERNANDEZ: And then you're throwing them in a hospital room, together in a federally funded healthcare center, ambulatory health center, and now they have to work together in a team and really don't know the contributions that people made to each of the components of the care.

So we thought about the need for that from the beginning, and being able to serve everybody at -- on the same wavelength in terms of what was needed for the community. But also, the partnership is essential in order to reach everyone or as many people as we can in this area.

COMMISSIONER CLYBURN: Dean, I'm wondering how much you've heard from others when you talk about this approach. Particularly, how targeted you have been when it comes to not only the student ,you know, what you've been attracting in terms of the student demographic makeup.

But again, that commitment to serving the -- the four county region. Are you hearing from other institutions about your -- your -- what I think is a unique approach to education when it comes to the medically underserved communities.

DEAN FERNANDEZ: But again, there's been great interest as people have learned more and more about the different initiatives in the curriculum, an outpouring of support. And then, they all close their comments by saying then, how are you going to do this? You know when -- when -- you really even look at the disciplines' specific requirements in education, people start worrying about -- well, wait a minute you know. Nursing requires this. Medicine requires that. Physicians Assistants need this and pharmaceutical needs this other.

The reality is that the regulatory environment, even in education, sometimes presents challenges in this regard as well as the regulatory bodies in terms of licensure, and

scope of practice, and things of that nature.

COMMISSIONER CLYBURN: Right.

DEAN FERNANDEZ: So we really have to work -- as I said, we're interested in advocacy and people that are interested in being advocates and we see everybody that, whether it be faculty or students, will be serving in that capacity to address the challenges that we face.

Even though people think it was a great model, then there's always how were you able to do that and get it successfully through the process of all the necessary regulatory agencies and so on for certification purposes?

Thus far, we've been very successful I would say, including the Liaison Committee for Medical Education which is the one that accredits medical schools throughout the U.S. and Canada.

So I think we're on a good -- a good path. We -- we thought about what several of my good friends in Florida had told me that had recently started new medical schools. Be as innovative as you can without -- without the

risk. Of course there is a risk not getting accredited, but being as innovative as you can. Not to sound like Donna Summers, but this is the last chance.

COMMISSIONER CLYBURN: No you didn't. No you didn't.

DEAN FERNANDEZ: But, the thing is be as innovated as possible to bring as many strategies and groups to the table as you can to solve the problems of the healthcare needs of the Rio Grande Valley.

And what are likely to be the healthcare needs of the country and globally really, when you look at all of the initiatives that align with some of the needs here.

COMMISSIONER CLYBURN: Now, if I can get disc -- disco out of my brain, I'm going to ask you this. The focus here of course is on, you know, mental health issues. And I want to, if you could kind of give us -- if you could answer this in the context of, not only the institution, but that four county area that you

are -- where -- where you serve.

What are the more common mental and behavioral issues in the Valley? And you know I understand -- are there any cultural differences in the type of health issues and the desire to seek treatment for these challenges?

DEAN FERNANDEZ: I think first of all that they don't really, fully, recognize what mental disorders are, like we would. So as you were speaking to how people might think of somebody suffering from a psychological symptom, for example, they all view it quite different.

So that's a challenge, especially, when you want to bring about therapeutic interventions for those things that might be ailing them. But the major disturbances that we see are depression. And I'm going to, instead of calling it addictions, or chemical dependency, or -- or abuse, I'm going to call it repetitive drives of all types.

So by that I mean, that it's not just food, or drugs and alcohol, but it could be

gambling, it could be pornography. And so, all repetitive drives we see disturbances of, and family and domestic violence.

So those are the top three, I think, as we move into, particularly, in the most underserved of the communities which lie in the unincorporated areas called colonias. It's -- it's where we see these types of problems.

And these are people that already because of the -- their history -- their personal history, have suffered a significant amount of personal trauma getting to where they are in the United States. And so, it compounds the issues and the problems that they see and are re-traumatized by many of the things that they encounter when they arrive in the United States and being part of a community.

COMMISSIONER CLYBURN: I'd like to close this out. Do you want to close this out? Well, Chris has another question and then we are going to close this out.

DR. GIBBONS: Well, I was just going

to ask you Dr. Fernandez if you could talk to us a little bit more about the colonias? You know we don't have colonias up in Washington D.C.

COMMISSIONER CLYBURN: Well, we don't call them that anyway.

DR. GIBBONS: Exactly. Right, right. We have something else that I'm wondering if they are similar in any way? And what -- do you have any special ideas or thoughts about how to really address these tough issues in these tough areas?

DEAN FERNANDEZ: Well, we've begun a process of being able to reach out. It's a process of going through the county, the commissioner's courts, and churches, and being able to sort of gain access to the colonias so that we can provide first and foremost the community health assessment to determine their needs and have them help us -- tell us what they need in terms of the care they need.

And by that I mean even beyond healthcare, so what we're looking at we're -- we're defining inter-professional needs. We're

defining really quite broadly. So it's beyond just the usual aspects in health.

So including education or including the business community or business school. We're including health affairs obviously. But even within health affairs, we're involving communication disorders, and rehabilitative college and strategies that are not typical of the usual health team that you see in communities.

So if someone, for example, tells us that they have a problem with education and dropouts from high school, we may bring in individuals that allow us to bring a GED program to that particular area.

It serves two purposes because the reality is that you cannot engage in these communities without gaining the trust of the individuals that are there. And so the fancy mobile van with all sorts of promises -- they've been there before. And -- and really we need to do better than just providing immunizations,

although that's greatly needed. I'm not saying that it's not.

But we need to do more for the community and, obviously, anything that we can do to improve the overall well being of that community by redefining community engagement and outreach we will do as a part of this project.

We were very fortunate to obtain a grant from the United Health Foundation that has served to create a multipurpose van that's one stop shopping. That van will have oral health that will allow for procedures. It will allow for telehealth creating a hot spot.

It would have a lab and a pharmacy so it works as for one stop shopping, really, for diagnostic purposes and therapeutic purposes. It allows us then to do for example, take the Promodores and we have developed one certificate already but have added qualifications for behavioral health.

So that the Promodores instead of being navigators beyond health promotions could

help us identify what the problems behaviorally are in the community. And how best to also began intervene in a preventive way with each of the communities; and their needs may be different.

And our next certificate will be an oral health. And so, we will continue to extend the capacity of each community. Remember the Promodores of the caseworkers live in those communities. They are part of those communities. So we just recently graduated one of our original cohort Promodores from a training -- a trainer module which -- now, I know it may be difficult for some of you to comprehend this.

Somebody that's orange blended with somebody that's not red, but crimson. So UT collaborated with Texas A&M on the national workers center -- should be able to offer this certificate.

Now, we're training our former Promodores to be trainers to come down and be able to sort of train other Promodores in these other areas like behavioral health, and mental

health, and so on. And have the programs be here in the Valley as opposed to elsewhere.

DR. GIBBONS: Fantastic.

COMMISSIONER CLYBURN: Dean --

DEAN FERNANDEZ: When you're moving in different directions do like GE would say, "Bring good things to light."

COMMISSIONER CLYBURN: Well, on that note I can say Dean, thank you so very much. You use a term to define or describe your building in the -- in the complex. You use the word fantabulous. We think that you are fantabulous. Thank you so very much and please join me in thanking the Dean.

And you promise we'll meet in person, correct? It's not personal, right? We're going to see each other in person one day.

DEAN FERNANDEZ: Most definitely. Without a doubt when I come out of my shell here that I'm in right now, I won't be any handsomer, but I'll be much better and be able to greet you in person.

COMMISSIONER CLYBURN: Well, let me say that what I see is marvelous. Thank you so very much Dean, again. Thank you.

DEAN FERNANDEZ: So I'll just take being fantabulous.

COMMISSIONER CLYBURN: Thank you so much.

DR. WINNIKE: Thank you so much Dean Fernandez. Thank you Commissioner Clyburn. Thank you Dr. Gibbons. We're going to move on with our State of the State, looking at broadband and healthcare here in the State of Texas.

It is my pleasure to introduce Dr. Sharon Strover from the University of Texas where she is the Philip G. Warner Regents Professor in Communication, and she directs their Technology and Information Policy Institute.

She is -- has done many projects looking at the digital divide and the economic benefits of broadband particularly in rural areas. And she is going to give us a really great overview of the state of broadband here in

Texas. Thank you so much.

DR. STROVER: And thank you. Thank you for the invitation as well. It's been a real pleasure to be here. I've really enjoyed the talks so far. They've been illuminating. I didn't know all of these things about the State in which I've lived for so long.

I'm a professor at UT Austin and -- and direct the Research Institute on Information Technology and Policy. And over many years I've looked at broadband adoption and digital divide issues not just in Texas, but nationally and even a little bit internationally. And I thought that today I would try to provide a kind of 10,000 foot level look at broadband.

And it all kind of -- it actually goes back, for me at least, to LBJ. You can't -- I know I'm not color coded today for either for UT Austin or the University of Houston, but coming from Austin it's hard to ignore the presence of LBJ.

And he was an early advocate,

actually, of pushing out electricity into rural areas in Texas, and he highlighted the -- the fact that this was a big State that really needed to get moving and needed to bring infrastructure to rural areas. And my talk is -- is about infrastructure.

It's the stuff that we often don't see. We're very used to devices. We all have our phones. We have our laptops. But, the wires and the poles, those kinds of ugly things, and spectrum, which is all around us. is -- is more of -- more of what I focus on. And LBJ was a real believer in infrastructure, electricity specifically.

He knew that Texas was very rural, especially, when he was around. And it's as we've already heard, it's a state characterized by an immense area. Very long distances between cities. We have low population densities. And in -- and we're an extraordinarily diverse state as well at this point.

But, it was the arrival of electricity

that -- and the creation of some companies, actually, that filled in the gaps where other companies did not want to go to create the kinds of services that folks in rural areas needed. They were largely ignored by a market that was focused a little bit more on population -- the populous -- the populous regions of the -- of the State.

So what I'm going to talk about is really the inter -- the interdependencies of the things that we all know, the computers and devices, and try to link that to infrastructure. What I'll call connection to what we've largely recognized as connections.

And I'm also going to highlight the role of digital literacy which we haven't really addressed -- addressed yet. But basically, you can't have a well functioning broadband internet society, and you can't have broadband delivered health services unless all three are in place and unless they are all operating in a robust way as well.

If we look at who's doing what with devices, well the big story now is cell phones. Cell phones and smartphones, in particular, have escalated their presence. It's a technology that a lot of people have -- 92 percent according to one of the -- one of the Pew surveys.

And I'm -- and I'm going to bracket anything I say that has a statistic in it -- a number in it. But these numbers are changing constantly. They're changing in some fairly predictable directions. Not always predictable directions, however, for example, the second most cited technology here, desktop or laptop computers.

Well, laptop computers going up; desktop computers going down. It's emblematic of our becoming an increasing mobile society. So technologies shift. Our preferences shift. With them, comes certain things that we can do more easily with certain technologies than with other technologies.

So these other various technologies

can all figure into our involvement in a digital environment in some very different ways. Some of them are very useful for health applications. Some are less helpful right now for health applications.

I didn't have a wearable on here. I don't have Fitbits for example on this chart. We know that they're in about, give or take, 30 percent of the population.

We also know people quickly abandon them. And we know that there are -- that not everybody is as interested in them as certain other people. They skew to -- to younger people, primarily. So and that's another story about devices.

There are embedded in-device uses, certainly. I'll call them biases, if you will. Certain population segments use them. Others use them less. Right now, as the chart before you shows, about 90 percent of adults in this country have a cell phone. About 58 percent a smartphone, now 64 percent as of the more recent

statistics. Many people use e-readers and office tablets.

So what do they mean for healthcare and mental health specifically? Well, when we look at what we use cellphones for, these are the most predictable uses: Sending and receiving email. I'm seeing a lot of email delivering right now. That's first.

Accessing the internet, and it turns out -- it turns out people get a lot of health information from the internet. Not everybody goes to the internet for this health information. But a surprisingly high percentage of people say that they do.

Texting, of course, tops everything that we do on cellphones. Using applications has come on strong in the last five years. So of course that's extremely pertinent to healthcare and a few people have already mentioned this.

But there's lower adoption for cellphones and for smartphones, in particular, among older people, among poorer people, people

who make household incomes under 30,000, and who are less well educated.

So to the extent that certain health conditions might be exacerbated or present in these populations, then the utility of smart phones as one particular device could be diminished.

And I'd like to point out to that, if we are talking about low income people and using certain technologies to reach low income people, about half of the low income population has a very tenuous income -- income environment and they constantly drop service, re-initiate service, drop it again. There's a lot of unreliability in what they have with respect to technology, with respect to what they have with smart phone service and data plans in general.

Some people, increasingly, talk about, and I believe Commissioner Clyburn mentioned social media in particular has come up. And Pew Research showed that the presence of social media and people's engagement in social media is, in

fact, related to certain health conditions.

If you have -- I mean, the bottom line is if you have certain chronic conditions and if you have more than one chronic condition, there may be far more utility in engaging in certain kinds of social media beyond sending and receiving email.

But going in and reading commentaries, getting that social support that came up a little bit earlier, finding out -- finding more information, expanding one's health information repertoire, and so forth. So there's a clear intersection between the presence of a medical condition and the utilities of engaging in social media.

I would add that some of our research in south Texas looked, specifically, at the use of social media among -- among -- among Hispanics. And in that particular region of the country, one thing we saw -- we saw was that social media was used a little bit differently there in the sense that it was used less often to

reach out to people that one didn't know and more often to deepen relationships among the people that you already knew. That too has some implication for healthcare.

So trends are mobile access, more of these devices that we've just been talking about, social media, social support and information seeking, and more increasing attention to the nature of what we do with social media, whether we reach out and look for new ideas from strangers, from people with whom we might have some interest shared, or whether we deepen our existing networks. That's called -- the latter's called bonding and the first is called bridging -- bridging capital.

When it comes to broadband adoption and availability in this State, Texas has a lot on its plate. Actually, Texas the access, which is to say the ability to actually get a broadband connection, lags the overall statistics in the United States.

It's particularly when the FCC raised

the definition of broadband to 25 Megabytes per second. What we find is that, well, about a little over half of Texas households do, in fact, have access to that threshold that's not as high as the national level. Most regions that lack this access are quite predictably in rural regions.

We had, as all states did, a broadband mapping effort in Texas. This was one of the last maps that they produced. I think the data comes -- it was published in 2015, so the data's from about 2014. And this is an interesting illustration, I thought, of how we define -- how when we define broadband differently the State really looks a little bit different.

The lower threshold definition is the map on the left and there's a lot of little dots on the map of Texas. But you can see by the more intense red on the map that a lot more connectivity at that 3 Megabytes downstream level existed.

When you look at the 25 Mbps level, not so much. Texas really does have a ways to go. Why is that important? Because a lot of medical applications increasingly require higher speeds. Not all of them, but many do.

This was an interesting illustration of some of the progress Texas made in just the span of about three years. But then again, there's a lot of empty space in Texas where that threshold simply does not exist -- that kind of connectivity does not exist.

So we lag in access when it comes to adoption if a connection is available. If these high speed connections are available. Who actually subscribes? Well, here too, we lag national statistics. About 26 percent of our population does not have home broadband. That's a fixed line in the home.

Nevertheless, almost half the population uses these mobile devices to access the internet. And I would imagine that most of the people in this room do exactly that.

However, most of the people in this room probably have fixed lines at home and also, mobile on the go. That's not the case for many people. Many people are on the go only on phone base access.

And when that enters the picture, one has to consider what the different affordance might be when you are accessing the internet on an extremely small screen. Or even if you're using it as an hot spot with somewhat a bigger screen, there are very different utilities associated with it.

When we as people why they don't have broadband, many people, especially old people, say they're just not convinced that it's relevant to their lives. Affordability is extremely important and they cite the lack of skills. And generally, in that order. Affordability seems to be creeping up, relevance may be diminishing in importance a little bit.

I was glad to hear someone bring up veterans, because Texas does have a lot of them

about seven percent of them live below the poverty threshold, many have disability status, and they truly represent a significant divide when it comes to important health needs and our -- our -- the need to really redress what's going on with veterans.

What are some of the factors predicting adoption? In very general terms, these are negative and positive relationships. If you are older, you have less access. You adopt less frequently. Education and income are positively associated. Being African American or Hispanic negatively associated and income -- well, income, I already mentioned.

So we know that these have been statistics, not only in the State that come out in Texas, but all over the country.

Nevertheless, a lot of people do use the internet around -- this is a national level statistic, about 87 percent as of about a year ago, use the internet in some way shape or form. It doesn't really speak to how or how often and

how intensively people use the internet. How much they rely on it. When we broke down data, FCC data, looking at the difference between world and metro areas. Difference that is very important in Texas because we have so much rural territory here. We found a very consistent difference across a seven year period.

Even as we -- we knew adoption was growing and availability of networks was growing, we continued to see a 13 percent adoption gap between metro areas and rural areas. We haven't done the statistics to plot this for more current data, but that -- the fact that that gap could endure for so long is really quite striking.

Then the third factor I wanted to talk about was different -- was digital literacy. It's a term like telemedicine that means a lot of different things to different people. It's measured in different ways. Sometimes it's confidence. Sometimes it's actual competence. Sometimes it's a specific skill set. We know that smart phone literacy is very different from

the computer literacy. We know that people who are lower income especially with data caps do fewer things on their smart phones than do people who don't have those data caps. And especially than do people who have -- who have both fixed home broadband as well as mobile broadband. And the same set of factors have a lot to do with digital literacy that we see coming up when it comes to adoption generally.

So I really think of this mesh of availability of networks, adoption of broadband, and the ability to use broadband as being kind of a pyramid. You have to have some kind of network at the base. But you also have -- you have to be able to access that network. You have to have the skills in order to do so, in order to make use of what is available on the network.

And when it comes to practices, those skills, and abilities, and relevance has to be imbedded in one's daily life in some way, shape, or form. That's the key to the relevance question. If -- if you don't need the internet

or access to health information for something that's very routine in your life, everything begins to -- to crumble a little bit. They -- I think of them as a pyramid. They interact.

Very quickly then, just a few comments on health facilities. I've talked a lot about end users, individuals. When it comes to actual health facilities it's a very different story. I'm glad my comic is at least getting one smile, here. Everybody's interested in cost savings, but we're also interested in reaching larger constituencies and this is where location of health facilities is key. The presence of competition can drive prices down. Middle mile costs we know in Texas are extremely large because distances are large here.

What this has meant, just to share one -- some very recent data with you, my colleague Brian Whittaker analyzed some of the Community Anchors Institution data that the FCC is gathering. And this is data that anchors report to the FCC, but they don't all report it.

So this map simply shows how many health care facilities in this case reported data to the FCC. And he was especially interested in looking at speeds available to different healthcare facilities. And this is a lot of numbers that I don't expect you to grapple, but I'd like you to focus on the area of purple in these bars.

On the lefthand in particular are download speeds, metro and non-metro comparisons over time. So we see huge growth over here in the purple. Those are the high speed metro speeds in non-hospital facilities. And I chose non-hospital because a lot of rural areas don't have hospitals. So this is a good indication of what's going on in rural.

Metro, lots of growth in these non-hospital facilities. Look at the growth in non-metro. And look at the comparison to metro. Texas has a long way to go in terms of getting higher speeds to medical facilities in particular.

So telemedicine as I said, means a lot of different things. I -- I especially like this particular diagram that compares telemedicine in terms of functionalities, applications, and technologies, because each one of those has different implications for telecommunications. Not just devices, but speed needs and so forth.

And I think I'll just leave you with -- with the idea that there are a lot of different kinds of medical applications that are very pertinent to the direction that we're moving in the 21st century. Some like text, this is the example on this particular chart which is from the 2010 FCC Broadband Plan, refers to text of the clinical document.

A text message doesn't -- doesn't need much bandwidth either. The text is not bandwidth intensive. Anything with video however is. Anything realtime has certain network demands that non-realtime does not. So these are a lot of -- there are a lot of different considerations that go into assessing the utility of network

connectivity for a variety of medical applications.

And what I've tried to do is underscore that the network, the users, the devices and the needs of particular medical applications are all different -- there are a lot of different combinations at work here that -- that we as -- as an audience of people who are interested in this field and developing this field have to be aware of. I'll end there.

DR. WINNIKE: Thank you so much, Dr. Strover. Next I would like to introduce our next speaker, Brian Henry, who is the Director of Telehealth at the University of Texas Medical Branch in Galveston. And he has 25 years of experience in telehealth here in the State of Texas to give us a broad overview of our activities here in the State. Thank you so much.

MR. HENRY: Good morning, again.

And again, my name is Brian Henry and I am the Director of Telehealth at the University of Texas Medical Branch in Galveston. And I'm

here to provide a very brief synopsis of telemedicine in the State of Texas addressing the challenges for expansion and highlighting some of the work being done to bridge the gaps in access to care.

Before moving forward, I would really like to thank the Commissioner, and the FCC Connect2Health team, and the University of Houston for hosting this great event. How and why I was included in this credible list of speakers I'll never know. A very accomplished group.

I started my career in healthcare right about the same time that telemedicine was starting to be used in two academic institutions here in the State. That would be Texas Tech University in the west and then the University of Texas Medical Branch in the southeast.

The internet was not -- or this was roughly 25 years ago when the technology was large and cumbersome and extremely expensive. The internet was in its infancy and access to

commercial broadband was non-existent.

Despite the almost insurmountable technological challenges these two institutions faced, both pressed forward with a vigor to develop and expand their telemedicine efforts as they had identified the new technology to be the answer for access to care in this large, mostly rural, State of ours.

Jumping ahead to the present, a lot has changed for telemedicine over the last 25 years. Technology has improved, access to broadband has increased, and stakeholders in health systems have warmed to the idea of telemedicine adopting the idea that telemedicine could and should be part of the portfolio of services they provide. Despite these advances, barriers still exist in this great state of ours.

For the largest state in the lower 48, geography and rurality is the most obvious barrier to access to care in Texans. With 254 counties and most of them being deemed medically underserved areas, distance and logistics make it

almost impossible for some of our residents to receive care they need.

Reimbursement for telemedicine services or the lack thereof, also impacts the adoption and expansion of telemedicine. Fortunately -- I'm staying on topic -- behavioral health was given an early path to reimbursement and continues to be the most utilized service in the telemedicine portfolio.

Physician shortages. The Texas Medical Association reported the Texas ratio of psychiatrists per capita is only 58 percent of the U.S. total per capita ratio. The lowest comparison of the 40 major medical specialties included in that TMA study.

It would take an additional 1100 psychiatrists and another 200 more child psychiatrists to bring Texas up to the national per capita workforce totals. This would require our state to recruit every single graduate of every single residency program in the country and half the graduates of the child psychiatrist

fellowships in the United States for a single year to achieve this goal. Mind blowing point intended.

Exacerbating these barriers is the commonly held perception that Texas is too restrictive to telemedicine when considering the Texas Medical Board Rules of Governance. Further fueling the myth, the American Telemedicine Association gave Texas, one of three states, a failing grade when evaluating the State's telemedicine landscape.

As someone who's committed the last 10 years to developing and implementing telemedicine programs for large health systems, I take a more conservative and optimistic view. I believe the rules do not restrict the delivery of care via telemedicine, but instead, it ensures that care's delivered in the safest manner possible all while providing guardrails that help to limit both fraud and abuse.

Despite these barriers, there are many great things happening in the State, and a

lot to look forward to in the advancement and expansion of telemedicine, especially, in the realm of behavioral health. Some of the programs that are pushing telemedicine forward here; the formation and the establishment of the Texas E-Health Alliance providing a forum and a voice for vendors in the health information technology sector, to help drive advocacy and policy in what I consider to be the wild west of health care.

Nora Belcher is the Executive Director of that group and she is here today to do a deeper drill in practice and policy.

The Texas Medical Board's efforts in establishing a telehealth stakeholder committee, this is to ensure the topic of telemedicine is in the forefront of their consideration and governance. The State legislature is taking a more serious look at the topic of telemedicine and the benefits for patients and health systems by accessing or employing the practice. This is supported by the increasing number of telehealth bills you are seeing every single legislative

session.

The injection of private investment in healthcare technology in telehealth platforms. Over 1.1 billion in 2015, 250 million of that, specific to telemedicine platform technology.

The surge of adoption and development of telehealth programs by large health systems in the State. Some of these examples being, Children's Hospital in Dallas with their school-based telehealth program expanding to 57 schools in the Dallas-Fort Worth area in just the past two years.

The Ethan Project here in Houston, which you'll be treated to a discussion and demo later in the program.

Texas Tech University's pursuit and award of a federal telehealth grant establishing the Tex-lit Telehealth Resource Center, a non-profit entity providing assistance and guidance to health systems and providers in Texas and Louisiana.

Texas Tech is also now offering a

curriculum for health care professionals to pursue a certification specific to telemedical care, one of the first in the country.

Ascension Health's efforts in Austin, Texas in conjunction with the new University of Texas Dell Medical School, delivering a wide portfolio of telemedical services to central Texas. The primary being behavioral health and psychiatry.

And probably the biggest news of late, and something that's very near and dear to me, as I will be responsible for the implementation, is the approval and the appropriation of funds by the University of Texas regents, endorsing Chancellor McCraven's initiative to establish a state-wide virtual health network.

The University of Texas systems are in a very unique position to leverage its world class health science centers and medical schools to create a model for coordination and care delivery through the VHN.

The network will provide coordinated

inbound and outbound support for telemedical services from all eight locations, including the Valley, into care settings such as other hospitals and clinics, nursing facilities, schools, employee work sites, patient residences.

The UT VHN will be a centralized coordinating entity with virtual care hubs of excellence, as an integrated healthcare provision model for quality care management, in a highly constrained cost environment in the community and public health settings.

The systemic integration of technology, leveraging the State's broadband network, would help providers, care protocols, and support systems would work to deliver healthcare more efficiently and effectively.

By nature of its connections, the UT system will be able to cast a wide net of service across rural, urban, and under-served areas, truly bridging the gap in access to care.

So in conclusion, the nature of an effective and a proficient telemedicine practice

depends largely on its operational protocols and sustainable business models. But most important is the broadband network these programs run on.

With access to high speed interconnectivity we have the opportunity to enhance healthcare information sharing, expanding access to care, and improving quality and outcomes for patients in the great State of Texas.

Again it was an honor to be a part of today's discussion and I hope you enjoy the rest of the program. Thank you very much.

DR. WINNIKE: Thank you so much, Brian. As we move along, we have a really exciting demonstration for you right now. We have Dr. David Persse, who is the Physician Director for the Emergency Medical Services for the City of Houston Fire Department. And he has an amazing, innovative program that you may have heard of; it's called the Ethan Project.

And he has his ETHAN Project EMS ambulance outside, and he is going to give us a

live demonstration on how they do remote telemedicine on their -- on their runs when they have 911 calls. Thank you so much, Dr. Persse.

DR. PERSSE: Thank you, once again. While our IT people are getting set up -- oh, I see -- oh, Bernard stepped out, I was going to give him a shout out because this ETHAN Program started a couple of years ago. It's 1115 waiver funded. And actually, its origins have his fingerprints on it. So years ago, he had the vision to see that -- that there was some potential here and helped us out with it.

And so what screen is it on? So that screen is dark. Is that going to be dark? It's up now? It's up -- it's up now? Okay, good.

So let me sort of set the stage for you. This is the ETHAN Project. ETHAN isn't named after a person. It stands for Emergency Tele-health and Navigation. Now, there probably is somebody named Ethan that at some point we'll come across. You'll see that this is a program for people that have very low acuity issues and

I'm sure at some point we'll come across a patient ETHAN who will embody the -- the benefits of this program.

But it stands for Emergency Tele-health and Navigation. And I just want to point out Dr. Michael Gonzalez is the Project Manager, and he is a veteran of the United States Air Force where he worked with the Air Force doing a lot of telemedical applications in moving patients in the theater in the Middle East. And so we were fortunate to have him be part of the project.

As I said, it stands for Emergency Tele-health and Navigation. The problem for which this is a potential solution is that we have all heard on the news about emergency department overcrowding. People using emergency services for things which may not be a true emergency.

And historically, we use -- when people call 911, we use the single most expensive form of transportation to get them to the single

most expensive form of unscheduled healthcare, which is about as inefficient a system as we could come up with.

You know we would never have purposely designed it this way, except we actually did. So it's time for us to go back and change it.

So you know Houston is a -- we've already heard of all the accolades. But in Houston there's a lot of, you know, great brain trust here and potential. We've got telemedicine infrastructure and so we're trying to apply it to this problem that I just described.

And we're very fortunate that we got some start-up funding, if you will, through the 1115 Waiver Project, which is very complicated and I'm not going to go into it because it's so complicated, but if you just want to know -- for those of you who are not familiar with it just Google Texas 1115 Waiver and you'll be greatly informed and have a very good night's sleep.

It's, basically, a way of Medicare/Medicaid funding in this State. It is a

waiver from the usual way that that money is distributed in order to come up with innovation projects -- to fund innovation projects to lead to more efficient ways of funding healthcare. So that's how we got it funded.

Very quickly, the Houston Fire Department is one of the largest in the nation. Depending on who you talk to, we're either the third or fourth largest EMS provider in the nation.

We go out on about 800 runs per day; we transport just over about 50 percent of those runs. Which means we don't transport just under 50 percent of those runs. And so what happens to those folks? Do they actually get the care that they need? It's done with about 100 plus fire stations, and we've got about 3800 firefighters, EMTs, and paramedics.

So in a synopsis, and we're going to demonstrate this in just a couple of minutes, people call 911. We dispatch folks out there. It could be an ambulance, and the way our system

is designed, it could actually just be a fire truck depending on what the caller says. If they make it sound like it's a very low level emergency, we don't send -- we run out of ambulances on a daily basis.

We run short of ambulances on a daily basis. So we send the fire trucks out to investigate first. Fire trucks are staffed with four EMTs, and ambulances are staffed with two EMTs. We also have paramedics in addition, but you definitely -- the only piece of medical that is not on a fire truck is the stretcher. They have the other medical equipment and training so you get good medical care quickly.

They -- of all the units, the fire trucks, the ladder trucks, the ambulances, the paramedics units, they all have the G1 Panasonic Toughpads. And I've got one right here. And that's how they do their routine records. And they happen to come equipped with a camera and a microphone.

And so, we have the ability to

connect. And this is a picture of Dr. Gonzalez actually as he is staffing the ETHAN desk as a -- as a physician. So the crews go out; they interview the patient, determine if it's a low level emergency, maybe doesn't need an ambulance, maybe doesn't need an ER. We'll talk to the doctor and find out what else we can do.

And so, the doctors have a couple of options. We can set the folks up if we think they still need to be seen in the emergency department, for example, if it's a hand laceration that needs to be sutured today, it can't wait til tomorrow really, it doesn't need an ambulance, we can put that person in a cab and still get them to the care that they need.

If they have something less acute, as we'll see in our demonstration in a moment. If it's less acute, maybe they don't even need the emergency department. We can put them in a cab and get them to a clinic.

Sometimes, we just give the people some home healthcare advice. They take care of

their own problem, see their private physician a day or two later, saving the entire expense of an ambulance ride and the emergency department.

But one of the key things that ETHAN -- that it stands for Emergency Tele-health and Navigation. And so the "and Navigation" part is what we call the Care-Houston Links.

And this is where -- and not all are called -- the doctors pick them and identify the ones that get referred to the Health Department where a social worker and a public health nurse will follow up with that individual to find out what is it in your life that caused you to call 911 for this -- for this apparently minor problem that apparently or you may think anybody would know better than to call 911, but what is it in your life that caused you to do this?

And what we find out is, in about 80 percent of these cases, they actually can solve the problem. These are predominantly social problems not medical problems, and the nurses are about 80 percent successful in getting these

folks not to call 911 again.

They get them medical home and educate them about the resources that are available to them. And that's important because the other thing we don't want to do is, we don't want to set up a system where people call 911 to get a free cab ride to free clinic appointment. We don't want to create another problem.

So we've been going for about two years now, and you'll see that in 82 percent of the cases -- this is a complicated slide -- but the percent of EMS transports -- so many times the doctor thinks you know what she really does need an ambulance.

The flip side of that is that 82 percent of the time the doctor says we don't need an ambulance. Still a large percentage of these patients are going to the emergency department as opposed to going to the clinic.

Part of the problem is that our hours are greater than the clinic hours. We go from eight in the morning until ten at night. The

clinics generally shut down around six in the evening. And we're open on weekends and the clinics generally aren't open on weekends.

So that percentage of patients going to the clinic would be greater if we had greater clinic capacity which is beyond the control of Houston Fire Department, unfortunately, or the Houston Health Department.

And we also map these cases of where they're occurring, so we're finding that in somewhat predictable neighborhoods we see other health disparities. So that helps the Health Department as we start working with other community partners to start resolving these problems and to try to get ahead of it before they call 911 in the first place. And of course this required a large number of folks to help us.

Medic 29 MD1, go with the demo.

So what we're going to do now is hope that Medic 29 is parked outside and you'll be able to see during the break. They're going to call me and I am going to use this computer which

I believe is going to show up on that screen over there. And keep your finger crossed and we'll see if this works.

And then, the other thing while I've got a moment here -- the other thing we've also got a mobile stroke unit out -- out there, which I've just got a couple of slides when we get done. Maybe I'll jump ahead on those slides while we're waiting for them to connect.

And the mobile stroke unit is looking at -- we put a CAT scan in the back of an ambulance. And the reason for that is, that we know -- and this is the slide that shows that for patients who are treated with acute strokes within the first three hours, there's a potential to reverse the stroke.

But it's clear that the earlier the patients are treated, the better their outcomes are going to be. And so this shows that at three hours the benefit of the clot dissolving drugs wears off, and it says that for 90 minutes or less, it appears that the benefit may be greater,

but there is a small number of patients who were -- met that time window.

So the question is, well, what if we were able to get them treated earlier? So the answer is, bring the hospital and bring the Cat scanner to the patient. And so that is what we have. And we have that out there to show you.

And this is one of two money slides. This one shows that what we're -- to draw your attention to the bottom -- the number of patients who are treated within the first hour of symptoms if the mobile stroke unit goes out, is 42 percent versus zero percent of the patients get treated in the hospital.

It's just our inherent delays within a hospital. I'm an emergency physician. I work in the ER. What is the ER? It is a place with X doctors, Y nurses, and 7X patients, right? So you've got this patient-to-physician ratio that's out of whack there, and sometimes the same thing with a scanner.

And you can see that, you know, for

the next -- for the next 20 minutes it goes up 37 percent, and that's where we first start seeing some patients treated in the hospital. And it's basically -- it's inverted statistics there. And the bleep is, that the earlier you treat somebody, the better off that they're going to be, and so this is going to have a huge impact on their outcomes.

So here's the other money slide. This is the additional costs for the CT scanner ambulance, and it comes to about over five years and it's about an additional 1.5 million dollars. And again, I wish Dr. Harris was still here because here's the opportunity for him.

He believes that he can successfully treat seven patients and it costs about $200,000 per patient to care for those stroke -- the outcome of their stroke. The -- the financial impact of the stroke is at least $200,000.

And if any of you in the room has family with -- who has had a stroke and been debilitated, you would probably scratch your head

and say "gee" that seems awfully small. This list includes all strokes. The worst stroke would be more.

But at seven patients in five years, it's cost-neutral. And so going back up, if you look at these numbers, in the first year we treated 135 patients. So we look like the numbers are going to run in the right direction.

DR. PERSSE: Medic 29 to MD1.

MEDIC29: Medic 29, go ahead.

DR. PERSSE: Hello, Medic 29. Can you hear me?

MEDIC29: I can hear you.

DR. PERSSE: I can hear you; you're coming in real faint though. Let me try to turn up the volume a little bit. Can you guys hear? But can you hear her? Oh, you can hear her. All right, go ahead Medic 29, give me your report.

MEDIC29: Yes, sir. I have a 21 year old male. He does have a primary complaint today. His complaint is he takes medication for schizophrenia and depression.

He's a few days from running out of his medication. He's new to the area and he doesn't have a primary care physician or any way to get the medication refilled. He called 911 today asking for assistance so that he can get his medication refilled. He says he knows that once he runs out of his medication that he starts having symptoms within a day or so. He has stable vitals. Were you able to download his vitals?

DR. PERSSE: Okay.

MEDIC29: He has blood pressure 118 over 72. His pulse rate is 76. His respiration is at 160. He's at 99 percent aware. He is awake, alert, and oriented. His pupils are equally reactive. Everything else is good. I was calling you to see if we possibly could get him a clinic appointment.

DR. PERSSE: Okay. Did you upload the record?

MEDIC29: I did.

DR. PERSSE: All right. It's not

coming through. Let me try again. All right. So the record isn't coming up, but normally what would come up would be an electronic patient care record on this screen for me to then start filling in the data.

But it would already come pre-populated with his name, his age, and his date of birth, and his vital signs. So I would look at that and then I would be able to add into that. But so -- okay. Why don't you let me talk to the patient?

PATIENT: Good morning, sir.

DR. PERSSE: How do you do, sir? I'm Dr. Persse. Can you hear me okay?

PATIENT: Yes, sir.

DR. PERSSE: And why don't you tell me a little bit about why you called 911?

PATIENT: I'm not feeling well today, and I'm running low on medication.

DR. PERSSE: Okay. You need to speak up a bit, because I'm having a hard time hearing you.

PATIENT: I'm a little low on my medication.

DR. PERSSE: Okay. So you've got a history of schizophrenia. Are you hearing any voices from people you know aren't there?

PATIENT: No, not really.

DR. PERSSE: Are you seeing anything that you know isn't there?

PATIENT: No.

DR. PERSSE: I also understand you have a history of depression. Do you have any intention of hurting yourself?

PATIENT: No, sir.

DR. PERSSE: Okay. So you're on your medicine now but you're about to run out; is that right?

PATIENT: Yes.

DR. PERSSE: Okay. Would you like to go to a clinic? Would you like to go and be seen by a doctor?

PATIENT: Yes.

DR. PERSSE: Okay. So normally we

might be able to send you to an emergency department, but I actually have the ability to get you seen by a psychiatrist today. How's that sound?

PATIENT: That sounds great.

DR. PERSSE: All right. And so I'm going to go in and enter in our zip code here. What is the zip code here? 20004. And this then will re-sort the clinics and bring up the mental health ones. And so I've actually got a clinic appointment available at 2:30 today. Would that be good for you?

PATIENT: That will be great.

DR. PERSSE: Okay. So now I would normally go in here, and I'm not going to do it now because I don't have the operation, but it's very simple. I put in a phone number for him, his name, his date of birth, his gender, and I put in a brief description of what's going on, and then we'll schedule the appointment.

Sir, do you need a ride to the appointment or do you have your own

transportation?

PATIENT: I need a ride.

DR. PERSSE: You need a ride. Okay. So I'm going to go to -- okay. This will just take a second and we're going to get a cab squared away for you. No, really. We're going to get a cab squared away for you. It just takes a second. Okay.

And then again, for the -- for everyone in the audience, it will be simply putting in a phone number that works for him so the cab driver can call if he needs to, the location where he wants to get picked up.

And I can, actually go ahead in here and I can pick the Memorial Hermann clinic that I just saw from the other web page. And that auto-populates it into this order for the -- for the cab driver.

And so I'll then pick a time which would then correlate with his appointment. So I picked a 2:30 appointment this afternoon, so I can would set it up to pick him up about 2:00.

Is that okay? That work for you?

PATIENT: Yes.

DR. PERSSE: All right. So at 2:00 you be looking for the cab. He's going to pull up in front of the location we agreed to pick you up. He's not going to come up to the door and knock. You need to be watching for him, and then he'll get you to the clinic and they'll also get you back home. Okay?

PATIENT: Okay.

DR. PERSSE: All right. Good luck, sir. I hope you're feeling better soon.

PATIENT: Thank you.

DR. PERSSE: All right. Let me talk to the firefighter again. Vicki, do you need anything else from me?

MEDIC29: No. Do you need anything else?

DR. PERSSE: No, we're good. Thank you. And he's done. And that is the demo. So we had a little technological difficulty, but for the most part it went pretty well. Thank you.

DR. WINNIKE: Amazing. Thank you so much Dr. Persse. This is such an amazing piece of technology and we're so glad that we're -- we have this pioneering program here in Houston. And we know we're running a little bit behind time. We're trying to make up our schedule, but I have -- Shing Lin is coming up next.

He is the Director of Public Safety Technology Services for Harris County, which is the county that surrounds Houston. And he's going to talk a little bit about the Harris County Public Safety LTE Broadband Network. And then they also have a mobile demonstration outside that you guys will be able to see during the lunch break.

MR. LIN: Thank you. Good, almost lunch, I guess. I'll try to make it quick and you can throw things at me if I'm running too long.

My name is Shing Lin. Again, I'm with Harris County. I'm the Director of the Public Safety Technology Services team, so yes, that means I'm an IT guy. So I apologize for any

mis-speaking.

I want to spend a few minutes today to talk to everybody about what the county is doing with the Public Safety LTE network. Anybody in here -- has anybody heard about the initiative that we've been working on this? You can't answer this. Has anybody heard of FirstNet? Okay. We need to get FirstNet out here, Commissioner.

You know, this meeting has been real interesting because we've, as the Public Safety Technology Services team implies, we work with, you know, the Public Safety First Responder teams. Not just the Harris County agencies, but just then and around, right? And we're trying to provide technology that can help them do their work. And one of the things we're responsible for is this broadband network that -- that we are currently building.

For those that don't know, there's a nationwide initiative going on through FirstNet or the First Responder Network Authority that is

trying to build out a ubiquitous coverage broadband LTE network not just in the metro areas but as well as rural coverage areas, right?

So the county is actually one of five first early builders within the country undergoing this initiative. And we're just a pilot builder. And the idea is that we're trying to figure out what it's like to have a network, to operate it, to work with the end users on how to make the network better, so that there are lessons learned that FirstNet can take in as they are deploying this network nationwide.

It's important to point out that the network is standards-based, right? So it's very much like what all the major carriers are doing, right? The AT&T and the Verizons of the world.

And that's an important thing because as we've talked about here, cost is a factor, right? And so if we go on a commercial standard, you know the hope is that the infrastructure, the devices, all of the costs will get driven down over time so that access to the network is

easier.

Important to point out is that we're talking Public Safety First Responder only network, right? So what that means is we're not fighting everybody else who's trying to Facebook, or Instragram, or doing whatever it is that they do on their network while, you know, professionals need the network and they need the band --

So commercial capacity -- all right, the equipment we're using -- the equipment that FirstNet should be using going forward is the exact same as what the commercial carriers use.

So that's important to consider. Now, if you look at the number one and number two carriers in the Houston market, they are each running, I would say roughly around 2,000,000 subscribers, right?

We're looking at maybe 20-25,000 subscribers, but we're leveraging the same type of equipment. In fact, with one of the carriers we're using the exact same equipment. And that's

important because when you need it, you don't want it to fail, right?

So that's where this Public Safety gray conversation comes in. You know, for all our sites we're ensuring availability. So that means battery backups, generators, multiple paths of back haul connectivity to the sites so that -- in a lot of ways we're building a network for that 2 percent, right? And -- and that -- that does get expensive, right? So -- so why build the network?

I think we -- we touched on this for the last hour and a half. Application use growth, data growth, and we just saw the ETHAN demo over here. I mean, this is what most users expect, right? This is what we're used to.

Think about our own personal use of and dependencies on the internet and on our own personal life as well, as well as a professional life. That growth is -- is probably -- the cat's out of the bag. That -- that one we can't pull back, right? And so all of that just leads to

congestion. The idea of needing access but not being able to get to it.

And if you focus in on these two pictures on the bottom. This is actually a picture here in the Houston area. I believe it's 290 -- maybe not, it's too big. But it's of Rita evacuation. And if you actually look at the lower right picture, there's actually an ambulance there and it's -- they're actually trying to work on somebody.

So what -- what are the odds that they are able to get access to -- to any connectivity other than say radio at that moment. Probably pretty slim to none.

So -- so this is why, you know, we're looking at building off of this network. This is why FirstNet exists is to solve this connectivity problem. So the county's build out will be in two main phases.

The first phase is focused mostly on outdoor coverage, okay? We planned 37 sites, but we think we'll end up with about 40 sites around

the county. And we're thinking that all of these should be in place fall of this year.

One thing to point out about coverage of this network versus a commercial network is commercial providers will go where there are subscribers, right? That's where the money is. That's how they're going to need to feed this.

Our coverage consideration is quite different. You know, we talked a lot about rural. The City of Houston is of course a real dense metro area, but once you leave the second loop, our Beltway, it starts to get, you know, thinned out pretty quickly. And in what I call the rabbit ears of the county, I mean, there are more cows out there than there are people, right?

So but -- but we're still providing medical services and healthcare to those regions, right? So our coverage model is quite a bit different as far as consideration for where we need to go.

The Phase two of our build out should take us to about 92 sites, and that's primarily

focused on filling in different holes as well as indoor coverage. We don't currently have an ETA for that, but we think that growth will be quite organic. Because once we deploy and once things get out there, I think there's going to be a lot of requests to fill in gaps and in different things like that.

So what are some of the use cases then? You know we talked about that today, right? It's getting access to data when you need it. It could be day to day activity, patient transport, in some cases non-transport, right? In-house patient visits, wearables -- we discussed those. Sensors -- different biometric sensors.

And as, you know, a lot of discussion is around the larger events. You know we've all been to a ball game or a parade, or -- or you know, evacuations of some sort and not be able to connect. Well, this network, again, is dedicated to public safety. So imagine your own freeway coming down I-10 to get to downtown every day,

right? That's what we're discussing here.

And then of course disaster recovery. You know we, of course, have a lot of hurricanes in the area, and that's what we tend to focus on. But -- but it could be any sort of evacuations. You know, we had a big chemical fire recently at a warehouse around here they actually had to evacuate the whole neighborhood, right? So in that scenario, this kind of connectivity will be in there.

So I'll just leave with -- with what Allison mentioned. We actually have a mobile command unit outside that is designed to provide coverage -- band 14 -- so public safety LTE broadband out there, for additional capacities, or even taking it to places that don't currently have LTE broadband.

So I think it's after lunch, I believe, Yeah. All right. Thank you.

DR. WINNIKE: Thank you so much, Shing Lin. We are going to take a break right now -- a truncated break, because I know that

we're running behind time. It is 5 til 11:00. So how about a 10 minute break. We will start back at 5 after 11:00.

DEAN BAYNES: But before we take a break I want to recognize Ivan Sanchez, who is representative of Congresswoman Sheila Jackson Lee. She couldn't be here with us today because of her obligations in the U.S. Congress, and we welcome you here on her behalf. Thank you so much for coming.

(Whereupon, the above-entitled matter went off the record at 10:55 a.m. and resumed at 11:29 a.m.)

DR. WINNIKE: Let's get started. For our next panel on Care Challenges and Mental Health and Behavior Health and look at Connected Solutions. So we have a wonderful panel with us today including part of our panel is virtual going with our -- our virtual theme here.

And really quickly, I would like to introduce our moderator for today's panel, Dr. Mickey Slimp. He is the Executive Director for

the Texas -- East Texas Interactive Healthcare Network based at the University of Texas Health Science Center at Tyler.

And he also is the Executive Director of the Northeast Texas Consortium on Colleges & Universities. And he is a noted expert in Broadband Connectivity in healthcare, especially up in East Texas which is a rural area of the State and is very familiar with a lot of the issues we face in both rural and urban areas. And so, Mickey, I'm going to turn it over to you. Thank you.

MR. SLIMP: Okay. Thank you very much. It's a pleasure to be with everyone today and I'd like to thank the Commissioner and the law school for having our session here and pulling everything together for us. We're still pulling our panel together because of the shortened break, so -- so we'll be doing a little movement over the next few minutes.

But it's kind of exciting today for me. I've met a couple of the panelists so far

that I have wanted to meet for a number of years knowing what their programs are doing. And it's a big step. So with the size of us, it's hard for everyone to know each other, even though it's a small business in the state.

We have five panelists today. Laura Galbreath will be our first person, from the Substance Abuse and Mental Health Services Administration working with the Center for Integrated Health Solutions and the National Council for Behavioral Health.

Susan Rushing is with Burke Center out of Lufkin, Texas, working on rural telehealth and telepsychiatry. Timothy Elliot is a Professor at Texas A&M in the Department of Educational Psychology and also the Executive Director of the Texas A&M Telehealth Counseling Center.

Travis Hanson is an attorney and is the Executive Director of the West Texas Health Information Technology Regional Extension Center. He's affiliated with Texas Tech University, their Health Sciences Center.

And Yahya Shaikh is the Senior Advisor for Connected Health and Chair of the Connect2Health Task Force with the FCC.

So we're going to be moving pretty quickly and so I'm going to go directly to Laura who's talking to us remotely and have her share some of the things that she's doing.

MS. GALBREATH: Hi, good morning everyone. I'm really excited to give you a quick contact. We're focused on the integration of primary care and behavioral health. No matter where you present it, additional area of technology and broadband enabled solutions is just going to be critical. And so we're ---

MR. SLIMP: Laura, if I could interrupt. Your audio is clipping for us. Try speaking just a little slower and see if that helps at all.

MS. GALBREATH: Certainly. I think the opportunity at the federal level would -- you know, across federal agencies -- is going to make an impact on having more providers of technology.

But, what I want you to know is that the framework that we're using when we think about band-enabled or certainly part of the ---

MR. SLIMP: Laura, I'm going to interrupt one more time. To the audience, can you follow her well enough or is it too gappy?

THE AUDIENCE: It' too gappy. It's pretty gappy.

MR. SLIMP: Pretty gappy. Laura, we're going to take a break for a minute. I'm going to let our technical folks work on this for just a minute. It's a real good demonstration of why we need the FCC initiative on broadband, because this is definitely the issue that we have when we try to do telepsychiatric services in rural areas. And I guess that's a good start for me to bring mine up. Guys, if you'll go ahead and bring up the slides.

I'm going to talk about our project in East Texas. That is exactly what we see in East Texas when we try to do broadband. I've got a slide up there that you see just to give you a

little perspective of size when we talk about East Texas.

This is a wonderful slide that was shared with me by Dr. David Lakey, who is the Associate Vice Chancellor of UT Health -- Public Health program. And if you see New England there, basically minus Maine, it could fit in to what we're talking about with rural East Texas.

And it's an area much the same. It's a forested area. It's got a rural population that's spread fairly evenly across the area without that many major urban centers in it. So that's kind of the area that we're looking at.

If you look at the County of ranking for health outcomes, this is from a couple of years ago -- well, from one year ago -- and you look at the darker areas, meaning that health outcomes are poor in these locations.

And so this is an area where, even compared to Texas, you'll see a 65 percent higher suicide rate than in the rest of Texas. You've got an older population. The statement that was

made earlier about isolation being a greater killer than smoking really hits home here, because you have a lot of older adults having isolation.

You have a problem with education in this region, and the project that I'm on was actually built out of the education need that there is, actually, an aversion that's been identified in much of this region to higher education. Why? Because young people gain a higher -- college degree, they leave home and they isolate the family.

Mom and dad, grandmom, granddad are there to take care of themselves. No one wants to face old age that way. And so you see these problems in this region.

We have a number of issues. We're trying to do a network that was built upon microwave, and so 15 years ago we received a nice allocation from the state -- 20 plus million dollars -- to build a microwave system throughout east Texas. And it was to connect the major

universities -- major -- the regional universities here, and to connect the community colleges here and to provide services to those.

We built on top of that the East Texas Interactive Healthcare Network, which basically tied telephone based services, T1 lines, into these microwave systems to try and get services out there. We played with UTMB to do telemedicine services, with other groups to do this with various levels of success. Only in the past few years have we really started to see success in this region.

We had the Underlying Wireless network you see there. You're going to hear from the Burke Center here just in a minute. And what we have been able to do, and I am just so grateful to the FCC for this, because we're gaining about 50 million dollars in subsidies, annually now to support both medical programs at the colleges and connectivity for rural psychiatric centers in our region.

Burke Center, you'll hear from in just

a minute. They are one of our first major deployments. And you see these areas that go from Jasper, Texas -- not that far from Houston. You really just get into rural outreach on the Texas/Louisiana border.

Going up to Lufkin, going over to little towns like Crockett, and in many cases our telepsychiatric unit there provided an anchor institution. It's the first fiber that's gone into those communities.

So it -- it's expensive. I'll see bills each month for that gigabit connection anywhere from $30,000 to $60,000. And the FCC program, of course, subsidizes that, so I pay what I would pay in Austin or Dallas which is absolutely wonderful.

Ideally, it's getting internet to those who communities and fibers to those communities, and it's being capitalized by those high end charges for the first five years. And so that's been a really nice thing. And you see the outreach there.

Our second project was a similar center called the Andrews Center that works outside of Tyler, Texas, going to about four rural counties around it. And it tied into -- we actually had a B-type grant, grant for those of you who know what that is. A stimulus grant in the northern part of our district, and it ties into that.

This is what our map looks like now and we're getting ready to add about 10 more sites going into northeast Texas this next year with Community Health Core, another group that's up that area. But that's the kind of help that we're getting. We've been working on a long range plan. We're doing leased services now, but I know that in the future that's not going to work for us.

You know, those of you who are in urban areas in Houston, you know that you need dark fiber. You need access to unlimited growth in the future, so we're trying to map out a plan to do that in our next round. We actually looked

at what we're spending. Now we're looking to be spending about 250 million dollars over the next 10 years.

Well, we can build quite a network for about 125 to 150 million to serve the region and hopefully find commercial partners and other folks, business partners and non-profits to work with us in that. And that's the idea of the FCC's rural health program.

It's to build out that way, find key partners. A lot of FCC money is going to E-Rate which serves public schools. We've had an issue that we haven't been able to necessarily combine our health connections with our public school connections. And we've got to solve that. I'm hoping forums like this and our attorneys in the audience will help us to come up with good solutions like that.

But with that, I'm going to go ahead and wrap my section up. We'll come back to it, but I'm going to introduce Susan Rushing. Susan is the CEO of Burke, which manages exactly what

we're talking about today, psychiatric connections throughout a large rural swath about the size -- I don't know if it covers Massachusetts --

MS. RUSHING: Yes.

MR. SLIMP: But at least --

MS. RUSHING: And Rhode Island.

MR. SLIMP: And Rhode Island together. So quite a section. Susan, go ahead.

MS. RUSHING: Thank you.

MR. SLIMP: And will one of you pass the baton down to Susan?

MS. RUSHING: Let's see if my slides are there.

MR. SLIMP: You've got to -- it's a new slide show.

MS. RUSHING: Well, let me go ahead while he's getting that up there. I'm with Burke. Mickey's talked a little bit about the connectivity that we have. But we serve a 12 county area. It's 11,000 square miles, 400 people, and as he mentioned, we are a health

shortage area in an area of the State that's older, and poorer, and less insured than Texas as a whole.

I want to tell you a story about how we have used technology to really be a game changer for us. We've used telemedicine since the year 2000 in order to extend our physicians and get them out from behind the windshield and in front of people and use their time better.

But about 2000 the last of the psychiatric beds that served our area closed. All health -- all the free standing psychiatric programs in our region went out of business. They couldn't make any money. It wasn't a business model that worked for us. So when those beds closed, we didn't have a place for people in crisis to go.

Go to 911, and after 911 you remember there was a -- sort of an economic downturn in the United States. Texas felt that hard. We had budget deficits. They cut our funding so we had to cut services. So that on top of a lack of

inpatient beds really created a problem for us.

The real turning point came in 2005 when hurricane Katrina hit next door and we had people coming in to live in our area who had been traumatized. Within a month, hurricane Rita hit and we were victims of a disaster.

You can predict about six months after that the people were at their wits end. We saw a surge in the demand for crisis services in an area with no surge capacity whatsoever. And what happened was we inundated both law enforcement and our local hospitals with people who needed help, who needed psychiatric help and there was no appropriate place for them to go.

We had people boarding in the emergency rooms. We had people diverted to jail who were mentally ill. We reached out to our county governments, our local hospitals, we said the cavalry isn't coming to rescue us; we've got to figure out what we can do.

So what we had to do is to decide -- since we knew that building a psych hospital

wasn't a sustainable model that had been proven in our area -- what would work? What would work for us?

What our stakeholders wanted was a place where people in crisis could go and get the help they need and get them out of the emergency room and let law enforcement return back to their home counties and do public safety things. So telemedicine was the answer for us.

And what we did, we reached out to JSA which was mentioned earlier, it's a telemed practice here, they specialize in emergency psychiatry and created the Mental Health Emergency Center in Lufkin, Texas, the first free standing rural emergency observation program for people who are in mental health crisis.

And the thing about it is, it is staffed 24/7 with psychiatry provided via tele-medicine. We have nursing staff; we have mental health professionals there.

But, we are able to see and treat 70 percent of the folks who present in crisis to us

that we would have otherwise sought a psychiatric bed for successfully at this level of care. And we are diverting about 30 percent into psychiatric inpatient.

Mostly, these are people whose level of acuity is such that they need a secure setting or they have a co-morbid medical condition that requires their hospitalization for other reasons. So it's really worked effectively for us.

Here's a few statistics about it. Length at the stay is less than four days. We do follow up. And we've been able to divert -- we've added with 1115 funding medical detox to that component. So -- so we've expanded what we're able to do.

Based on that, Burke has doubled down on our telemedicine. We've been using it for our psychiatric services, but we have been adding to that. You can see our trend lines for the use of telemedicine visits have gone up in the last few years.

And we have more plans. We are now in

additions for emergency serv -- in addition to our emergency services and our psychiatric staff, we are adding intake to our telemedicine offering so that we can do open access. If you need an appointment, show up at your area clinic. We will see you via telemed and get an assessment done.

And we are also adding the first psychiatric visit to our telemed offering so that can be -- we can move our wait for first doctor visit from four months to 10 days. So adding that has really been transformational for us.

We want to do more. We want to get outside the four walls of our center and add more home based services, but here's the rub. The folks that we serve don't have broadband. Many of them don't have smart phones; many of them don't have cell coverage. They don't have WiFi in their homes.

We can go out there and bring our MiFi devices, but if there's no coverage, we're sort of dead in the water with that. So that's a

problem for us. The other issue is the Texas -- Texas Medical Board allows physicians to do a home visit for mental health, using the patient's home as a clinical setting. It's allowed, but it's not reimbursable. So those are some things that we need to -- to work on in order to make this move forward.

We're starting a first episode psychosis project. This is addressing young people. I think the use of apps and online resources for them will be great. So we're looking forward to finding a suite of applications we can use with that population. So I'm going to wrap it up.

MR. SLIMP: Thank you, Susan. And Susan if you'll pass the baton down this direction to Tim. And let's give it another try and see if we have Laura back on the line now. And you can bring her up.

MS. GALBREATH: Hi, I'm dialing in on my cell. Is the audio better?

MR. SLIMP: Much better.

MS. GALBREATH: Great.

MR. SLIMP: Laura go ahead.

MS. GALBREATH: Do you want me to go ahead?

MS. RUSHING: Yes.

MR. SLIMP: Please.

MS. GALBREATH: Okay. So I'll make mine I think really quick. I think at a national level certainly we're really excited by the innovation that's happening across the country. I think that all agencies are coming together to develop tools to support stakeholders and providers and communities to do this good innovation and work that we're seeing good outcomes.

I think certainly there are unique challenges that we need to think about. A lot of the work that we're doing, I was saying is around the framework that we're kind of focused on is around, how do we support the delivery of care?

And thinking about the use of broadband-enabled health solutions for that

delivery of care. How do we support, kind of, what we call treatment extension or treatment extenders in using technology to help support self-management and then really assisting with care coordination.

And I think some of the -- just a couple of things to think about is when you think about the delivery of care, if we have some of this wonderful technology but we're also experiencing quite a -- a workforce shortage.

And so there are -- this is a wonderful tools to support that, but then we also have to think about what are the competencies and training for staff to be able to utilize these technologies? What is the appropriate mechanism given the clinical need? You know, is it emergency services as you're hearing from Burke that really kind of responded to that need that was in the community?

You know, and then, for -- as we think about engaging as a treatment extender around self-management, there's so much there around

providers that are concerned around, well, what -- what are the new ethical requirements and needs and questions are going to be coming up as we take advantage of the technologies?

How do we allow people some experimentation to support self-management and care coordination? But also knowing that, you know, we really want to think about what's responsible levels of care and safety. So these are questions that are coming up at kind of a provider level.

And certainly, how are we tying these technologies and resources into actual outcomes? I especially think when we think about self-management, we think about the proliferation of apps. And while there's certainly wonderful apps out there, well what's the evidence base that's been used to develop the app as it relates to clinical care? And then, certainly, what are the unique needs of the population being served?

Accessability. We had a project where most of the folks had a cell phone, but they

didn't even have data plans. They weren't smart phones. They didn't have great cell coverage or limited minutes. Yet, they were really interested in how to use these tools.

And so, providers are being creative given some limitations. So I think, you know, certainly that the digital divide that we talk about with -- especially our -- our impoverished communities and our rural communities, it's really important to just acknowledge and how do we take advantage of these opportunities given that.

And then, just around care coordination I think there's some great efforts going on at a federal level to really support this. I think it's one of the biggest questions in confidentiality when we talk about the behavioral health. People want to know how are we protecting it, but also how is it with the current regulations around things like 42 CFR and HIPAA?

How is that a barrier to using the

technologies when it comes to mental health and addiction treatment? And so we are, you know, there are new guidelines in terms of stuff coming out for 42 CFR, but I think there are still many unanswered questions about how do we ensure that there's good processes in place for sharing information in that way.

Because through technology we could have malware, lots of things that could crop up that really make a lot of providers and stakeholders very risk-averse, if you would.

I just want to share one stat because I think we're hearing a lot about innovation. I think there's a lot more we can continue to do to educate and engage people around these wonderful opportunities. We did a Webinar and surveyed about 200 providers and asked them kind of when it comes to using health apps, in particularly, in care delivery, where were they?

Only seven percent said that they were actively using some kind of apps in technology as part of their -- in the healthcare setting. 10

percent said they were just getting jump-started. Almost half said that they were familiar but they really needed more information about how to make it happen.

And then 37 percent said that this was a completely brand new idea to them, that they had never thought about how do I use these technologies -- these wonderful innovations to support the care that we're providing.

So huge opportunities, certainly some barriers that we're trying to address at the federal level. And I'm going to stop there so we can get through the panel and have some interactive Q&A. But really looking forward to continuing this conversation.

MR. SLIMP: Thank you, Laura. I'll let you know that even in Texas we've trained our technology to have folks coming in learn to speak more slowly.

Tim -- Timothy Elliott, Dr. Elliott is with the Texas A&M Telehealth Counseling Center. We'll let you share what you have.

MR. ELLIOTT: Well, excuse me. Thank you. And thank you for inviting me to be here. For several years now we've been involved in the development of the Telehealth Counseling Clinic. You'll understand the name much better as we go along here.

But it was predicated on the notion that we have needs in the academic training environment that can address by -- by meeting those needs we can address some of the mental health disparities that we see in our communities. And specifically, we've been collaborating with colleagues in the School of Public Health to prepare our students and to work with local stakeholders in meeting these needs.

I think it's important -- we've heard the term health provider shortage area. What you see here is a map of Texas concerning mental health provider shortage areas. And we in Texas have over 67 percent of all licensed clinical psychologists in five metropolitan areas.

Ideally, this is probably we use the

term, but we use the numbers to reflect also what we would like to see in psychiatry; about one provider for about 30,000 individuals.

Throughout Texas outside these five metro areas there is one provider -- one psychologist for 86,000. And in the counties you see with diagonals there are counties without a licensed psychologist.

Incidentally, this was taken from the 2014 report entitled Mental Health Shortages/Workforce Shortages in Texas that was given to the 83rd legislative session written by the Department of State Health Services. If you don't have that document, it's a very important document to have, let me know if you would like one from me.

In the Brazos Valley. all of our counties are mental health provider shortage areas. Brazos County has psychologists, but we don't have enough for the population that we have. What we do, however, working for the Center for Community Health and Development is

conduct health surveys throughout the -- the Valley.

Dr. Jim Verdun has headed this center for many, many years. And that information has been spooled back to county leaders. So for many years, and as a matter of fact I think this goes back to the year 2001 or '02, that they have an assessment, an ongoing documentation of their needs based on the surveys that come back.

And from that, we know and county leaders know that mental health services are used. There are many barriers, of course, access is the greatest disparity, and individuals having problems with transportation back and forth to Bryan College Station.

But as you saw on the previous slide, we simply do not have doctoral level providers living in these areas, and frankly I don't think we're going to see any change in that anytime soon.

So using telecommunicative long distance technologies is certainly the wave of

the future for us to meet this need. But how do we go about doing this? We've been discussing -- I don't want to criticize it as top down, but we work more from the ground up level.

So with the Center for Community Health and Development and local constituents and stakeholders, this information is spooled, discussed, and local solutions are then decided. This is a classic model in community psychology that certainly permeates much in through public health now. Working with local leaders -- and this would not happen without local leaders -- we go into each county, work with the data they have, what their needs are.

The first county to collaborate with us was Leon County, that's Centerville. For those of you who drive the interstate between here and Dallas, that's Woody's Smokehouse; the number one employer in Leon County. We know it well.

But we in the Counseling Psych program were identified as a potential solution to

provide services. And I credit Judge Ryder and his colleagues there in Leon County for getting the funds to build the Leon County -- building for the Leon County Resource Center.

We then, developed a -- from funds from HRSA using T1 lines, doctoral students under the supervision of licensed psychologists to start providing services throughout the week to individuals there.

We've been there since 2009, so most of the papers we've published and data we've published come from that site. I'll tell you more as we go along here, because we have since opened up -- that's how we first looked by the way. That young woman there was my doctoral student. She is now the Clinic Director and licensed psychologist of the TCC.

In 2013, Madison County was a little jealous and wanted their own telehealth service. We were able to procure another grant from HRSA. We opened up there and what you see here is again county officials, and colleagues, and students

who participated.

What we do includes routinely visiting with the site and with individuals who were there. Each site provides a space and there's some hookup fees involved. Most of the other costs now are covered by our 1115 Medicaid Waiver Project which permitted us to expand to Health For All, the low income clinic in Bryan, Texas.

But also to a facility provided by St. Joseph's Hospital in Navasota, over in Grimes County. And in a very unique partnership with Faith Mission in Brenham working with Washington County and, in fact, Judge Brieden's been one of our biggest supporters.

And what I think it's important for you to know here is, what some of our accomplishments have been. We are able to provide services both in English and Spanish. We've had to date over 4700 sessions, over 1900 sessions in the last calendar year. And to my knowledge, we are the only accredited doctoral training program

in psychology that operates its own telepsychology clinic that's led us to reports on outcome research.

We've also have had over 30 students train with us. Some now work as telepsychologists in the VA system, in the Department of Defense. Ours are the only students who were able to go out and say that they've had this experience. And that includes for some of them now, opening up their own private practice and providing telepsychology services.

Incidentally, we use the term telehealth because of stigma issues. We're in resource centers. We're in Faith Mission. The mental health issue even though we all know how much these costs are to counties, to taxpayers, and to -- to our local institutions. The issues are such that telehealth is a much better rubric for us to have and for people to feel more comfortable with.

Connectivity, you should know this

issue. I haven't heard this issue spoken. This is just a hard sell for county governments. We initially started with T1 lines, but with deregulation the costs became astronomical. Previously, we were working through at about $1,000 of cost for each site, but we've had to go to Business Class.

Excuse me, we've had to go to Business Class because of these costs. Up to a thousandth percent and these counties could not afford these costs. So with Business Class, comes some other issues including the timeliness of paying the monthly bill. It's signed by each Executive Director. It has to be approved by a Commissioner's Court. Also issues with peak time including a slowed signal.

The other issue that we have faced in meeting our metrics. Just in general we can get the numbers, but we see chronically ill people. I want to impress upon you, when you are dealing with health shortage provider areas. We are working with people, the majority of our

clientele are women. Then we have a lot of people who have been in the mental health and the mental retardation system for a long time particularly for chronic schizophrenia or bipolar.

These individuals do not necessarily respond well to treatment even though we see a reduction in depression over four sessions. There problems are chronic, lifelong, and they have many co-morbid health conditions. And what we've seen in our outcome research is that those with more health conditions, pain, diabetes, hypertension problems, others, they are the ones who become more problematic in response to treatment over time.

It's also very difficult for us to think about evidenced based treatments when you have several co-occurring problems all at once. And so we think in terms of lifestyle management, life skills management, in addition to treating the presenting problem.

My times up. That's about as fast as

I could talk, you all. Thank you.

MR. SLIMP: If you'll pass that to Travis.

MR. ELLIOTT: And so, now we're going to keep going west back out to Texas Tech University. Travis is going to share some information from the Regional Extension Center there.

MR. HANSON: Thank you. I'm with Texas Tech University Health Sciences Center. One of the programs that I run is the West Texas HIT REC. The project is the Innovative Healthcare Transformation Division and it includes all of our Health IT programs, including telemedicine.

I don't think there is any slides that are up for this, but, I can talk about some of the projects that we do, mainly the ones that relate to mental health. We do have the Telehealth Resource Center that Brian Henry spoke about, about an hour ago. That's one of 12 telehealth resource centers in the country and

that covers Texas and Louisiana and that's for education and outreach.

We host correctional managed care contracts and telepsychiatry contracts where we help keep prisoners in prison while they are being treated rather than being transported to the hospital, which cuts down on cost and on the safety of those who are working with them.

The main project that I'm going to talk about is the Telemedicine Wellness Intervention Triage and Referral Project. This is funded by the Governor's office Criminal Justice Planning department.

And the main focus of this -- and I'm just going to forward to -- I'll start with the map. We do cover the 108 westernmost counties of Texas. However, for this project, we're focused on these rural areas; these are cities that are outside of the bigger cities if you can call them big cities in west Texas.

But they focus around Lubbock mostly. Because that's what our funding was for. And

what this does, it allows our project to focus on junior and high school students who are in school, who are exhibiting dangerous or violent behavior to themselves or to other people that is somewhat of immediate threat to themselves or the school safety or the people there.

And they contact us after we train them. The school systems are all trained by our psychiatry services and by our licensed -- by our LPCs, our Licensed Professional Counselors.

When you have a student that exhibits this behavior, they call us, we go out there -- our LPCs go out there on site and counsel with the student with the parent there, and ascertain whether or not additional treatment is necessary.

And the first year we had 47 referrals. The second year, we had 35 referrals and this year, we've only had about 25 referrals, which has been good. So it's gone down, we've see the trend go down, but we haven't added more school districts and the need is there.

And the good thing about this project

is, it's getting these students that have a immediate problem and they're deemed dangerous and we're able to get them assistance with their mental health issues.

And that's when we do help, is when it's mental health, if it's not, then we call the criminal justice system. They take care of the child -- we'll call their parent and the take care of the child.

But, what's good about it is, we're able to triage them on site of our telemedicine capabilities where we link up to Texas Tech and get a psychiatrist on the line at the moment that the student is with the LPC.

And at that point, our psychiatrist is able to ascertain whether or not more treatment is necessary, where a referral is needed to be made to the primary care provider, or if the child actually need to be removed from school and taken to a hospital or somewhere else to get them the help that they need.

And we've seen a trend over the last

few years that we've been doing this, is that students that are a part of this program -- first of all, their getting the help they need and not just getting a citation or an arrest or something that's not really going to be there to help them long term. And their actually seeing progress and several of them have been reintroduced back in school and are doing well. So that's good to know. And we hope and we think that we have been also able to prevent dangerous situations from occurring at school by identifying these problems as they occur.

And our referral process looks a little bit like this. First of all, before we get to this point, we train -- we go on site and train the school districts. We're in 10 different independent school districts within rural west Texas.

We train the staff to know what to look for because sometimes kids are just going to be -- have a behavioral problem, it's not necessary that we need to triage them for

immediate harm to themselves or somebody else. So they're trained to know what to look for. And when that happens, a referral is made to us, like I said, and then we do the assessment.

And a lot of them are triaged by our psychiatrist and it's been a good program. Our psychiatrist is loving the program. The problem with this project in west Texas is, there is not a lot of child and adolescence psychiatrists in the area. There's actually a shortage of them. And that's been a problem because the Governor's office wants to expand this program and we have the availability to expand this program to many more west Texas cities, but we need to make sure that the psychiatry is there and available. And we also need to make sure the connections are there.

We haven't had any huge roadblocks with broadband. We've had slow broadband. We've had some choppy connections, but for the most part, a telepsychiatry visit is pretty simple. It's a laptop, it's a web cam, it's a microphone

and the connection to Texas Tech is strong. So there isn't any issue there.

But for the rural cities that are outside of the more urban areas that we identify, that might not be the case. We have tested it a little bit in the field, speaking like way up north and towards the border of New Mexico where there's a need. It's not as strong.

So this is a good conference to identify that it is needed and I appreciate the time to be here to discuss these issues. So thank you.

MR. SLIMP: Thank you, Travis. And now to finish us up, my bookend, on the other side of the panel, Yahya Shaikh, is the senior advisor for Connected Health with the FCC. And Dr. Shaikh, if you will.

DR. SHAIKH: Well, thank you so much for everybody being here. And thank you to the University of Houston for hosting us and being a collaborator in this forum. So it's been really gratifying seeing and hearing about all the

different tele-site programs that have been happening across Texas.

One of the things that I want to mention is, when we think about mental health and behavioral health, it has a unique position in relation to broadband and health. So we can think about, for example, chronic conditions and we can think about surgical conditions, but, mental health is unique, and I'll tell you why.

So mental illness, if you consider what mental illness is, and if there is a psychiatrist here. If you think about what mental -- including what assessing mental health -- treating mental health. What it is is, basically, an external manifestation of some internal state that an individual has.

If you look at how the information age has progressed through connectivity, when you think about the benefit through the internet, I don't think that there is any other discipline in medicine that have benefited more passively than psychiatrist.

I'll tell you what, if you look at what Google does, if you go to Google right now and you type in a search term, right? It can try to predict your intent and it can serve up results based on what they think your intent is.

If you look at what Amazon is putting out, for example, its AI, Alexa, where you can communicate. You look at Microsoft Cortana. You look at Google Smart Home, right? Their entire machine algorisms are based on predicting and understanding what the person wants. And serving up what that individual wants in relation to other individuals.

If you go to Netflix, and if you go to Ebay or even Amazon store, and you try to buy something, once you purchase it, it will suggest the next item that you might want to suggest. It predicts -- tries to predict your behavior. And it suggests what you want before you might even want it, right?

So if you think about how these are actually an attempt to understand the internal

states of individuals, we see that the private sector has been engaging in the psychiatry model and the mental health model in a very profit-driven way.

But then, if you think about how that data and how that connectivity is informing their business models, we see that there's something really powerful there. And I want us to be able to think about connectivity and mental health beyond virtualization of physical services.

If we can think about, for example, sensors and devices in a connected environment, those are actually possibilities to expand therapeutic options and diagnostic abilities.

For example, in psychiatry, if you're going to treat a person for schizophrenia or psychoses, you do have to follow up in order to see how the conditions are. How they set symptoms, do they have ratcheting or do they have -- are they responding appropriately to the treatment that you prescribed them, right?

Well, there are sensors now that can

actually detect movement disorders that can be deployed inside the home. In fact, your smartphone can be used to detect Parkinson's symptoms.

A smartphone can be used to detect ratcheting. And not only the sensors be deployed, but the device within a connected environment can feed back to a person in order to improve their symptoms.

For example, the Commissioner eluded to an application that I think the VA was developing. Where if there was a person that was having a substance abuse issue and they want to be able to, for example, avoid triggers in their environment, for example, going to bars that they typically frequent, then what that would -- what this particular app would do, is you record a message prior to your engagement to the app saying why you think that app is not -- why you shouldn't be engaging in that behavior.

For example, you can say, "I really want to break this habit, because I hate the look

in my little girl's eye when I come home all drunk." And that uses geo-location technology so that when you are about to approach a bar that you normally frequent, because you have a -- the geo-location of all the other bars in the town.

If it detects that you are about to approach a bar, then that app that you had engaged in, it will automatically kick in that reminder in your own voice. So it's a very powerful enforcer of what you want to be able to do in your intentions.

Data had the ability in a connected environment to personalize care. So if you think about depression, not everybody responds to therapy in the same way. There are some folks that respond to medication in addition to additional therapy.

And not only does data in a connected environment of personalized care, but it contextualizes care. So for example, folks who have PTSD within the VA environment, what are the triggers in their communities that might -- what

are the time frames, what are the holidays or what are the days and months that are anniversaries, perhaps, a platoon having -- you being the sole survivor of an event that happened to your platoon?

So these are things that data can help you detect, in terms of care. So what I would encourage us to do, because my time is almost up. What I encourage us to do is move beyond the paradigm of virtualizing physical services.

But imagine a model within a connected environment. What would it look like if we have sensors that are already deployed? Or devices that are already deployed or data that can inform us? And think about how other companies are pushing their models forward using these kind of technology-enabled services.

MR. SLIMP: Thank you very much. And let's give a round of applause for Dr. Shaikh.

COMMISSIONER CLYBURN: Well done.

MR. SLIMP: We would like to open this up for questions from the audience. Roger, I

don't know if we have any coming in from our online, too, but we may have some you can share in that direction. I saw a question, I thought, from up in this corner.

Okay. Well, our audience did quite well and our panelist did quite well. I wanted to comment, I saw an article on Time Magazine, it had on the cover the coming of robotic cars. And my first thought is, how are those going to perform in rural Texas.

And I thought about, really, how there is an alignment here, because, we're going to have to saturate the nation with broadband. We will not be able to have empty gaps in 10 years. And rural health is exactly the same way.

If we're going to serve the needs of the population across the country, we're going to have to saturate areas like we did with rural electricity 60 years ago. And make sure that broadband, not just minimal broadband like we're talking about reaching with a T1 line or just a couple of kilobytes. But we're going to have to

have significant connectivity.

Not only to every house, but just about to ever pine tree in every corner of the road in the country. So thank you all for being a part of this today and sharing with us and thank you to our host and I think it's about lunch time.

MS. WINNIKE: Thank you so much to our panel this was a really wonderful discussion. And before we break for lunch, we have one extra interactive demonstration for you. And I would like to bring up Professor Ron Scott to do the introduction for our virtual demo. And thank you Laura, you can disconnect. Thank you.

DR. SCOTT: Hopefully we will soon have Dr. Henry Chung on the screen. Dr. Chung is Vice President of Care Management Organization of Montefiore Medical Center and associate professor of Clinical Psychiatry at the Albert Einstein College of Medicine.

Well, while they are bring him up, in that role, he provides medical leadership for

care management activities for over 300,000 patients in value based programs. More importantly today, he's strategic medical advisor for a company or an organization called Big White Wall.

Big White Wall is an innovative on line early intervention service for people in psychological distress that can be accessed through an app -- a smartphone app or through an internet browser. I have it downloaded on my phone, but, unfortunately, I don't have the code that allows me to get into access it fully.

Dr. Chung, welcome. I just started your introduction. And today, he's going to talk to us about the in-roads that Big White Wall is making in meeting the mental health needs of Texans through connected technologies.

Dr. Chung, I assure you I gave you a sterling introduction. So welcome to our program.

Can you hear us?

DR. CHUNG: Hello?

DR. SCOTT: Dr. Chung, I was just saying, I gave you a sterling introduction which, unfortunately, you missed. But we welcome you to our conference and look forward to what you have to say today.

DR. CHUNG: I appreciate the great intro even though I didn't hear it. And I apologize to all of you for not being there with you. I had injured my foot unfortunately, and I'm in a cast. I would show it to you to prove it to you that I'm actually in one.

It would actually cause me to fall back on my chair, so I'm not going to do that.

Let me go ahead and try to pull up my slides and see if I can get my slide set going. Can everybody see my slide at this point?

Okay. Hold on. I'm going to have to do this. Is it showing? So let me go back to functionality as provided. All right. And now I'm going to go to my presentation.

Okay. How is that?

UNIDENTIFIED MALE: Good.

DR. CHUNG: Okay. Great. So let me just -- first of all, I know I'm between you and lunch, so I'm going to have to be very very precise. But I just want to extend my appreciation to the FCC and the organizers. I know that when I was approached by the FCC, I was really presently shocked to hear about the FCC's interest in health care.

And I think that this is incredibly timely. And I'll talk to you about a program I'm involved in where I'm the strategically medical advisor, called Big White Wall. And I'll show you some slides. I won't be able to do a full virtual demo because it's a lot of private information.

I'm just going to give you some flavor of how marshaling the support of a peer community can really help improve people behavioral health symptoms. So the product is called Big White Wall. And it's been available in the United Kingdom for about five years.

Only in the last couple of years in

the United Kingdom, it's really taken off. Such that, it's broadly available to about one quarter of the United Kingdom population.

Here in the U.S., the Big White Wall decided to come to the U.S. and tried to implement this product in the big market which is significantly more complicated. I'm sure many of the previous speakers have talked about some of the challenges related to the U.S. marketplace as it relates to these types of virtual solutions. But let me go through, kind of, what this offers and we can talk about some of the challenges during the Q&A period.

So the Big White Wall is a -- literally, a virtual wall that is designed to allow patients and customers and consumers who have mental health-related needs to come on virtually at any time 24/7 to get support from peers, fellow consumers, in a moderated -- clinically moderated format. Now, that's very important.

When I say clinically moderated, what

I mean is that, unlike say, a lot of blogs and Facebook communities where you don't have clinical moderation and you could have really unfortunate situations where people are, perhaps, giving people inappropriate advice or trolling or abusing or bullying, all of those kinds of situations. That does not happen when you have clinically trained monitors who are supporting the conversation, as well as helping people one on one who are really in a lot of trouble.

So the wall provides validated health assessments, the PA29 and GAD7. PA29 is for depression and GAD for anxiety. It allows, as I said, for people to connect to other community members, either as a group or one on one.

It allows people to use what we call "useful stuff," which is curated materials for behavioral health. As I said before, it's part of a peer community, which I'll show you some samples of.

The Big White Wall fundamentally is unique in the sense that it allows creative

expression. There are people, many people, who prefer to express themselves in artistic ways or in what we call bricks, and I'll show you some examples of that. And that can foster a dialogue.

And then you can take courses, which are organized along the lines of clinical -- cognitive behavioral therapy so that people really get evidence-based exposure to depression management or insomnia care, which they can do on their own, usually with a group of people working with them.

Let me go into what this is all about. We're going to use some terms here that's unique to the Big White Wall community. Talk about some online discussions, so that's just simply a British term that we carried into the U.S.

It's the online discussions that can occur openly in the community, or they can occur as part of a closed group, or they can occur one-on-one with individuals or with our wall monitor or a wall guide.

Our support network allows people to do creative art and writing therapies, as well as mood tracking, tracking of mood, as well as setting goals for themselves in terms of their level of improvement in what they'd like to shoot for in any form.

Useful stuff, again, is the patient's educational materials, which includes validated self assessments. Many insurance plans really want this type of information. It helps them with their quality metric. And then guided support as I talk about is sort of asynchronous courses that people can do on a two to six week basis, usually with the support of a wall guide or a monitor, as well as the support of other peers who are going through the course at the same time.

Here is a login screen. We've recently improved this. But this is literally the screen that we had last month that's now been redone. But this is what people enter into when they get into Big White Wall. Currently, in the

U.S., it's a paid subscription, usually provided by a sponsoring health plan or a sponsoring provider. That's the typical model in the U.S.

And this is the homepage. This is going to be a glimpse at how people can personalize that. The homepage allows people to create things that they are interested in. So they can decide what kinds of topics they're interested in, what kind of threads they would like to follow. They can document what their mood is at any point in time that they log on. And this can be to share with people on the wall, in terms of what their mood is. If they don't want to put words to it, people can support one another.

Like Facebook, they can create a public profile for themselves. But what is key here is the anonymity piece. I should really talk about that for a second. Everyone who comes into the Big White Wall creates an anonymous identity. This person is called Trinity3. It's an anonymous identity.

And the reason we do that is because it lowers stigma. People don't know who the actual people are that they're interacting with. They can describe themselves. But we tell consumers as part of the house rules that they are not supposed to reveal any identifying information like where they live, what region of the country they're in. Anything that could lead someone to look them up, do a Google search or something along those lines.

We think that protects everyone. It also allows a level of spontaneity and a level of discussion at an extremely high level. And here on the bottom of this screen or in the middle of the screen, we have bricks.

These are, again, artistic works that people can do or write into. It really briefly expresses what people are thinking and talking about. And people can choose to respond to these bricks any time as part of an online discussion.

Or if they don't want to do a brick, they can just post an online discussion and not

do anything artistic. So it really allows a lot of room for people to utilize the platform.

This is an additional sort of level of personalization. As part of registration, people can talk about what kind of topics they're interested in. And they can change that at any time.

By doing this, they can then get materials provided to them, bricks that are related to these topics or online postings that are related to these topics. And they can quickly look at what they want to read or learn about or respond to.

And again, I think this is very unique. We're really talking about marshaling the power of peer support in a virtual way. We know that peer support works. It's evidence-based. But it's very, very hard to scale. This allows a scaling of something we know that is evidence-based, but also provides a lot of benefits.

Like here are some sample bricks, Big

White Wall bricks. The wall really comes from the notion that people have a blank canvas, and they can use that blank canvas to create a new reality that hopefully is more positive, but also if not positive, they can get help in terms of sharing their feelings.

This is one example here, if you can read that. It says, "Can you find hope with a bleeding heart?" And a photo here of some flowers. It looks like it's partially frozen. You know, really sort of -- really quite poignant, if you think about it. And the wall is full of these kinds bricks and artistic work.

This one is a photograph here from another wall. It says it will all be okay. And it's expressing something that folks are feeling.

These are probably a little bit more disturbing. This is one of a person who is -- who is potentially demonstrating that on a day-to day-basis they're putting a positive effort and spin on their day-to-day activities, but in the inside it feels like something deathly would like

to emerge. A little bit more disturbing, provoking a lot of comments from fellow peers.

In this one, this person is struggling with smoking and tobacco use. We have other images that relate to alcohol use and substance use. I'll just give you a sense of the type of material that people are very honest about.

Moving on quickly, this is the talk about. This is online postings. And this is one example of a talk about. And if you scroll from the bottom here, this person posted originally and said, "I've been away from the wall for some time. Things have been going pretty well, but today I feel slammed. So I've decided to reconnect with the community."

And then, very quickly, if you have a robust community, people are coming on board, reading things and hopefully supporting one another.

When people are not supporting one another, our wall guides and our wall monitors intervene to try to keep the momentum going so

that people don't feel alone. That's really the key thing. We don't ever want members who post something to feel alone.

This is an example of an assessment, the PHQ-9. They've taken a PHQ-9 test. It's a maximum score of 27. High scores represent a high level of depression. They took the test on the face, and then we provide them some automated advice, given their level of scoring what they might want to do. And then at the same time we also provide them with resources based on their score.

So the idea is, look, if you're really scoring, as this person is, very high for depression symptoms, we want them to utilize the resources on the platform but also to recognize that they may need to seek help professionally.

Now, I mentioned the wall guides. Wall guides are very active from the standpoint of governance of this. And again, many of you have looked at blogs and looked at where people post things, you recognize some of the obscene

comments and some of the negative energy that can occur. We really don't want that to happen on the Big White Wall.

And so wall guides, who are clinically trained, really moderate any content that is, we feel, triggering to the community or could really provide more harm. So we can remove content and let people know why we're removing the content.

We can support and encourage members and keep the conversation threads going with some clinical observations, but we're not doing clinical treatment. We're providing clinical observations to help the members to help themselves. We're trying to foster a sense of independence and autonomy.

Although folks are in this virtual community, remember they have real lives to live outside of the community. So these are not avatars. We want them to go outside and to try new skills and to really practice the things that they're learning and to use the advice that peers are giving them.

And we also have the wall guides facilitate some of the online courses. But most of all, what we do is we assess member risk. There are people that come onto the wall who are suicidal. There are members that come onto the wall who are really, really struggling with impulses.

And here our wall guides intervene very much in a one on one way and try to get them to use the resources on the wall and then also try to get them support, life line support, if it's really necessary, escalate them to a 24/7 resource like the National Suicide Prevention Hotline. This is incredibly important in terms of the work we do.

This is an example of the PHQ-9 scale. Let me just do a quick time check here. Okay. This is a PHQ-9 scale. This should be familiar for any of you who are doing work in the behavioral health arena. These are the symptoms of depression. And people rate how often they're feeling these symptoms over the past two weeks.

A score of ten or more indicates some level of abnormality. And a score of fifteen or greater would indicate clinical levels, where most professionals would say someone should get themselves into some form of treatment.

Now, why do I bring that up? We've done some interesting studies around word analysis and we want to -- we've been able to demonstrate that we can actually predict a level of depression severity based on words alone.

So if someone doesn't take the test, because only a third of our community members take the PHQ-9 test, but you'd like to assess how severe people are, we can actually design a computer algorithm based on the number of words that people are posting, either on bricks or with the online postings.

And if they write roughly 20 words or more, we can predict whether someone's postings indicate severe levels of depression with an AUC, or an area under the curve score of .87, which is quite good at discriminating whether someone has

severe depression or not, based on scores alone.

Which is really, kind of the way I'm sure other vendors and other folks are doing on virtual platforms now, which is looking at how you detect depression without having to go through validated scales. A tremendous advantage.

Now, these are some obvious words pairs that connote high PHQ-9 scores, just to give you an example of the kind of words that come up in posts that connote high PHQ-9 scores. They seem somewhat obvious, but when you have lots and lots of people writing content, you can't review -- no wall guide can possibly review who has severe depression and who doesn't.

So the use of these computerized algorithms are very helpful to getting our wall guides to have on their dashboard the writings and postings of people they need to focus on and to help right away.

This shows you a bit about the power of virtual platforms. This is time of day usage.

And we were able to look at people who have severe PHQ-9 scores in the -- using the methodology I've just described.

And what we've been able to show is that people who have severe depression symptoms here in the blue, many of them start to come on in the evening hours and in the wee hours of the dawn, when they are the least likely to get support.

So in our view, this is a tremendous benefit for consumers because they can come onto the wall, and they can get access. And our wall guides are able to respond to their needs. And this makes sense. When you're clinically depressed, you're likely to have trouble sleeping.

And when you feel the most vulnerable, who are you going to reach out to? Your professional is not available to you. Only the ERs or some kind of suicide hotline. This provides an alternative.

Here are some key findings. As I

mentioned, a vast majority of logins occur outside of the usual business hours. That is one of the key features of having virtual online access, which is that people can get home. And when they need support, that's when this is available to them.

As I said before, many people post content after midnight. We have found, based on member self report, that 48 percent of people joining Big White Wall had not received any mental health treatment in the month prior to joining Big White Wall. So about half are in mental health treatment, and half are not.

And a whole set of people report sharing an issue for the very first time on Big White Wall, which shows that the anonymity combined with the 24/7 access really does allow people to share very, very personal things: issues of abuse, issues of trauma that they might not have revealed to anyone else, including a mental health professional.

We have had some relatively good

outcomes, certainly for those patients that take cognitive behavioral type courses. We can lower their PHQ scores significantly.

Based on self report in the UK, patients say that they are able to avoid using services because of the Big White Wall. These are not by our own analyses. These are just patient perceptions of what they might not have utilized.

They also report reduced absenteeism as a result of using the Big White Wall. They improve productivity. Now again all the usual caveats of patient self reported data as opposed to data that is validated claims or attendance records.

Seventy percent report at least one well-being improvement as a result of the use of the Big White Well. As you can imagine, the vast majority will say it's reduced isolation, but also improved coping skills with strategies, achieving new insights and so on and so forth.

The bottom line here, I think, is it

just really shows the power of what virtual platforms can do. But combined with the power of a peer community, I do think that all of us believe that when you communicate with people with lived experience, there is a higher level of empathy than even meeting with mental health professionals.

And that's really the piece of the dimension that is so missing from mental health treatment and behavioral health treatment.

In terms of here in the U.S., what the company is trying to market to, health plans and systems are a key customer. Employers, hopefully they get augmentation to PAT. And then also directly the providers. Many providers are taking on more financial risk, with all the Medicare changes and commercial changes. So providers now are beginning to recognize that adding behavioral health services improves behavioral quality and may improve their bottom line.

This is my final slide so we can get

to the discussion period. But the bottom line here is that Big White Wall offers something very unique, certainly in the U.K. And what they're trying to do is bring this model to the U.S. We've had some early experience. I can tell you that the U.S. market is a lot more complicated, and also because of the heterogeneity of the patient population in the U.S., there are, I would say, certain challenges that we need to continue to work through.

So with that, I want to thank you for your attention and turn right to discussion period. Thank you.

DR. SCOTT: Thank you.

(Applause.)

DR. SCOTT: Looks like we will have time for a few questions. You have a microphone so let's have a couple. Over here we have a question.

MS. APPLEBEE: Janet Applebee, Northeast Houston. Are there any U.S. insurance companies or other reimbursement providers that

are currently providing Big White Wall for clients in the U.S.?

DR. SCOTT: Could you hear the question?

DR. CHUNG: Could you repeat the question? I heard something about clients in the U.S.

MS. APPLEBEE: Any U.S. insurance providers or reimbursement agencies that are providing Big White Wall for clients in the U.S.?

DR. CHUNG: Okay. Yes. So right now, we have an active contract with Kaiser Permanente in the Oregon region. And also a new contract coming up with Anthem in Indiana.

The Kaiser contract has been in force for about a year now with some early experience. And they are paying for the service on behalf of Kaiser members. And the Anthem experience is going to be launched towards initially the Medicaid population, where the State of Indiana has mandated that Anthem provide some form of peer support.

And so they're using Big White Wall as one of the scalable ways of providing peer support. So those are the two insurance companies right now that Big White Wall has contracts with.

DR. SCOTT: Over here we have a question. I believe this is our last question before lunch.

MR. DAVIS: Chris Gibbons with the FCC. Can you tell us a little bit about who's using and who's not using the service? Are there any ethnicities and race disparities in who's using and taking advantage of the system?

DR. CHUNG: Very much so. And this is one of those challenges where I think FCC and other policymakers really can play a key role. First, let me give the U.K. data because it's so much more rich than what we have in the U.S. right now.

But in the U.K., basically, what you see is that you see folks who are highly educated or at least have completed high school education

or equivalent high school education who are more likely to utilize the Big White Wall.

With regard to the race and ethnicity, it's still a majority of folks who identify themselves as white, although it is growing in the U.K. among other ethnic minority groups. But education seems to be the key. That having at least a high school education completion is associated with utilizing virtual platforms.

Clearly language is an issue. Those who have English as a primary language feel much more comfortable. You can see that we use quite a bit of writing here. And so think about that for a second from the U.S. context. It's got to be folks, at least with this platform, who feel comfortable writing and typing, whether it's on a smart phone or whatever.

And because it's there for everyone to see, people can get embarrassed unnecessarily for spelling mistakes and all kinds of things. And we have heard from some consumers who have tried it and ultimately didn't stick with it, that they

felt some of these kinds of issues, some of these concerns.

So we know that the U.S. being much more heterogeneous than the U.K. that these are real issues for us. And bringing the reading level down as much as possible, perhaps offering more wall guide intervention, one on one interaction or small group interactions that are perhaps more private for some of these folks who feel like they really don't even want to reveal themselves to everyone in the community.

There's a little brainstorming through various ways of doing that. The other one, quite frankly, is broadband access. I mean, the U.S. -- I mean, it's striking to me.

But, you know, I work in the Bronx County of New York City where I have my full time job with Montefiore Medical Center. And we can try to engage folks on multiple online platforms. And I would say the uptake has been very, very low for folks in the Bronx. They do use phones.

They do text. But their comfort in

using apps, their comfort in using broadband, their ability to afford broadband, all of that is a real challenge to try and engage folks who are normally -- who are quite vulnerable and disenfranchised.

So these are real challenges. And as I have said before to some of the folks at the FCC that we need to sort of help people see that access to broadband should be a right and that it's a utility.

And that just like any other utility, we need to support people's ability to use the utility appropriately for health reasons, for safety reasons and provide perhaps some way of a subsidy for folks to utilize it.

Otherwise, they will be left behind. Because I'm sure you have talked to a lot of exciting vendors today who do other aspects of mental health. And they're going to be left behind and then even more isolated.

So that's a long-winded way of saying that definitely there are differences we see.

DR. SCOTT: I think we have time for another couple of questions. Yes.

MS. WINNIKE: Hi, Allison Winnike, University of Houston Law Center. Big White Wall has been so successful in the U.K. And I wanted to know if you could talk a little bit about any sort of legal or regulatory challenges you faced as you've move into the U.S. market.

With our federal system, we're regulated differently. And is there anything you can speak to about some of those challenges between the two countries?

MR. CHUNG: This is really a fantastic question. I mean, first of all, the state by state differences and the state regulations really has prohibited us from -- well, I wouldn't say prohibited us, but it has made Big White Wall in the U.S. somewhat incomplete. Because Big White Wall in the U.K. actually allows people to do live therapy online, virtual online.

And in the U.K., because it's just one big country, you can put online therapists

available so that as people use the Big White Wall platform and they decide, you know what, I am really ready to cross over into that threshold and get professional treatment, and they would like to do it online, that's incorporated in the Big White Wall platform.

Here in the U.S., as part of its initial rollout, that's not possible because there are so many state by state regs about how you get people licensed in forms of teletherapy. So that's one issue. And I know that other teletherapy services are doing that and overcoming that, but at this point Big White Wall has not done that.

The second thing I would say is that the whole issue of managing risk, people -- providers get very gun shy about people posting thoughts of suicide on the Big White Wall, even though it's anonymous and even though they're better off posting it where you have an opportunity to intervene than people struggling with this alone.

The notion of liability here in the U.S. is just a huge problem compared to what people in the U.K. feel, because it just makes sense from a public health standpoint that you'd rather have people talking about this openly and honestly where you have a chance to engage people than to say, oh, gosh. I wish they wouldn't put that on the wall, because that's going to increase my liability.

So with the health plans we've had to really talk through this quite a bit. And a lot of lawyer-to-lawyer type discussion that I think has really hurt innovation. That's another issue.

And then third I think is just the whole idea of professionals. I mean this for our own field. Behavioral professionals are largely lagging the rest of the health field in terms of our adoption of a virtual and an electronic means of working with patients.

It's improving year by year, but you would be surprised. And when we talk to

professionals about this, what they'll say is that this can't work. And letting peers just talk to themselves is not a healthy situation. Or it's dangerous in some way.

And I have to say that when I hear that from fellow behavioral health professionals, I am quite shocked. I am quite shocked that they don't understand the evidence. I am quite shocked that they don't see how this augments their work. It doesn't replace their work.

That there's so many people that need treatment that they will never see in their offices. That this kind of a platform really offers a real public health intervention. I just think that's another -- it's not regulatory, but it's really a professional barrier.

I'm a little bit outspoken about this, but I have to be honest with you that the behavioral health field still needs the sort of -- through our training and our schools, we have to do a better job getting people ready for the 21st century, which we're already in, by the way,

by over a decade.

DR. SCOTT: Well, Dr. Chung, we thank you so much for visiting with us today. I think it was just as effective as if you could have been here personally, which kind of shows the power of connected technology. And we thank you for sharing your expertise.

DR. CHUNG: My pleasure.

MS. WINNIKE: All right. Thank you. Thank you, Dr. Chung. I have a couple of announcements.

Number one, it's time for lunch. We made it on time. And I wanted to explain a little route to get to lunch. Basically, you're going to make about three right turns. Go outside the door, take a right through the double doors. The next set of doors, take another right. You'll see a set of stairs.

You'll be downstairs in the law center commons where we have lunch for you. We also have technology exhibits to showcase some mental health and other excellent health care

technologies that we have here on the University of Houston campus and within the other Texas Medical Center institutions.

And also we have outside available ETHAN, EMS. We have the University of Texas Mobile Stroke Unit where they bring their stroke CT scanner in the ambulance to cut down on the critical hour in stroke response. As well as we have the Harris County Public Health broadband LTE mobile command unit out there.

So you can -- you are free to take your lunches out in the common and just come and visit around. Check out all of our great exhibits down in the commons and outside.

And I would like to remind you that promptly at 1:30 -- I'll even say 1:28 -- please be in your seats, because we have a wonderful, wonderful treat for you all. Our afternoon keynote speaker, Dr. Lex Frieden, the architect of the American Disabilities Act.

And he is going to come talk about using broadband health technologies to help

improve mental health access for special populations and those in the disability community. You are not going to want to miss this.

So thank you and have a good lunch.

(Whereupon, the above-entitled matter went off the record at 12:33 p.m. and resumed at 1:33 p.m.)

MS. WINNIKE: Good afternoon, everyone. I hope that you had a great lunch and you got to visit some of our great exhibits outside and down in the commons.

We want to get started right on time this afternoon. We have a fabulous program. And to kick things off we have a keynote speech from Dr. Lex Frieden. And I'd like to invite the Commissioner up here to say a few words about him.

COMMISSIONER CLYBURN: Thank you. Thank you. Welcome back, everyone. I hope you had a chance, as was mentioned, to eat lunch and see some amazing technology on the exhibit.

This is -- serves as a perfect backdrop for our next segment. The following -- the speaker to follow, I should say, is no stranger to adaptive technology and the promise of independent living.

We are so honored to have one of the true pioneers of disability advocacy with us today. Lex Frieden is a living legend whose work has not only transformed the daily lives of millions of people with disabilities, but the fabric of society itself.

During my tenure at the FCC, I am proud to say that I have been a part of an agency that is working to ensure that everyone, including those with disabilities, have access to advanced telecommunication services and equipment, including telecommunications relay services, closed captioning, video description and hearing aid compatibility.

And one of the core objectives of the Connect2Health FCC Task Force is to encourage the development of broadband enabled health

technologies that are designed to be accessible to people with disabilities. This is why it is a particular treat for me to introduce Mr. Frieden.

The professor of health informatics and rehabilitation at the University of Texas Health Science Center at Houston has served as a chairperson for the National Council on Disability, is the president of the Rehabilitation International and chairperson of the American Association of People with Disabilities.

Mr. Frieden received several presidential citations, and is recognized as one of the founders of the independent living movement by people with disabilities. He was instrumental in conceiving and drafting the historic Americans with Disabilities Act of 1990. I just did not think I would live long enough to meet someone so incredible outside of my parents. I have to always say that.

Mr. Frieden has led national research studies evaluating the impact of the ADA and

identifying disparities related to employment, transportation and housing, and community living. And as a colleague noted, his work has transcended politics and personalities. He is an intelligent, gentle and profoundly honest giant among giants.

It is such a pleasure for me to welcome you, my new friend, Mr. Lex Frieden.

MR. FRIEDEN: Thank you, Commissioner, for that very warm and generous introduction. I wake up every morning with the notion that today is a new opportunity. And it's a new day that gives me the chance to do something that will affect the lives of other people in a positive way. And that's the way I approached this morning, thinking about what I would say to this group.

Now, over the last few weeks since Professor Winnike invited me to take part in this program I've done a good bit of research about broadband, mental health and disabilities. And it's raised a number of questions as well as

answered a number of questions.

Among the research I did was to look at the FCC and see what the FCC actually has been doing since I was chairman of the National Council on Disability in the 2000's. And I was impressed. I was most impressed when I Googled the Commissioner's name along with disability and discovered three pages of remarks that she has made about disability and health. And I think that's instructive.

The FCC has, for decades, been supportive of people who need access to broadband and people who need access to communications technologies. But it takes somebody with an intuitive sense of passion, an intuitive understanding, to effect consistent and reliable change.

So while the FCC has done great things over the years, we can note that there are periods of time during which they make giant leaps forward. And I believe that as a result of the Commissioner's leadership, the Chairman's

leadership and the other members of the Commission now, we have the rare opportunity to take some giant leaps forward. And I applaud them frankly on reaching out to the community of people who have mental health needs.

It's sometimes a forgotten community. It's sometimes an overlooked community. Sometimes it's a quiet community, and that may account for the other dynamic. But I'm telling you from personal experience that people with disabilities, all sorts of disabilities, may also have mental health impairments.

I observed earlier today that the Commission seemed to have a bit of a dichotomy in regards to mental health issues and disability. As I Googled their website, I found great technical assistance information pertaining to disability.

There's information about how to access things if you have a mobility impairment, if you are blind, if you are deaf or hearing impaired, if you have an intellectual disability.

And on the same page there's nothing -- nothing -- about a psychiatric impairment or a mental health issue. Nothing.

And yet there's another set of pages that talk about mental health. And they describe mental health and disabilities almost as if it's two different things.

But I can tell you again, from personal experience and from a lot of people that I work with and know, the same kinds of dynamic that affects access for people with physical disabilities, sensory impairments, intellectual disabilities, affects people with mental health impairments. The same dynamic is at work.

People who don't know you. People who only know about you by a title, sometimes a diagnosis that a doctor has given you, make judgements about you. They do that all the time.

Just this week, the Department of Justice filed a complaint against Beaumont, Texas, because they had housing restrictions, zoning restrictions, against people who were

living in halfway houses. And these people were genuinely afraid of someone who would live in a halfway house, because they weren't familiar with the kinds of people who lived in halfway houses.

Had they known that the people who live in halfway houses are just families and would behave just like any other extended family who might be living, sharing the same residence in their community, they might not have passed that rule. They might not have had to pay a million dollar fine, but that's beside the point right now.

The reality is, we sometimes fear that which we don't know and which we don't understand. And behavioral health issues are among the most feared. And part of that is because the history of treatment of people with behavioral health issues in the United States.

It wasn't too long ago that people who were deemed "mentally impaired" were institutionalized. Today there are tens of thousands of people with disabilities, not only

with mental health issues, but also with other types of disabilities who are institutionalized simply because we have disabilities.

If your mother falls down at home and breaks her hip and goes to the emergency room, in most cities in the United States, she -- or he, if it's your grandfather or your father -- will be referred to a nursing home for recovery. And the odds of ever getting out of there are very, very low.

And the same thing happens to people with behavioral health problems. If they are referred to an institution, sometimes that stage of diagnosis and early treatment extends and extends and extends. And after awhile, if you're a patient, you forget how to behave in the community, in the real world.

So what about broadband? Let me tell a little bit, just quickly, about mental health and disability. I -- I think -- and I would, you know, with due respect to the professional clinicians, I would say that there is equally as

much, if not a great deal more, therapy that occurs between individuals than there are between individuals and professional counselors.

And the -- the social networks that provide support to people with all types of disabilities and particularly mental health disabilities are very, very important.

So why don't we look at telehealth? When we get preoccupied with what the rules and licensing rules are, regulations and so on and so forth for physicians practicing in a telehealth environment with people who have psychiatric conditions.

Don't forget that the social relationships that people depend on are equally, if not more, important than the telemedical relationships. And as the Commission moves forward, I hope they'll consider that.

I asked before I came here, two weeks ago after I was invited to come. I sent out on social media an announcement to my friends that said, "I have the opportunity to go and talk to

the FCC and a group of people who love the FCC and want to know what they're doing in telehealth and connectedness and health. And what do you want me to say to them? What can I do to represent you?"

And I got back numerous, numerous responses. And I tried to organize them. I'm a researcher so I have these methods of qualitative research, but in reality, it's pretty simple when you look at what I got back.

People are concerned about access. And the major barrier to access is money. Simple as that. Two thirds of the population of people with disabilities, and perhaps a higher proportion of people with behavioral health issues in the United States today, are indigent.

And, you know, to talk about getting online, and chatting with friends or meeting a physician or anything else, is ludicrous. They can't get online because they can't pay the bill. That's access.

We're also talking about access for

people who are deaf, who can't tell what's being said in a oral conversation, or people who are blind who can't read the notes. And here, by the way, is a big one. And I'd like for the -- for those of you that are going back to Washington to take this one with you.

So many of these teleconferencing technologies are out there and none of them -- not a single one, is completely accessible to people with all types of disabilities.

They're built on graphical user interfaces. People who are blind or using other kind of technology to read those screens don't know what's being said, what's being shown or anything else.

So the FCC took a leap forward when they tried to encourage Adobe to fix their darn PDFs or at least have a work around for that. Now, let's get serious about these companies that are providing web conferencing services.

And I don't even know, quite frankly, why they're allowed to sell those services in the

United States unless they're completely accessible.

And that's the other thing I'd like to raise here today, and leave with you. FCC knows what the issues are. These hearings have been had before. I looked last night and the National Council on Disability that I led in -- in the 1980's and again in the 2000's produced numerous reports about the superhighway access for people with disabilities. And FCC responded to all of those reports in a very progressive and -- and constructive way.

And I think the Commission knows what these issues are. The question is how -- are they willing to put their foot down? Are they willing to get serious, you know, there's only so much conversation can do with the big boys who are producing these websites and this software and providing this platform for us to use the highway on. Only so much they can do with friendly chit chats and -- and meetings where they, you know, sponsor receptions and so on and

so forth.

At the end of the day, these people are motivated mainly by profits and mainly by a desire to have as many people using their -- their platforms as possible. And they don't consider people with disabilities as valid users. And the one reason they don't is because they know the demographics. They understand that most people with disabilities don't have access to that highway anyway.

So why should they be motivated so much to do it other than to say, "We are working on it." And if you go on their websites now, they all have posts -- and I'm sure their attorneys have told them to do this. They all have posted a one page. They all read about the same. I wonder who actually wrote it for them, that says, "We're aware of the requirements to have full access and we are sympathetic with that perspective and we are working on it." And how many years will they have to work on it before they actually do it? Well, they may work on it

forever unless somebody makes them do it.

So I -- you know, I have some real issues when it comes to talking about access and -- and using the bully pulpit versus making people actually behave the right way. So that's -- you know, those are the kinds of -- I want to share with you one quick anecdote.

After I broke my neck in 1967, I went to rehabilitation here in Houston at Memorial Hermann. And I moved back to Tulsa and applied to go to the University of Oral Roberts. And I was turned down, not because I wasn't qualified, but because I used a wheelchair for mobility.

They were very clear about that. "It's our policy not to admit students with disabilities on our campus." That depressed me. When I had that conversation with the Dean, I couldn't talk for three days. After that, I was depressed even though I could talk for years.

Until I had taken advantage, coincidentally, of an FCC provision that allowed me, as a person with a disability, to take an

exam for an amateur radio license in my home by a volunteer, and I passed the exam and became an amateur radio operator.

And I was one time on the air asking anybody to call back that heard me and I heard a deep, British voice respond, "My name is JY1." That's a call sign. And anybody who's an amateur radio operator knows that JY1 in 1968 belonged to one Hussein, King of Jordan.

And I -- I said -- when I responded to him, I said, "King, this is just amazing. I'm, you know, sitting here feeling sorry for myself. I can't go outside with my friends. I can't play basketball in the street. And -- and here I have the opportunity to do something they can't do. I'm talking to a king. And I really do appreciate you taking the time. I can't imagine you having the time to do this."

And the king said to me, he said, "Lex, you're the one doing me a favor." He said, "If I step outside now I'll be shot." He said, "You're helping me at least as much as I'm

helping you. You need to put your life in perspective."

I don't think a professional counselor could have told me any better that I needed to stop feeling sorry for myself. And after that, my life changed. And I attribute that to that one mental health counseling moment from one JY1.

Thank you all very much for giving me the attention today.

MS. WINNIKE: Thank you so much, Lex. You always are inspiring and we love to hear about your vision on how to improve things for the future. And we very much appreciate you coming to share that with us today and for being such a leader and a friend to the law center. So thank you so much.

So we will move forward now into the program. And we're going to do a spotlight now on some innovative partnerships in data analytics in mental health. And so I would like to invite up Dr. Yahya. There you are. Sorry, in the back. And our panelists, Dr. Tsang and Judi

Manis.

MR. SHAIKH: Well, I want to thank you all for being here after lunch. And I want to thank Judi and Tom for joining us for this fantastic session. What we're going to talk about today is -- in this particular panel is a personal interest of mine. It's around innovation.

And this is really particularly interesting because Judi -- I'll get into intros in just a second -- but Judi is actually running a foundry. She's head of business development at the AT&T Foundry here. And one key part of innovation is it doesn't happen in a -- in isolation of everything else around it. It has to be driven by a business model. It has to be driven by need. It has to be driven by a system -- an ecosystem around it that can support it. So she's really engaged in that aspect of it.

And Tom actually, he's -- he's here in the capacity of CEO of Valera Health. And what -- what they do is they're actually a start-up

that's focused on one particular aspect of the health care system. And he will talk a little bit more about it.

I want to properly introduce Judi. So Judi is the senior vice president of health care strategic initiatives and business development of AT&T's IOT health --

MS. MANIS: Very long title. I know.

MR. SHAIKH: Help me out. IOT Health Care Services.

MS. MANIS: Health care.

MR. SHAIKH: And she's also running business development at I think TMC and AT&T's foundry over here. It's one of six foundries in the world. So it's quite a privilege for her to be able to do that.

One thing I really liked about her bio is that she got her M.A. in marketing from Cal State Poly and I'm from California.

Tom -- Tom is -- actually, he's pretty distinguished in health care himself. And I think he's made an impact that all of us can

feel. Right now he's the CEO of Valera Health. He's also -- previously he was the CMO at Mertz Health Care Services and Health Care Solutions.

He's also a senior advisor to the governor of Hawaii, where he advises them on health care transformation, which makes sense because he was also a legislative staffer on the House's Ways and Means Committee, which led to writing the HITECH Act and the ACA Act, which led to, you know, EMR adoption around the country.

He has also made many other changes, obviously with ACA. But he went on to join the Office of the National Coordinator of Health IT. He worked there for quite a few years as the medical director. And now he's the CEO of Valera Health.

I'll -- I'll hand it over to Judi now. And she has a presentation. And then we'll have a demo from Tom.

MS. MANIS: Thank you very much. Thank you for that introduction. And it's nice to meet all of you in the room. And thank you so

much for this opportunity. It's really an exciting thing that AT&T is moving into.

And as you had mentioned, I wear a number of different hats with AT&T. Leading strategic relations and strategic initiatives within health care, I get an opportunity to meet innovative doctors across the nation that are really working on leading in innovations.

And then through the foundry, leading the health care side of business development, I have an opportunity to bring in companies that are really working to find technologies that can shore up the gaps in a very challenging health care industry where it's key and critical to be able to provide the level of care -- same level of care no matter what the income, no matter what the demographics, no matter the location. So it's an exciting role that I get to play.

Today I'm going to talk specifically about our connected health foundry. Our connected health foundry is actually going to be opening up next month in early June. Let's see

if I've got this -- oh, no. Okay.

So our connected health foundry here in Houston is in addition to foundries that we have currently in existence. So we have four other foundries throughout the world. The foundries are focused on creating an open and collaborative environment to really solve problems where there isn't a clear line of sight to the solution.

And it's slightly different than the way that we do things in Bell Labs, just because it's set up as a, kind of, like a think tank, fast-paced opportunity to bring things from the initial problem into pilot.

At AT&T, sometimes our solution development can take months, years. But through our Innovation Institute, we start almost instantaneously once we've determined that there is an issue that we want to work on. And the solution can come from ideation to pilot in a matter of weeks.

It -- so taking it from the foundry,

now, down to the internet of things. Obviously, there's benefit and value of being able to provide connectivity to all sorts of things. It's interesting in the internet of things, foundries, we've been working on projects such as a connected refrigerator. You might think, okay, well, what does the connected refrigerator do?

Well, here's a use case. Red Bull. Many of you may have tried that. Needs to be kept for ultimate taste and -- and whatever impact it gives at 32 dot something degrees.

So with a smart refrigerator, Red Bull can totally determine whether or not the Red Bull cans are being kept at the ultimate temperature, if the door has been open too long, if there's an issue with the refrigerator.

And another used case is the smart tractor. Farmers that manage large pieces of property and a huge farm, being able to know where their tractors are, how their tractors are running, how much productivity that particular tractor and tractor driver covered, brings great

benefit and value.

So some of the -- those are some of the things that we're doing from an overall foundry -- internet of things foundry.

So that brings me to where I get to get involved and where I'm really, really excited about. And that's our connected health foundry. And our connected health foundry is going to be unique specifically focused on health care. And it's going to be assisting in device and design technology, helping to design solutions to bring benefit and value to the overall care process.

And why is that unique? It's unique because, as I mentioned, the connectivity of devices can bring benefit and value. And connectivity of health care devices can aid in the overall care plan and provide an opportunity to improve the level of care.

So within our foundry, we are going to give the access to resources and tools in order for us to do those collaborations. We're going to be focusing on four specific areas. Post

acute care, emerging devices connectivity, aging in place and then innovation in a clinical environment, within the medical offices and within the hospitals.

And so the way that we're setting up that foundry is that it's going to have specific areas. It will have the hospital area, the doctor's office and the home area. And in each of those respective areas, we'll have the resources and the tools to do the collaborations, to do the innovations and to demonstrate some of the technologies that we've already brought to bear in the market.

So why did AT&T select the opportunity to collaborate with Texas Medical Center? As I mentioned, we have other foundries throughout the world. And when Texas Medical Center came to us and shared with us the work that they are doing in innovation, it was very exciting to AT&T.

We have the opportunity to now sit in the middle of Texas Medical Center, where they have 54 medical institutions. They've got 21

hospitals, not to mention the medical students, the doctors, the resources, etcetera, that are available to us.

And then in addition to that, we have access to TMC X's and TMC X pluses. Now, what -- what does that mean? Well, that means that the way that TMC has set up their Innovation Institute -- and Thomas is -- is one of the TMC X's, so you'll learn more about that in a minute.

But the way that TMC has set up their Innovation Institute is that they have an area for small start-ups, incubator companies. And they have the ability to come into TMC, have access to the resources, the real estate, the -- all the things that TMC has to offer as the TMC X's are building their business.

Beyond that, once they continue to grow in the market, which I know Valera is doing, they have an opportunity to join what's called the TMC X plus. And that's an area for our mid-sized businesses to then have at a lower cost than normal market values to be able to access to

resources, to real estate, etcetera.

So exciting for the TMC X and exciting for the TMC X pluses, but super exciting for AT&T to have that opportunity. Our foundry is smack dab in the middle of the TMC X arena. So we are really excited about the opportunity to collaborate with these start-ups to see where the synergies are so that we can bring health innovations to market.

I didn't know these slides were builders. Sorry about that. And the other thing that's mentioned up there in the last place was J&J Labs. So, AT&T is not alone in investing in TMC. There are a number of other enterprise businesses that are engaging in this great opportunity, inclusive of J&J Labs, who's built a beautiful foundry co-located with us in the TMC Innovation Institute.

One of the examples that we have of the innovations that have been created within our foundry is this connected wheelchair. Permobil came to us and said that they really needed a way

to be able to determine whether or not their wheelchair was working most efficiently and effectively. In addition, they wanted to know how the patient was doing within the chair.

So we worked with them to create a smart wheelchair, where we're able to sense how the tire pressure is, how the batteries are operating, be able to take the blood pressure, weight, the important stats from the patient, as well as being able to monitor the wheelchair. So that's just one of the really exciting things that we are going to be working on within the Innovation Institute.

Additionally, another innovation that we are working on that's very exciting for us is -- it's a way to measure and monitor true levels of pain. So you know when you go into the hospital or a doctor's office and you see the happy to sad faces and that's the way they ask you how you're feeling? This is actually a really nice looking headband that you put on your head and it's able to sense an individual's true

level of pain.

So you can imagine all of the amazing use cases that are becoming available as a result of that sensor. Once they determine an individual's true level of pain via a tablet, they push distractionary content out so the individual's mind is taken away from the pain that they're dealing with and being able to relax and enjoy content that they find of benefit and value and enjoyment.

The brain sensor is able to determine if you're enjoying the content, and if you are, it pushes more of that content to you. If you're not, it sends you other type of content. So really exciting there.

And they're also finding so many other use cases. As an example, in the arena of dementia and Alzheimer's, they are able to determine an individual's level of focus and attention over time. So you're able to see the impact of what the disease is having on an individual's brain.

I may have gone way over. So I apologize about that. But this is just an exciting opportunity for us. Obviously, if you look at the overall health care arena, technology can play a key and critical role.

And we think utilizing our foundry and being able to collaborate with such -- companies such as Valera that we're going to be able to help via technology improve the level of care and provide consistent care throughout, so thank you for that.

MR. SHAIKH: Thank you.

MR. TSANG: I'm just going to say thank you very much for having me join. And thank you, Commissioner and thank you for the FCC -- and as well as the University of Texas Law Center for sponsoring this.

A little bit about my resume and my background. When you -- when people introduce me, people kind of wonder, "Does this kid have ADD or something like that?" Because I -- I certainly have kind of done it all from clinical

practice to -- to policy, to regulations, to pharmaceuticals, and now entrepreneurship.

But, you know, when I was working with your dad on Ways and Means, my mom said, "Don't touch my Medicare," and she was, like, 75. She just didn't understand why I'd finish med school and then not practice. Anyway --

So Valera Health is a digitally enabled company that uses a precision-based approach. Because I think for the last six years, as Dr. Henry Chung said before, you know, one of the key areas in terms of using data analytics and digital technology is mental health has been lagging in the field.

And so what we want to do is really leverage analytics in precision-based concepts and approach to actually stratify individuals, to get the exact information of how individuals are feeling and then coordinate care and develop a managed-care plan with that.

The only thing I'm going to say about the background is that I believe I've been

listening since the morning and no one has quite yet mentioned the Mental Health Parity Act, which is in the Affordable Care Act. And that brings mental health benefits on par with medical benefits.

And that basically says to the insurance company, "You can't put administrative hurdles on people with depression or schizophrenia. And you can't cap utilization, because we don't cap diabetics to see their primary care docs, so we shouldn't do it for people with mental illness."

And then the other piece I want to bring up is that a lot of patients have co-morbid conditions, both congestive heart failure and depression, are people who cost the highest and probably the greatest need in the health system.

So for example, if the average per capita expense for an individual with congestive heart failure is maybe about 12,000 a year, it would be three times that for someone with depression.

Because at the end of the day, if a stage four congestive heart failure patient feels depressed and they're eating a bag of potato chips with all that sodium, they're gaining weight, five or ten pounds later -- boom -- they're going to end up in the ER.

So our company is based on evidence and based on science. And I just want to show you that there have been studies proving that monitoring behavioral health using digital cell phones and what we call a digital phenotype actually works.

So this is the study coming out of Dartmouth with about 45 college students that they tracked over ten weeks. And they actually showed and demonstrated that the data that you collect from the cell phone, and that's geolocation, the amount of light that you've been exposed to, the pitch of your voice, the amount you text, all of that data could be analyzed, and using machine learning algorithms, we can predict the level of stress and an exacerbation of

depression.

So our solution is composed of four pockets of activities. The first piece is analytics. So we take big data sets, claims data from the pairs, and we actually identify people with a propensity for behavioral health issues. But we also take individuals and we stratify them according to cost and need.

And then we ask the patient to download a digital application that sits on their cell phone. And we start collecting data from you. So we use the same exact metrics that the Dartmouth researchers are using.

So we're collecting geolocation. We're collecting your activity. And we're working on the pitch of the voice. And we can actually collect the light sensing -- use the light sensing technology as well.

So we stratify individuals. Not every single individual has the same level of depression. And so because of the limited resources we have in this country, we can

actually focus and hone in who needs what. And then once we collect the information, if the person is getting worse in terms of the depression screening and then we see the geolocation going down and they're staying in bed all the time, we can actually contact them.

This is the mobile application. I'm going to run really fast through this because I'm running out of time. Our mobile application is designed so that we can actually have a fully engaging process and we start collecting information once you download it, with your consent.

Our coaches can actually do a private, secure messaging piece that can actually coordinate and get pre-data -- pre-visit data and coordinate post-visit information.

And then we have a -- a HIPAA-compliant secure telemedicine feature as well. One of our pilots that we're going to launch is with McLean Hospital connected with Harvard. And we're going to focus this on the use case of

schizophrenics.

We're working with -- one interesting partnership is that we're working with the Louisville Metro Correction Facility to look at designing a pilot where they fast track the release of patients with dual diagnoses. And they would -- and we would sense where the patient is going to.

And if there's drug activity going on from police data, we can send an alert to that patient and send an alert to the case manager. So this is to enhance reintegration and to reduce recidivism.

The other pilots we have a monitor, which is an ACL care more, which is a managed Medicaid plan. Green Door has 1,600 schizophrenics.

And we're hoping to achieve these outcomes. Reducing costs avert high sentinel events and actually disrupt the traditional model in terms of how we deliver meds and services.

I'm going to talk about the challenges

later, but while I have three minutes I'm going to go to this. And I hope you can see it. This is the dashboard when you sign on. You're going to see a roster of patients that the care manager has. And then I'm going to go to my own profile and show you three months of data that I've collected on myself using my cell phone.

So here you're going to see steps. We're going to go actually one month. You're going to see steps. And on May 2nd, I had 12,000 steps. On April 26th, I had 1,000 steps. And so you see a trend, right? So you see this -- I probably average about 5,000 steps or 6,000 steps a day. And on these days when I'm not averaging 6,000 steps, I'm probably low activity. And then you can go into my geolocation to see how many miles I've traveled from my home.

And then look at my depression score, which is the PHQ-2 and the PHQ-9. And you can see whether on that day when I'm low activity, whether I scored a very high depression scale, which is 23, which is very high.

And then at the same time, we can import data from peripheral devices. From the blood pressure monitoring devices, from Bluetooth-enabled scales and then we can also do glucometers.

So we can treat diabetics and congestive heart failure patients with depression and actually look for incremental change. And then when that happens -- I'm going to go back. Sorry.

You're -- you're seeing my app right now, my cell phone. And I'm going to say, "Hello, Tom. You have a message from your care manager." I'm going to go to the app. And this is a -- but then when we want to do a telehealth visit, you can just press a quick button.

You're the patient today, and I'll be the doctor. I think the broadband here, we're not capturing the WiFi. It's taken a little bit longer. But as you can see, we have the data capturing system where we can actually do the remote monitoring. And then we can actually do

the messaging and do -- do the telehealth -- a reimbursable telehealth visit all at the same time.

I just want to go back to some of the issues that is quite challenging, I think, for innovations. And that's the lack of reimbursements for using digital health technology. I think the varying telehealth regulations that vary from state to state. I think someone else had mentioned about inability to actually put together the 42 CFR that prohibits information from mental health notes, putting it into the primary care doctor's notes.

And then really trying to speak with CMS and HHS in terms of developing new delivery reform models and payment models that can encourage this type of technology.

In terms of technology itself, I think we need better standards. I -- I'd love to work with Judi about software that can actually reduce battery life. And connectivity and memory. And then, of course, interoperability of EHR and this

type of data.

So thank you very much. I know I went very quickly, but everyone can help me help others, and join me in the fight. Thanks.

(Applause.)

MS. WINNIKE: Thank you so much. What wonderful presentations and wonderful and innovative technologies. We love to hear about this.

We are going to take a very quick break as we bring in our very last panel of distinguished policymakers, and give you guys an opportunity to ask questions. So how about a quick five minute break? And then we will get started and wrap this up at the end of the day. So thank you guys so much. This has been wonderful so far.

(Whereupon, the above-entitled matter went off the record at 2:17 p.m. and resumed at 2:25 p.m.)

MS. WINNIKE: Thank you, everyone. This is our final and perhaps the most important

panel of the day, because it covers the legal and regulatory issues that's touched on throughout the day. We have seen so many great innovations going on in the state. We have seen so many new ideas, some challenges related to broadband access, mental health care access. And it's really been leading up to this. And this is our policy conversation on the policy issues and to see if we can come up with some prescriptions for broadband-enabled healthcare.

And so it is my great pleasure to introduce our very, very distinguished panel today. We have Dr. Chris Gibbons, who you may remember from earlier in the program.

He is the Chief Health Innovation Officer for the Connect2Health Task Force at the FCC. He is a physician. He specializes in informatics, healthcare disparities, urban -- he's an urban health expert. And his academic research has really focused on the use of technology in consumer health informatics to help improve healthcare disparities. And he's really

looking at the intersection of population science, medicine, and health informatics.

And then next on the panel we have the Honorable Garnet Coleman, which I'm sure many of you in the room are quite familiar with. He is our state representative in District 147. And he has served quite admirably since 1991. And he is a noted expert in mental health and also a champion in the area of telehealth. He is the senior ranking member on the Public Health Committee in the House of Representatives. He is the chair of the County Affairs Committee and House of Representatives. And very important to us, he's a member of the House Select Committee on Mental Health. And so we're very happy to have him with us today.

And next to Representative Coleman, we have Representative, and Dr., John Zerwas, who also many of you may know. He represents over in the Katy area. He is chair of the House Committee on Higher Education. And he is really an advocate for increasing access to higher

education and growing opportunities for graduate medical education, which is something that we have touched on earlier today in the program.

And again, like, Representative Coleman, he also sits on the House Public Health Committee and where he is a very valued member with his medical background. He's been a physician for over 30 years. And he's a past president of the American Society of Anesthesiologists.

Next to Representative Zerwas, we have Mari Robinson. She is the executive director of the Texas Medical Board. And I would also like to note that she is the first lawyer executive director of the Texas Medical Board, which here at a law school we very much appreciate that.

And so what she does as the executive director of the Medical Board is she oversees the Medical Board in their addition to the legal and the administrative issues within the agencies. She is very well regarded throughout the country. She worked with the Federation of State Medical

Boards, which is the federal group and she works on their work groups and committees quite regularly and is known nationally for her work.

And then last, but most certainly not least, is Nora Belcher. And she is the executive director of the Texas e-Health Alliance. And the Texas e-Health Alliance is a non-profit advocacy group of health information and technology stake holders. And their group works for the use of information technology to improve healthcare systems for patients here in the State of Texas.

And so it's my pleasure to welcome this distinguished group here this afternoon. And we hope to work in some questions at the end so we can sort of bring together some of the issues we've seen throughout the day when we're looking at some policy solutions.

Okay. I'd like to start with Dr. Gibbons. If you could give us, briefly, an overview from the national level about some of the issues that you've been working on, especially with special populations, issues with

underserved populations, health disparities issues, and particular with mental health. And what are some of the policy issues that you see at the national level that may also be an issue here in Texas?

MR. GIBBONS: Okay. Sure. Well, first, let me say this has been a fantastic day. I've had a great time hearing and learning. And it's hard for me to add on top of that.

But let me say this. I think that, while we heard about a few specific mental health issues, depression and a few others, we have those kinds of problems in the Northeast, in the West, in the North, all over. And so there are many, many, both problems that need to be grappled with, as well as solutions.

And so the first sort of take home, I would say, is we shouldn't be looking for a one-size-fits-all paradigm in terms of technology, technology policy and health.

You know, I often say -- used to say to my medical students: Just imagine for a minute

I was a perfect doctor, which I am. And I always made the perfect diagnosis. I had the perfect medicine and the patients were always perfect. And I gave it to those who came and saw me. What would that do the amount of disease in the community? Those who got it understood it would be great for those I saw, but do nothing for those that I couldn't see. Right?

And so we've got to think about different solutions to different problems or different populations of people, even for common problems. You'd think I was crazy if I said there was one pill to treat all of cancer, even one person. So it's the same kind of thing. Not a one size fits all approach.

I think we saw from Lex Frieden an amazing example of something that I also think is very important from a policy perspective. You know, it's one thing for me as a physician, and other physicians and other lawyers, to sort of talk about what people with mental health problems need, people with disabilities need,

people of underserved populations.

And, you know, we would be right, I guess, some percentage of the time. But I've never been amazed. When you ask them what they need, you will learn something. You will inevitably learn something.

And I think that's another -- we need to think from a policy perspective, how do we bring more of the communities that we're talking about into the ecosystem, into the developmental ecosystem, into the policy arena so it's not just us people doing things for them? Which we believe are right, and may be right, but again, involving them in the whole spectrum of activities or getting their perspectives in a more succinct and more systematic way, I think, is important.

I think the other thing that we heard today is another principle that I think is very important to look at from a policy perspective. And I'm a physician, right? So I get it. But it's not just about doctors. It's not just about

hospitals. And that's where the big -- that's the story of the Big White Wall, right? It's about allowing patients to talk to patients, consumers to talk to each other.

And even Lex Frieden said, when he opened up, he said, you know, "I think there's more therapy going on between patients than between patients and caregivers." And I've long said that that's true.

If you think about how much time does any patient spend in front of any practitioner over the course of their life, right? One percent, three percent of the time? So if we're perfect in that one percent of time, have no influence on the other 99 percent of the time, how effective can we be as a healthcare system and as a society reaching our national health goals?

And so we've got to think about caregivers as well and bringing them into the picture, being formal or informal caregivers, and I think technologies one of the few ways that

we're going to be able to do that.

And, you know, it's not just healthcare systems thinking about health anymore. We talked a little bit about smart cars and autonomous cars. But the automakers and Google and others are already thinking about healthy cars and how when you sit down in your car it can measure blood pressure and other things.

We have talked a little bit about smart homes and smart cities initiatives. And soon, at some point, smart homes are going to be connected to smart cars. They're going to be connected to smart cities and maybe eventually to smart hospitals too. But at least somewhere in that realm.

But if we can incentivize these things to work together, not just for those who have good insurance, but for everything and for everyone, as a policy initiative, then we can perhaps leapfrog over this problem.

One final example is we -- Dr. Stover talked about health literacy as an issue. I'm

beginning to wonder if that's an issue, although I think it's real, that may lose its meaning in the future, right? Because we talk about it as people don't know how to use this and they can't get the benefit. But if it's built into the house, into the walls, into the car and does it for you automatically, you don't need to know how to do anything, right?

That's the potential of where we can go. We can do it and benefit you, even if you can't use it. So I think it's exciting times. And thanks for the opportunity.

MS. WINNIKE: Thank you. Thank you so much.

I wanted to follow on with our two distinguished Representatives here. One thing that we have been looking at throughout the day are issues in urban areas and issues in rural areas. And sometimes we have the same issues about broadband availability and access. And sometimes we have the same issues about physician shortages and access in both of those areas.

And so your district here in Houston, urban district. You're out in the Katy area and you have sort of a mix. You do have some rural areas in your district.

And I wanted to start with you, Representative Coleman. You have been a champion for mental health issues for so many years. You have been a champion in using health technology to try to increase access. You have authored numerous pieces of legislation over the years, passed some really great, innovative pieces of legislation over the years.

And I just wanted to get your take on why is this such an important issue, especially for the folks, your constituents in your district? How does this make a difference?

MR. COLEMAN: Well, I think you brought it up. Providers shortages are real. We can't build enough medical schools to create enough psychiatrists to take care of all the people here in the State of Texas. And I know Dr. Zerwas will talk about residencies, because

that's a really big part of that.

But we do have other medical professionals and providers, like MSWs -- masters of social work, clinical social work, licensed professional counselors, doctors in psychology. Those are folks who can provide counseling. But they don't often live in rural areas. And so we have to have some way of getting both counseling, med management, and all of those different things that people with mental illness need to places where the professionals just aren't readily available.

So we can do that through telepsychiatry or through telecounseling as well. And that means those folks can get the same types of care that people anywhere else have. Particularly if our LMHAs, our mental health authorities that are providing that care to people who do not have insurance and access.

So I think those are really important. The Speaker gave us a charge in two interims ago on the education of mental health professionals.

So we are now looking at how do we create these teams of people who care for individuals?

We also had an incident that -- with Ms. Sandra Bland where we -- and along with that, we've had a lot of suicides, too many for any of us to tolerate in our county jails. Well, we can use telepsychiatry or telescreening in our county jails when somebody who comes in and indicates that they may have a problem with a mental illness and at risk in a prison.

But the real challenge is in rural areas. Again, we've talked about this, in certain communities, they don't have broadband access. So they can't do the tele -- can't use the television to actually do those screenings and work with the magistrates to determine whether that person needs to monitored in the jail. And that, along with the better screening tools, really makes a difference.

So we're still working on that. But clearly, we can't get the ability, the technology to those places. Those are the communities that

have the hardest time paying for it, because they're low populations that doesn't raise a lot of tax revenue.

The other piece I think really good and -- and I know Dr. Zerwas will add to this -- is that under our 1115 transformation waiver from the Center for Medicaid and Medicare Services, we have implemented telepsychiatry and telehealth mental health with our schools and with children.

It gives them better access to the needs that they have, even if their parents can't get them to provide. So, you know, we always like to rag on certain people, but that's something that Governor Perry was the catalyst behind and the reason why it worked. And that was a very good thing. Because that worked with the increases that Dr. Zerwas put in for our mental health treatment.

So with all of that, I think we have a good start. Outside of that, we're still struggling with how do we expand telemedicine through people, you know, companies like Teladoc

and others. You know, there's a struggle between where there's a physician on both sides of the swing. Who is taking responsibility for that patient? And we still haven't gotten there yet.

Although, I believe the private sector hospitals are moving ahead of us to use that technology for follow-up with patients that have been discharged.

MS. WINNIKE: Those are some really, really great points. I wanted to move next to you, Dr. Zerwas, to get the physician perspective. I mean, you've been working on this for a long time. And I know another thing that you're interested in is issues related to veterans.

And so, that's something we talked about earlier today, about making sure that we have mental healthcare access for some special populations. Populations related to veterans or individuals with disabilities.

And from the physician side -- and Representative Coleman mentioned this -- about

through these sort of new care teams who are doing integrated care and integrating mental health.

And I want to sort of get your perspective on that and if you think that that's the way we should move forward and if that would be the proper way to address some of these underserved populations.

MR. ZERWAS: Sure. Well, thanks for having me. Appreciate it that you've allowed me to participate in a very distinguished panel here. And General Coleman, it's always a pleasure to be on with him. He and I do a lot of these together, and we don't agree on everything, as you might imagine, but we agree on most things. And when it comes to the mental health issue, I will tell you we are right in line with each other on this. And the question is not whether we agree, it's coming together so we can push through. You know, we sort of test the system periodically when we do that.

A general comment I'll make about, you

know, utilizing technology by moving into the digital age of healthcare and medicine is a story that I was told, Dr. Gibbons you may remember, somebody may have told you.

But back when there were the horse and buggy days of the doctors getting around and stuff like that and taking care of their patients and making some house calls and things like that. You know, this younger doctor that might have been about my age might've asked that grandfather or great-grandfather, "What was the greatest innovation in your era, you know, Grandfather, in terms of your days of the horse and buggy and so forth?" And, you know, most of us would think like some kind of, you know, breakthrough with an antibiotic, even though that was well after that, or something like that.

But he said, "Roads." He said, "Roads was the greatest breakthrough." And, well, you scratch your head and say, "Why?" He said, "Because it let me get to my patients faster so I could get there to take care of them."

And we all know that that's an incredibly important thing. There's the golden hour of taking care of a trauma patient for which, you know, air ambulances have made a tremendous improvement in and so forth.

But the digital age is allowing us to get to our patients faster, with better knowledge, with less redundancy. So you're improving care, enhancing cost-effectiveness and so forth. And so I think this age that we're in, and a lot of us that are in the middle of it as doctors, especially in my generation, we kind of come kicking and screaming a lot, but we come.

You know, I mean, the fact I'm carrying this thing around and not a notebook and paper is an example of that, you know? I don't necessarily like it, but it works and my staff make me use it.

But it makes, I know, me a better doctor. I'm an anesthesiologist so I'm in a field full of technology. Absolutely full of technology. We don't have intubations in the

esophagus anymore. It was a common death under anesthesia. You put the tube in the wrong place, and you don't transfer much oxygen when you stick it in the stomach instead of the lungs. And so, you know, patients died under that. It was always a horrific outcome.

Well, we have technology that came about in the '80s that basically eliminated that. You stick it in there, you get carbon dioxide back, you're probably in the right place. Very likely. Stick it in there and you don't get it back, then you're in the wrong place, you know, or your patient's dead. So you've got to do something about it either way.

But, you know, I think that where we have seen -- you talked about specific populations, you know. I think the reality is all populations are having a challenge in mental health. One in four individuals across the country has a mental health issue. I think that's the number that we commonly use.

Now, it could be severe mental

impairment or it could be a more moderate, controlled mental impairment. But it is probably one of the most common maladies that we have out there. But yet, we separate it from physical health, which is a problem that we who are trained in medicine, you know, have built. You know, we have allowed that to happen.

So we have moved forward starting to, in effect, combine that. So that, you know, there is, you know, a combined physical and mental health approach to people.

You know, put some things in place to try create -- take down those barriers so that, you know, when we see people, we don't see them just for their heart or their lungs or the kidney and pancreas and all that. We see them also for their brain and for their mental health conditions and things like that.

And we know that that's probably one of the most important things that we can do, because the average age of death of somebody with a severe mental illness is 50. You know, that's

tragic.

And so it's an area that I think deserves a lot of focus by us as health professionals, people who are interested in health, and us as a state in terms of how we appropriate money to make sure that we're addressing certain areas where there are tremendous needs.

You know, the veterans are a group that all of us, I think, our heart goes out to them. You know, they come back traumatized. There's billboard going into Austin that shows what's killing our soldiers, and they show it different. They show a bullet and then they show other things. And then they show a big opioid capsule. And that's the biggest thing that's killing our veterans right now. And, you know, opiate drug abuse, controlled prescription drug abuse, is one of the biggest challenges we have right now.

So mental health is not just a single -- it's not just depression, schizophrenia,

bipolar disease. It's a whole spectrum of conditions that can dramatically impact people. And we're not going to get it by trying to connect everybody with a psychiatrist or a psychologist or a mental health person. We're not going to get where we need to be without addressing the technological advances that are out there for us to use.

Telemedicine is -- and I know Teladoc is just a phone call of a doctor talking to a patient that's never even seen. You know, it's separate -- a little more controversial than the video telemedicine-type activity that we have out there. I think that's much more well accepted out there.

But I don't think we have come close to really leveraging the value of that technology and meeting urban and rural population needs out there, mental health needs. Any other needs, in fact, that you have out there.

So I'm excited about where we're going. We, as a state legislature, don't get

there fast. But I would say there's a reason for that, because as Ms. Robinson will attest to, the role of the Texas Medical Board is not to protect the doctors. It's to protect the public.

And, you know, sometimes moving fast on certain types of technology might put the public at risk. And that's the last thing that any of us want to do. But my personal feeling is, the most remarkable use of telemedicine has been in stroke care.

You've got a stroke unit right out here in the parking lot, I noticed when I walked in. But, you know, to witness somebody who comes in with a total paralysis through an embolic stroke, and they're in Beaumont or they're in some other "remote location" from the fantastic Texas Medical Center. But yet, through telemedicine and robotics and education on both ends of the camera, you know, you can witness somebody actually totally recover their impaired limb, total hemiparesis resolved just like that, which only happens because you've got

telemedicine connecting the best doctors with the excellence that they have, with people at the other end with fantastic, you know, pharmaceuticals doing magical things almost.

And what would have resulted in a person living in a totally disabled state for, who knows, 10, 15 or 20 years, and the enormous cost that would be, not to mention the quality of life. They within days walk out. You know, I think it's just one of the most amazing things. And it's happened because we have leveraged telemedicine, in addition to all of the other great breakthroughs that we have made out there.

So, for me, telemedicine and the whole digital enterprise with medicine is highways. You know, it gets us to our patients faster, quicker, with more accurate information, and therefore more effective therapy systems.

MS. WINNIKE: That's such a great metaphor with the highways, because we always hear about the golden hour in medicine. Especially in trauma, to make sure that a person

gets care right away.

And we've seen with your example with the mobile stroke unit. We heard earlier about the programs out at Texas Tech in West Texas trying to get care to folks, you know, as quickly. And it makes a huge difference. It saves lives. It improves quality of lives trying to get care faster.

And also it saves money. Because like you said, if you're the difference between, you know, a completely -- a person who is very much incapacitated for many, many years is a higher cost and burden on themselves and their families versus someone who's able to get those kind of medicines very quickly, because we now have all kinds of technologies just to connect people.

MR. ZERWAS: One other just quick thing I'll share with you that's along those lines of what we're seeing happen is my sister is a now retired trauma surgeon from the Army and did several deployments over in the Middle East and Afghanistan.

And we were chatting one day about, you know, things that were happening there. And she said that the greatest thing that has allowed for us to save, you know, the warriors is we can actually do so much at the site of the injury.

So when somebody, you know, falls victim to an IED or something and gets four limbs blown off and there's nothing but a torso left, they live now. They live. Now, you know, the question is if God intended them to live. You know, that's a different story out there. But we have been able to save people with that magnitude of trauma.

That has led to the huge advancements in prosthetics now. So with the prosthetics that you're seeing today -- every war brings some great advancement in medicine. Vascular surgeries from the Korean War and World War II and other things.

But I am convinced that this period of war that we've been in, the prosthetics have just been amazing that have been able to be put in

place. Connecting them now to the brain, you know, so it's a much more natural response that the injured person gets. And they become, you know, engaged citizens again. They're not just people that are, you know, in supportive care. You know, they actually get around and do things.

And there's no shame about having a prosthetic device. Good grief, I mean, if anything, it's just the opposite, you know. And people love to look at the technology and see what great advancements have been made and stuff.

So it's a very, very exciting time to see what's happening, and I know we're a little off topic here for you. But it's, again, just what's happening in the whole sphere of technology out there.

MS. WINNIKE: Thank you. I wanted to bring in Mari Robinson. I'm so happy that she's able to join us, as a regulator with the Texas Medical Board. And we have here the FCC, also federal regulators.

And a lot of times, you know, in

healthcare and other areas, people say, "Oh, regulations. Bad." Or "Regulations, we don't know what's going on." And so I would love for you to just give us an overview about what does the Texas Medical Board regulate and where is their role with our mental health regulations here in Texas relating to physicians?

MS. ROBINSON: Okay. So I've heard several different threads of this argument sort of touched on today. You've talked about, you know, funding and where that's all going to come from. You've talked about scope of practice, which is going back to this idea of teams and who's going to do what.

And then obviously just the very basic, most on-point regulation, which is what does the Medical Board rules say about telemedicine, particularly, in line with behavioral health, right?

And so I'm going to start with that piece, because obviously it is the most pragmatic of all of that. And right now, actually, with

the Texas Medical Board, when you're talking about behavioral health -- and I should note. This is an issue that TMB has been working on with the stakeholder group for seven years now. And we've gone through lots of iterations.

As the technology continues to develop, the rule continues to change. And they foresee that continuing to happen, because you can't know a year from now what it's going to look like. The rule will need to adapt to take in that newness, right? Like now we're working on expanded call coverage and things like that.

So, going back to behavioral health. The Medical Board rule is very, very broad in relation to medical health, in that, you can absolutely do behavioral health over any telemedicine device. And you can treat a patient that way and establish care that way, unless they are having what is defined as a behavioral health emergency. And we're relying on the definition assigned by Health and Human Services for that.

But to save you all from reading that

tonight, I'll tell you what that is. And that is definitionally that a determination has been made that any attempt at talk therapy has been deemed to be ineffective and that the individual is a present danger to themselves or the people around them.

So obviously, that is a very high standard for that to have to kick in. Otherwise, behavioral health can absolutely be done via telemedicine. It can be used to establish that relationship. It can be used to continue that relationship. And it can be done in any physical setting.

That's what the medical board allows; however, the limiting factor on this is twofold. Number one, there's a federal law and it's called the Ryan Haight Act. And I'm not sure how many of you are familiar with it. Probably a lot you if you're attending a health law conference.

But in general it says you cannot prescribe a controlled substance to an individual without examining them in person first. Not face

to face. Not through a telemedicine medium of any kind. It could be the most heightened telemedicine thing that you could think of. It could be a hospital ER with a nurse standing there. It still doesn't meet the standard under federal law. The doctor has to see them in person.

Now, why is this? I will tell you this law was created for an entirely different purpose. This was before telemedicine was -- it might have been a twinkle in someone's eye, but that's about it, right? And what was happening is folks were selling opioid drugs online over the internet. And unfortunately, a poor soul, Ryan Haight, died from an overdose of purchasing those drugs.

So what we would up with was a very broad law prohibiting all controlled substances, which unfortunately a lot of psychotropic drugs fall into that category. They are controlled substances.

So there is no way to prescribe those

over telemedicine under current standards. The most common drug you're going to see that with for a particularly children are ADHD medicines. Those are schedule two and schedule three drugs. So you cannot start that care relationship, under federal law, without seeing that child in person. That is not a medical board rule. That is a DEA law.

Now, the federal law does contemplate the idea of creating a registry to allow for exemptions of this. And there has been an ongoing dialogue with the DEA from several parties in Texas to try to see if there is a way to get this registry up and running, particularly, for state programs for behavioral health in the underserved areas. And it is my understanding that they are presently working on that.

Now, I haven't seen anything be published yet. I'm told that passing a rule is still faster than passing a federal law. So we are following that. And I'm actually meeting

with some DEA representatives on that in a couple of weeks. But right now, your limiting factor -- at least as far as the legal aspect is concerned -- is that federal law, not the board rule.

Your other issue that has been touched on is the serve, skip or practice issue that you're talking about. And when that dials back, what you're looking at in the State of Texas is the idea of diagnosis and prescription of drugs.

These are the two areas that are the most tightly controlled and regulated, deemed to be the practice of medicine as far as the statute is concerned. And as it stands right now, that can be done by a physician. It can be done by an advance practice nurse. It can be done by a physician assistant, with the latter two having had established a supervisory and delegatory relationship with a physician.

And that's where that stands in the State of Texas right now for that level. Obviously, when you're talking about psychologists, you're talking about talk therapy,

that type of thing, that's not necessarily going to fall under that realm. But when you're getting into the more advanced stages of diagnosis and prescribing of drugs, you've got that factor that you have to consider when you are putting out these programs.

And this is actually statutory. This is not a board rule. So for something to change in that, that would be a legislative consideration, whether they thought that was appropriate to do or not. But that's how that exists right now.

The idea of follow-up after being seen in a hospital is absolutely permitted right now under the board rules. So if you went to a hospital and you got a diagnosis and they wanted to do follow-up with you through any modality, that would be permitted. Because that physician/patient relationship or PA or a PN or whatever the appropriate provider was, was established through that hospital visit.

And as long as the standard of care is

being met, you're golden. The board thinks that's great. They want that sort of expansive thing to happen. And the west Texas stuff overseen by Dr. Phillips, is a wonderful example of that.

Using the ENTs, stocking them with technology, sending them out into the community to gather that diagnostic information to make that initial diagnosis, to establish that physician/patient relationship and then allow follow-up to up to a year through whatever other modalities are important.

Now, I mentioned one other limiting factor and here's what it is. It's the standard of care, right? That is always going to be the bedrock of what the Medical Board is falling back on. And I am not going to in any way represent I can tell you what it is. You remember the lawyer intro stuff, right? I can tell you what the law says. It's up to our board to say what the standard of care is and the medical community at large.

But, I can tell you that in general when you're talking about a lot of psychotropic medications that are out there, testing is required. You know, you have to have blood work done to check for certain enzymes. You have to have follow-up done that is going to require -- as of right now -- somebody to draw that blood, somebody to analyze that blood, et cetera.

Urine screens may be necessary if we're talking about addiction treatment in this realm. It really just depends on what it is you're talking about. Every diagnosis is unique. Every diagnosis has its own standard of care. And every diagnosis is going to have to have that plan. Not all of it can be done over the phone as we sit here today.

My joke has always been, someday my iPhone will take my blood and tell everyone I want it to what's going on with me, right? And I'm hoping I'm retired by that time, quite frankly. I don't think I will be though, given the rate that technology is going.

But as it stands right now, we don't have that capability. And what the board's primary concern is, the idea of subverting the standard of care for the sake of convenience. And that is the primary issue that they see with some of the models that exist.

Most of the models that exist absolutely are permissible under the law. They meet what the board's standards are. And I think just a lot of people don't flat out know about them unfortunately.

I've had somebody say to me, "Well, I hate seeing that burn victims have to come to the hospital after they've been there once for follow-up. It's a terrible trip for them to have to make." And that broke my heart a little bit, because they don't have to come back to the hospital. They don't. And I would hate the idea that they're making that trip because somebody doesn't understand the law.

And so that's sort of where we are. We are in an area of misinformation in a lot of

cases. Not every case, but in a lot of cases. And so the challenge is to tailor the laws and the regulations in a way that balances safety with the available technology to leverage that to get care of effectively to the most people they can.

But, I can tell you that the board is never going to think it's okay for it to be convenient if the standard of care is not being met. And that's just sort of their fine line on all of this.

And I also appreciate the ability to participate today also. Thank you for having me.

MS. WINNIKE: Thank you for coming. This is actually an excellent description of how there are so many complexities with our, you know, State of Texas laws, the federal laws, our regulations here, federal regulations. It's not a monolith. There's a lot of things going on. And like you said, a lot of information.

In my own plug, it's good to know a health lawyer here at the University of Houston

Law Center, number two ranked health law program in the country. So I know where to find some if you're looking for some. That's my own little plug.

But this really moves onto Nora and -- who is with the Texas e-Health Alliance. And you represent all of these great organizations and companies in Texas who have these great technologies. And I wanted you to talk a little bit about the types of technologies that your alliance members use and want to use and where you would like to see things moving on the legislative and regulatory side.

MS. BELCHER: Sure. So, my wishlist. That's a dangerous question to ask a lobbyist in the summer before our legislative session.

I think there are three things that are really important here. We talk about broadband -- and I've been in this fight since the 1990's. So I used to be fighting about how fast can we move the data. And now, my people can literally build you anything. Isn't that

exciting and terrifying all at the same time?

If you can conceive of an app or a delivery methodology, we really can build it and craft it. So I think the first thing is it's incumbent on our industry to listen very carefully to our providers and to our patients. And the most successful models that I am seeing are coming from providers and patients coming to the technology community and saying, "Can you build us a telemedicine model that helps us with call coverage?" "Why, yes we can." And we can pitch that to the medical board and they'll think it's a good idea and they'll help us make it real.

So it's not so much that we are sitting in our basement laboratories, like, cooking up stuff. I mean, there's a little bit of that. Some of that's kind of cool. Don't get me wrong. But the models that are going to stick are going to be the integrated models.

The models that engage the consumer, their family, their providers, their care team,

their community in all sorts of ways. Because it's going to be different depending on if you have a mental health diagnosis, if you're post discharge with a knee injury.

I like to use the phrase "the last mile." And telecom people always look at me and they're like, "You're stealing our phrase." Yes, I'm stealing your phrase. It's very important. Because to me that last mile is the gap between the physician visits.

Because what do people do? We go to the doctor. They tell us what to do. We nod politely. We maybe pick up our drugs, maybe we don't. We don't make the behavioral changes. We come back in six months and we're pissed because our health status has not changed.

So the models that we're seeing, whether it's what Valera showed today, other things that being cooked in the incubator. I work with South by Southwest. They had 5,000 people come to the health care expo at South by Southwest in Austin this year to look at the

virtual reality apps.

We're going to have virtual reality apps that are going to let physical therapists move patients at a distance and participate in therapy without having to be in the same room. There is -- I mean, I get goosebumps talking about it. There's extraordinary stuff coming down the pipe.

But at the end of the day, there is -- there are those things. We have to listen to our providers. We have to listen to our patients. We have to focus on closing those gaps in care. And we have to not forget that high tech doesn't always mean we don't have high touch.

The really successful implementations to me are the ones who are going to automate the routine, like my watch is going to take my blood, check my insulin periodically and send that to my doctor. And that's going to relive my stress and my provider's stress, because now I know it's being checked. But that's also going to mean I'm actually having more contact with my nurse

practitioner, because they know what's happening with my blood sugar levels.

It's the combination of high tech and high touch that is transformational when it comes to these technologies. And so when I look at what my companies are doing, the place where we're seeing the most success is not where we brought technology in and we expect you, doctor, to change and adjust to the technology. It's where the technology comes in and it solves a problem and it frees up our very precious resources so they can be used in the most effective way possible.

It's an extraordinarily exciting to be in this space because of what's possible. But it's got to be collaborative and it's got to be built around the patient and it's got to engage with providers. And if you do those three things, the sky's the limit. And that phone app that she's talking about, it's on its way. Home blood testing is one of the hottest start-ups in the market right now.

People want access to their information, because the consumer revolution is coming, people. And as providers, you all better be ready. Because when the Baby Boomers wake up and realize how lousy the health care system is, do you really think they're going to settle for things as it currently is as a generation? Wait until they hit the long term care system. That is going to be epic and not in a good way. So if you're looking to make an investment, that's a space that's in desperate need of innovation and technological change.

And I will stop there because I know we're over time. But thank you for having me. Thank you for not having me interrogated by these two. That's usually my life.

This is an amazing event. And I so appreciate the FCC coming to Texas and signaling that there are partnerships that we can have with federal partners as well. That's extremely important. Very, very important.

MS. WINNIKE: Thank you so much. And

I want to be able to open it up for questions. But I actually have a person I want to ask a question to first, because I want to bring this back to Lex Frieden's keynote earlier talking about access to care.

And I know how important it is -- and you mentioned this earlier -- to have access, especially for individuals with disabilities. It's a real issue. And that you feel like technology is a way that we can increase access.

And access is an issue for a wide spectrum of folks in your particular expertise with disability. And I wanted to open the floor to you and see if you had any questions or comments related to that about things coming up in the new legislative session that will start soon and things that you might be looking for on the access side.

MR. FRIEDEN: The House has a number of issues. Pointing to the analogy very quickly. Thanks. In 1989, the first congressional hearing on the bill outside of Washington was here in

Houston, Texas at the service center. And Congressman Steve Bartlett, who was the ranking member of the committee that was leading the bill negotiation, was a friend of mine. And we picked him up the airport and dropped him off at his hotel.

And my wife, who was driving, said, "Congressman, let me know when you'd like me to pick you up for dinner." And he said, "Well, I'll just give you a call." And he reached inside of his bag and he pulled out a brick. And my wife said, "What's that?" And he said, "Oh, it's a mobile phone. Doesn't everybody have one? You should have one, particularly if you have a disability and you might get stuck on the roadside." And my wife was like, "Wow. You know, he doesn't really get it?"

And I had the same feeling when I come to these kinds of meetings and hear high tech companies talking about the next step forward. You know, the wheelchair with brains and all that. Most people that need a wheelchair like

that don't ever get it. And I'm not sure that the people who are racing ahead with the broadband development even get it.

Because in doing so, without starting from the bottom to be sure that it is inclusive technology, they are missing a large part of our society and a large opportunity that we have to make lives better for people.

And I just think we have to concentrate on what happens in the beginning of the process. And in Texas, we're proud to say, "If you're not going to play our rules, don't play." Why don't we in Texas say, "If you're not going to provide accessible software in our state, you're not going to play. You can't sell it here." You know, where are we going to reach?

And over the internet. There is internet a lot of places, but if you're not ready to go into a restaurant and pay for a meal, you're not going to get that password. Why is that? I mean, every restaurant on the block has the internet. Why aren't we saying if you have a

public internet, then make it open to the public?

I'm not saying every individual that has in effect put in a modem has to make their wi-fi internet to people on the streets open. But if Xfinity -- most people don't know that if Xfinity is using your modem for a public/private internet that they've got where you have to a subscriber. You know, why not make that open to the public so that people who need it, who can use it and perhaps benefit from it the most, have it?

MS. WINNIKE: Thank you. Thank you. Would anyone like to respond a little bit about the access issue?

MR. COLEMAN: Well, access is real. It's a real problem. In Texas, we were supposed to expand broadband across the State and we voted on a bill in 2006. But what got squashed was municipal wi-fi and municipal connections, which were to be free. So we actually lost the opportunity to have free broadband in the State of Texas actually operated by our larger

municipalities.

Now, that of course, wouldn't help every other region of the State. We were also supposed to have connections into all of our schools, which meant that public schools, which meant that that would take that throughout every community and have that availability. And that just didn't happen.

There still is a digital divide. There are some people who, you know, get it -- just like you said, they may get it at a restaurant. But libraries have not been able to keep up with the demand and also the cost of being able to afford connections to the internet.

I think I pay -- at one time I had three internet connections and I think I had -- it cost me $200 a month. That's a lot of money, folks. And it hasn't gotten much better. But it's getting better. But it hasn't got much better. But the promise of municipal or other types of wi-fi or connection dying is really what has exacerbated the divide, because it requires

the kindness of others in order to be able to afford it.

MR. ESCRIBANO: Thank you. Thank you very much. Glad to be here at the University of Houston, for the Center for U.S. and Mexican Law. And my question is for Ms. Mari Robinson. I have seen great fear -- have great fear of the system allow doctors to treat after this first interview or consultation.

Now, I think -- and I know the rule isn't new. The initial rule going from year to year. I would like to know the Texas Medical Board's advice, for instance, we've been hearing before that we have at Texas Medical Center's 21 hospitals. Much of that is one pretty much -- or very much focused in cancer.

A person that is restricted with cancer here, but then that goes outside from the State. Then this possibility is not -- is not for the doctor. So I mean you will listening --

MS. ROBINSON: I'm trying to figure out your question. Are you saying that if you

got treated in the cancer center here, and then you went to somewhere else, you moved out of Texas, whether you could get care or not from that Texas physician? Is that what you're asking me?

MR. ESCRIBANO: Yes, I mean, your example was very clear as if the person that got burned that came. You said he shouldn't come, because he could have had treatment with telemedicine.

This person could have had treatment being burned in California with a doctor here?

MS. ROBINSON: So you're touching on a fourth issue. Okay? And that is licensing, right? That's a completely different issue. And that is almost -- well, I'm not aware of any state that would tell you that it is okay for you to provide health care in their state without being licensed, right?

And hold on. I see you're right. But let me finish up. The reason for that is, there's no way to oversee the practice if they're

not licensed in your state. What you would do would be to drive the incentive towards treating people who are in your state so that you would be liable to no one, right? Because you would treat California people. You live in Nevada. You don't have California license and California can't do anything to you if that all goes badly, right?

I've had people say to me, "Well, why don't we have a national license the way that you have a driver's license and you can go from state to state to state?" And my response is, "You can absolutely do that, as long as you are willing to be liable to the state of New Mexico for whatever goes wrong with your treatment of New Mexico patients." You could create that. Just like if you were driving through New Mexico and you got pulled over, you would have to pay that New Mexico speeding ticket.

But every time I've said that, every doctor looks at me like I've lost my ever loving mind, because they do not want to be responsible

to all the other medical boards in the State. But you could absolutely create that if you wanted to. But there's got to be an oversight piece to that.

Licensures is only one half of the regulatory scheme. That's the gatekeeping half. We're ensuring that you're able to get through this door. The other half is once you're through that door, we want to make sure that if anything goes on or you stop being able to do it, we have a mechanism to take care of that for the public.

So if you can create a situation that addresses both sides of that, you could have a national license. And then it wouldn't matter where the patient was or the doctor was.

MR. ESCRIBANO: Yes, but I mean, hearing your -- your prior proposition, you could -- I understand really this person shouldn't be moving. But then only the Texas person. And that's what my question was actually.

MS. ROBINSON: Right. It's licensure.

MR. ESCRIBANO: What is the Texas

Medical Board doing in order to really make the telemedicine effective because telemedicine intends to actually go beyond the frontiers. And it will help us fight shortage of medical doctors to educate.

MS. ROBINSON: It's licensure.

MR. ESCRIBANO: And then, like, federal assistance. It's federal assistance or it's Texas Medical Board trying to influence the legislature in order to say, "Yes, we can introduce this position into the law, telling with this aspect and with this and solving the problem.

MS. BELCHER: Right. And I understand exactly what you're saying. In the Veterans' Administration, they are liable to the Veterans' Administration so both pieces are there.

If you want national licensure, you have to have both sides. And the problem with the things that have been proposed, they only have the first. They only have the licensing aspect. They don't have the follow-up aspect. There is -- you can't -- well, you can. If you

don't care anything about enforcement you can say, "Anyone with any license can practice on any patient anywhere." But then there is no oversight or follow-up, because no one has the authority to do that.

I, as the Texas Medical Board, would not have the authority to do anything about a doctor living in Louisiana who did something to a Texas patient. That's how the jurisdictional laws are created. There's no jurisdiction.

So unless when you create a national license, you create that enforcement jurisdiction, you're only solving one half of the problem, right? And you get rid of the other half of all of that.

So unless that can be addressed, you're going to continue to have these walls between who can treat what. It's not to say the issue can't be fixed. It can. But it can't be fixed intelligently by simply saying, "Now everyone can do anything everywhere and there's no oversight at all."

MR. ESCRIBANO: It's not that simplistic. But if we know exactly how to deal with these three issues you mentioned, there is the possibility of really making telemedicine 100 percent.

MS. BELCHER: Well, there's that pesky 10th Amendment where the states retain some sovereignty to make some decisions. And states regulate things differently.

So there is not even agreement necessarily on the standard of care of practice when you cross state lines. So the solution the industry is using is actually just to have our physicians credentialed in multiple states.

And there is an interstate compact for the exchange of licensure, which we made a run at in this last session and we'll make a run at it again. Nurses have one. EMS just did one up. That expedites the credentialing, but protects the sovereignty of the individual states and their ability to protect their individual patients.

So until you get rid of the 10th Amendment, you're going to have this sticky wicket of the States' sovereignty over the people who live in their states. For the companies that I represent, who I have doctors credentialed in all 50 states. It's a pain in the butt, but it's doable within the current regulatory framework.

Congress has shown no enthusiasm for national licensure. So the interstate compact is the compromise. And we have, what, 14 states onboard at this point?

COMMISSIONER CLYBURN: Yeah. It went live. More are looking to pass.

MS. ROBINSON: So at some point, if all 50 states are in the compact, your problem is solved because then it will be easy to get expedited licensure in whatever state you want to treat a patient.

MR. COLEMAN: We can find the solutions, I think. But I find it -- maybe it's my on perspective. I'm sorry about this. It's just more integration is that thinking that we

have this human capital extremely trained.

MS. BELCHER: Again, that pesky 10th Amendment in our Constitution. You all don't have it. We do. And it's very, very jurisdictionally and legally important, because if you've been to one state in the U.S., you've been to one state. We have an enormous amount of variation culturally, regulatorally. The north eastern states are different from the western states. And we like it that way. So I think it's unlikely that there's going to be a change. I'm speaking here as the lobbyist again. I think it's very unlikely that there's going to be a change along those lines.

MR. COLEMAN: The technology is there.

MS. ROBINSON: That's not the issue.

MR. COLEMAN: You can do it.

The other side of this is -- is develop medically liability body of law. Texas has some very strong protections in there with regard to medical liability. It makes it a very attractive place for people to practice medicine

in a less onerous, you know, perspective when it comes to the Court and stuff, you know.

So, you know, there are some states where it's still not very comfortable out there. You know, so -- and there's lots of different ways that people have tried to deal with that particular aspect of medical practice.

So, again, there may be similarities between certain ones. You know, Texas and California have some similarities in their court laws, you know. But Louisiana, Florida, they've done different things. You know, and some haven't done anything. And they continue to pay, you know, pretty enormous medical liability insurance rates as a consequence of some of those things.

MS. WINNIKE: And I think we have time for one more question.

MR. GIBBONS: And if I may give Dr. Zerwas credit, because he has been working on the compact. And it's very important. And he's done a really good job on that. And I think that needs -- the preliminary.

MR. PARKS: Hi. My name is Michael Parks. I'm from Bryan-College Station, Texas. I guess this is for Dr. Gibbons dealing with the FCC. We're getting ready to submit for about a 27 million dollar fiber bill for one gig in our region for Healthcare Connect Fund with healthcare consortium.

And I'm just curious if there's another outside-the-beltway Congress plan for access to the funding for these things. We've talked about access all morning and all afternoon.

In the rural areas it costs a lot. It costs a lot to get that farther out there. Under some of the old Healthcare Connect Fund rules, the match wasn't quite as great as it is now at 35 percent. And actually, we went backwards for our local communities to actually fund their portion of that.

So is there anything in -- in the whole bag of tricks at FCC or USAC where it makes it a little easier for us rural communities?

MR. GIBBONS: Well, let me say one thing. You're familiar with what he's asking me. Does everybody know what he's talking about?

COMMISSIONER CLYBURN: Again, we've made -- as you just put forth -- some great strides in terms of addressing some of the issues, and the biggest issue is cost. Some of the other challenges, when you talk about -- I think it was mentioned this morning about some of the cost -- just sheer cost of T1. I believe my new friend had mentioned that earlier.

What we're debating, what we're talking about, is how to normalize or, you know, how do we get more harmonization as it relates to price? Because when you go from one county to another and there are vast price differentials, what's the justification for that? It can't all be topography. It can't be all of that.

And so I'd encourage you to really challenge the FCC and challenge the providers and challenge the lawmakers when it comes to these, you know, sometimes price disparities or, you

know, these other disparities. Because if you don't speak up, it remains the same.

MR. GIBBONS: But it's disparities is what caused it. We're actually building it because there are no providers.

COMMISSIONER CLYBURN: Oh, yeah. So there are a number of issues, you know, that -- it's expensive because of the cost disparities from some of the, you know, providers.

MR. GIBBONS: Sure.

COMMISSIONER CLYBURN: There are areas -- I call them "unhealthy donut holes" -- where there's no -- and you mentioned some of the issues with some people -- with some entities wanting to provide their own services. There are state laws in place, including my home state, that have high barriers for local municipalities that might want to address the digital divide.

So, you know, these are all the things that we have to, you know, kind of reset our own current way of thinking and challenge ourselves. What do we really want here? I mean, do we truly

want our communities to be connected affordably? Do we truly want ubiquitous service? And we really -- and I think conversations like this -- and I guess I'm almost incorporating my closing -- conversations like these really help. Because we all need to be -- you know, have resets and re-calibrations and get re-challenged to exactly what the issues are, because we get comfortable in our norms.

The biggest thing that bothers me today, with all due respect -- and this is not your question. But I'm a PK, a politician's kid, so we ask questions the way we want. Is that we get -- we are very satisfied with what we experience and what is defined as normal, even when the consequences are abnormal and dysfunctional.

And I think if we continue to challenge ourselves that this is unacceptable. You know, having 35 million people with no prospects of connectivity, that's unacceptable. Having millions more -- you know, being unable to

afford it, that's unacceptable. Having two thirds of the 53, four, five, six -- 56 million people with disabilities not even beginning to afford what could just propel all of us to the next level, this is unacceptable.

So if we accept that baseline as being unacceptable, then I think some of the questions and challenges that you and I will have offline and the particulars, and we will have that in a few minutes, that we can tackle them. Because I just do not believe that -- I don't know if it's the southern in me or the what in me. I just do not believe that the norm is not working for every single American is acceptable.

I refuse to believe we can't solve it. Technology will propel us there. But just like you said, that touch is going to be the magic key. Because the last thing you will hear me say when I am -- which is not the last one -- I always say that technology is agnostic. And that's the one time you will hear a southern person use the word agnostic. You know,

southerners don't use the word agnostic, because we believe in some religion.

But what I will say is it -- this enables. So technology will make us better at what we are proficient or good at. And if we're better or proficient at perpetuating divides, then the divides will get wider. If we want to be better at building and bridging and improving connectivity, we will do that and we will do it soon.

Chris, you want to really answer the question?

MR. GIBBONS: Only one thing.

COMMISSIONER CLYBURN: Thank you so much.

MR. GIBBONS: If it weren't for the FCC, you would not have this opportunity. So I thank you very much for allowing us to have an opportunity like this.

MS. WINNIKE: So I want to thank our distinguished panel right now for their wonderful, wonderful contributions today before

we have the Dean and the Commissioner, give our closing remarks. So please join me in thanking our panel. Thank you so much.

COMMISSIONER CLYBURN: Again, you saw the preacher in me. Sorry about that. Again, if you will join me in thanking -- thank you, Professor, Allison and the Law Center. I'm sorry. Everybody at the Law Center for today. And the FCC, of course. The Connect2Health Task Force.

We want to hear from all of you going forward. And we don't want to trip up a law. Hopefully, this will just -- is just the beginning for some of us of what will be an ongoing, elaborate and beautiful friendship.

So let me say again how amazing this dialogue has been today. Every panel and speaker brought different perspectives that we all needed to hear. And it was enlightening, stimulating. It was just absolutely terrific.

We have an ongoing commitment to supporting innovation and health. And we want to ensure that connectivity is reality in all of our

communities. We have no desire to stifle innovation, and we will prove that each and every day with proactive and forward moving innovation and regulatory policy.

But none of this will happen if we do not work together to solve any existing policies or regulatory bottlenecks that we currently have. And we have a couple. We have enumerated many of them today.

So Dean, Professor, and all of you, this has been an incredible visit to Houston. I've enjoyed my trip to Texas. I'll figure out how to do that Southwestern plane a little bit. And I am really looking forward to really working together with all of you today and going forward.

And Dean, please, if you would close us out.

DEAN BAYNES: Sure.

COMMISSIONER CLYBURN: Help me out here. Thank you so very much. I appreciate it.

DEAN BAYNES: Thank you, Commissioner Clyburn. It's been a pleasure working with you

and with the Connect2Health Task Force. Michelle Olsen, I know you're looking and participating via stream. And all the rest of the Connect2Health Task Force who have worked with our health law policy institute to make this happen.

This has been a very memorable conversation and conference where you learn from each other about very important issues and ways to make sure that we provide access to broadband technologies to all communities, especially in the context of mental health.

And I think it's the beginning of a great partnership with the FCC. We're very pleased. And we volunteer to have additional conferences here. As I said, we will be the southwest outpost for the FCC into the community. And so we love that.

And so I want to thank the whole Connect2Health Task Force, Michele Ellison, Karen -- used to be Brown -- Onyeije -- I knew her when she was Brown. She went from a name that were

millions in the white pages to one that was more exceptional.

The entire Connect2Health Task Force. Our own professor, Allison Winnike. Let's give her a round of applause. She's made this dream a reality. And all of the health law and policy institute folks. Our co-director, Jessica Mantel. Our Director, Jessica Roberts and two research professors, Daphne Robinson and Stephen Chen. Without all of their efforts this wouldn't be possible.

And as I always talk about, this is sort of the power of legal education of bringing people together to learn about really important issues. And it's one of my aims as dean of this great law school is to be this place, this forum, for us to discuss these hard issues and to come to resolutions of them. So again, thank you so much.

(Whereupon, the above-entitled matter went off the record at 4:00 p.m.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Broadband Prescriptions for Mental Health: A Policy Conference

Before: US Federal Communications Commission

Date: 05-18-16

Place: Houston, TX

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R. Gross

Court Reporter