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Hello and welcome to our fostering innovative resilience of clinical service to major disasters. And today we're going to be talking about the resilience of health care. And as we all know, in the last two years, perhaps for more than two years, we have been suffering through lots of them a lot.

And because of COVID 19, so we all know appreciate just the healthcare was always appreciated, but also appreciate the resilience of healthcare systems and how this needs to work, you know, really the resilience way. And so far, we did a lot and a lot of reading of research.

Think about health care. And we tried to address it. We're talking about in this election, generally speaking, and we try to understand this complex system, how it works. But we always, always get to the point. I would say, Oh, we haven't really done much that we need to do more.

So today we are going to learn more and more, hopefully from our practitioners, from all the researchers, from our International Board of Speakers, who come from different parts of the world to explain to us and different, different backgrounds who expect to us.

That experience spoke to their opinions and findings. So it's a great pleasure to welcome all my colleagues and if I start with Dr. Ahmed, they say. Look, can you please introduce yourself? Thank you so much, Jacksonville. My name is Ahmad.

I'm a consultant on East Oxford University Hospital. I have a lot to say in the next ten minutes, so let's get started. Let me, can you just confirm that you can see my presentation? Ahmed, if can we start first of just introducing ourselves, please?

So if that is OK, so can we go to Dr. Alexandra? And then we go back to to the presentations. Okay. Until. Thank you. You're thinking about it. My name is Alessandra Lamberti, Gastineau, and I'm an emergency physician at the Piedmont Hospital in Italy.

And at the same time, I'm a researcher at the Center for Research in Global Health, Disaster Medicine and Humanitarian Aid and Global Health in Nevada, Italy. Thank you so much. Thank you, Alexandra, and can we get some water, please?

Hi, thank you, thank you, I'm Bill. My name is Muntaka. I am a medical doctor, anesthesiology and critical care physician in Bagram. And I'm also a researcher at the same center that Alexander is a researcher at, which is located in Nevada, up north of Italy.

We came out them. Saying Dr. Hussein Kushaq, thank you, Dr. Neville. I am seeing each other and I walk to University of and I can also cause my university and emergency aid and disaster management departments and Turkish Red Crescent Emergency Operations Center.

The consultant director of Channel. Thank you so much for coming. Thank you. And Professor Don Barnett joining us from the US today. All right. Apologies. Can unmute yourself, piece your first apartment. Professor, amuse yourself, please. You are unmuted.

Is that better? Yes, thank you. My apologies. I'm Dan Barnett. I'm an associate professor at the Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland, USA. And my background is in general preventive medicine, and my research is on public health, emergency preparedness, response and recovery systems.

Thank you. Thank you. And we have Helen A.C. joining us from Addenbrooke's Cambridge. Kind of, Bill, thank you very much, yes. I'm Helen. I'm a specialist nurse and transplant transplant coordinator and was redeployed into the ICU during COVID.

Thank you. And finally, but not last time. We've got people aids people joining us from Papworth Royal Hospital. I managed Keep People's and I'm the chief allied health professional role, Papworth Hospital in Cambridge in the UK. Nice to meet you.

Thank you. But we have two other members who are hiding in the background, so we have, first of all, Professor Premiere, Foreign Minister Who's who would be joining us to end the discussion of the announced the end of the of the panel.

And you want to introduce a sense of place. Thank you, Neville. Amir Emanation Trauma and disaster medicine specialist, Gothenburg, Sweden. Thank you. And the last soldier who has been standing beside me in the background somehow, so it's so well, we've got the Humvee and the El-Amin who's joining us from Italy.

Thank you. Thanks so much. I'm Hamdi, I'm an emergency technician and recently a research fellow at Premiere in Italy. Thank you. Thank you very much all for your contribution and for your help. And so last thing is perhaps to talk to or to announce this to the audience is that you have obviously the ability to to ask

your questions and make comments. And normally you would do this through the chat opportunity teams that allow us to have many people talking at the same time. So we're so aware of the time here. So, so shall we start with the presentation of the piece?

Thank you. Thank you so much and of you again. Just trying to get the presentation up. All right. Is that visible? Yes, thank you. And. So hi, everyone. My name is Ahmed. I'm a consultant, anesthetist and Oxford University hospitals.

I'm not going to be talking about what happened during COVID, especially today and start redeployment and the bed shortage and expansions of work walls today, because I believe all my friends will be telling you a lot about that.

But today I'm going to be talking about something more global, which is the challenges facing us in terms of resilience for the health care systems of less than ten minutes. So let's get started. I have no conflict of interest to declare.

This is Oxford. Come and visit us. Don't come in winter. It's too cold. And this is Oxford University hospitals where our work starts with defining resilience. The topic today, according to Oxford Dictionary, it's the ability of an object to spring back into shape.

If we are talking about a person or a process, it would be the capacity to recover quickly from difficulties if we need to apply that to health care system. There is a systematic review that is harder to define resilience and health care system as the ability of the system to adjust its functioning prior to during or following

events, and thereby sustain required operations under both expected and unexpected conditions. If we try to globalize the definition, it would be a system or a plan that can be applied internationally to any healthcare system to allow those systems to function normally during disasters and minimize the impact imposed by any unexpected disaster on those systems by mitigating the

known risk factors and weaknesses. So the big question is, is it doable? It might be. Of course, we haven't done that yet, but to do that, we need to understand the different health care models around the world, identify the problems, analyze the factors that make them not resilient.

Find a common ground to start building that plan. The models, when you study them, you need to understand the finance, the care provision, standards of care and the workforce. Starting with the finance, there are lots of articles on paper talking about different ways of financing health care systems around the world and in Europe.

But generally speaking, we have a national health insurance which covers everyone in a certain country, and everyone contributes to a certain extent while everyone is covered for everything. And there are social insurance where people choose how much they participate into that system to get covered for how much of the health care service and there are other health

care systems around the world other than those effective ones. You can call them the La La Land systems or every man for himself systems, which was basically nothing but from the patient's point of view. The patient always asks, do I need to pay for the service or not?

And if I do need to pay the insurance tax or out of pocket and if I don't need to pay, do I get a good quality service? And if yes, this is the best health care service in the world, and I don't think that exists.

But if I do need to pay, do I get a better service which make it unjust? Generally speaking, the red so-called ones are the ones where the patient it's his responsibility to find the proper health care service during disasters.

Since we have mentioned the quality, we need to all to know that there are six domains for quality in health care service which is safe, effective, patient, centered, timely, efficient and equitable. It's beyond the scope of this lecture to discuss them, but we can talk about them later.

But this what made the World Health Organization to come up with the concept of the universal health coverage UHC, which means that all individuals and communities receive the health care service they need without suffering financial hardship. That includes full spectrum of essential quality health service, from health promotion to prevention, treatment, rehabilitation and palliative care across the life

course, and to see how bad we are in doing that. We see this map of the indicator, and only the dark blue countries have achieved some extent of the UHC, and no surprise it's North America, Australia, Europe, UK, Scandinavia and China.

And that map showed us the under basal conditions what this one is talking about when disasters happen or catastrophic problems happen. And the dark shaded countries actually shows that people spending more than 10% of their household budgets annually for catastrophic health problems.

Even more than that. Those dark shaded countries spend more than 25% out of pocket of their household budget for catastrophic health problems. So if you draw a spectrum of the health care finance around the world, you won't have 100% chargeable, low quality to 100% free, high quality.

And the countries of the world will be somewhere in between. In some places, you might need to start your own drug dealing business to get treated from cancer, or you need to hijack a hospital to get a surgical operation done for your children.

Or you simply die because you don't know that the service you need actually exists. If we take some examples, we can talk about the NHS in the UK, which is tax funded 100% free at the point of care.

It's not profitable for the strict rules which call the NHS Constitution. You can find it on this link, but of course, there are downsides, which is low efficiency, long waiting times and futility. But if you move across the Atlantic Ocean to the UK, you you'll find the money based system with big bones being profit making.

So someone has to pay, which is usually the employer through different insurance system, but normally it's still a high efficiency and high quality system, depending on how much you get paid, how much you earn or can afford. Such systems has high quality and efficiency, with good financial incentives for providers to work and more for companies to innovate

. What seems to be not fair? And in other countries, as we mentioned, the La La Land and every man for himself, if we have a quick look on those charts, just this number here says how much the country spends for health care per capita per year.

So in the UK, we have about $4.5 thousand per capita per year. Most of it comes from public funds into public services and a little bit out of pocket patient pay directly to private health care. And if you move in Europe, we'll find Italy less money.

$3,000 per capita per year, but more out-of-pocket and more in the private system in Turkey, much more out of pocket and in the private system, and much more contribution for much less money. And in the US, a huge out-of-pocket and voluntary contributions and huge private sector for much more money, which is $11,000 per capita per year in

Tunisia, almost 5050 out of pocket to private for only $230 per capita per year. And in Egypt, much more out of pocket for only $150 per capita Afghanistan. Every man for himself, or only $65 per capita per year.

And all of that was under blizzard conditions. No disasters. So when disasters happen like COVID? Lots of questions needs to be answered. Where we have to get the money from, how to formulate the budget so we can provide the service for people irrespective of their ability to pay.

So the World Health Organization investigated all those finances and in practice, they said the health financing reforms cannot simply be imported from one country to another, given the unique context. So the general guidelines is moving towards predominant reliance on public funding sources, reducing fragmentation and moving towards more strategic purchasing of services and aligning coverage policies.

That was about finance. If we talk about care provision, we need to understand the differences between the public and the private health care systems. But generally speaking, it makes more sense that when it comes for these public systems would be more resilient because of the underlying low efficiency and redundancy and ability to provide care for patients who

cannot pay money in terms of standards of care. It's a difficult topic. I'll have a quick example just to explain that when all COVID started, the management of critically ill patients in the NHS remained as the standard management of any critically ill patient because there was no evidence to support any specific treatment for COVID.

Different mitigations started to be promoted as potential treatments for COVID, but none of these were approved for use in the UK for lack of evidence. The development of evidence needs investments, research and time. So in the UK, the use of any medication was limited to research purposes with patients consent and later most of those treatments were proven

to be not effective at all. That allowed the fund to go towards proper research and effective health care. This is a model in other systems where there were no standards or effective regulatory authorities. The clinicians tried every single medication intervention and rumor that patients without consent supporting evidence that was without following the scientific research protocol or even

data collection that was made easy because the patients were paying for it out of pocket without knowing that these interventions are not effective. There was no insurance company to investigate where the money's going or public funds forced to allocate the funds effectively.

two obvious examples are the hydroxychloroquine and the convalescent plasma, which were sold in the black market, swallowing millions of dollars and efforts. Once rumors were out that they are effected, later it was proven that neither were effective. So if we take an example of an ex healthcare system looking at a 50 million people, 20% of the population with

diagnosed with COVID, that means about 10 million inappropriate interventions were done for them were about CT scans, inappropriate blood tests, antibiotics, antifungals, antivirals, empty some canals, steroids, anticoagulants, plasma, etc. with average cost of 1000 thousand dollars per patient, the fund wasted on futile and ineffective unnecessary intervention, is $10 billion in that system that could have been used in a

much better way. If you move to workforce, it's a very difficult and big topic in terms of numbers, training and skill mix. And it's a huge ethical problem as well, since the so-called first world countries or high income countries relies mostly on professionals imported from the so-called third World countries or low income countries, especially in times like

this, leaving those countries more deprived. Plus the problems of stress, fatigue and burnout. If you have a quick look on this map, we will see two examples that you can hear have an average about 30 doctors, but 10,000 population.

And in the U.S., we have 26 doctors, but 10,000 population, and this is an average number. But we move here with the India and Pakistan with seven and eleven, respectively. That means they are deprived from doctors. But if we get some numbers from the UK Parliament House of Commons Library, we will find that 14% of the doctors

working in the NHS are actually Indian and Pakistani. This is not counting the number on those 70% British who are Indian and Pakistani origin, with 30% of the doctors working in the NHS are important people from low income countries and actually not just doctors, every profession and job in the NHS, from the EU and outside the EU

. And if we mention the infrastructure of the hospitals, which is another challenging problem, when disasters happen, we need 80. We need ambulance service. We need ICU beds. And this is just one example mentioning the ICU beds. When we talk about the USA, we'll find about 34 ICU beds per 100,000 inhabitants.

When in the UK, we have 6.6. This is a difference between insurance funded system and tax funded system when more ICU beds were needed. We didn't have the capacity to accommodate them. Hospitals were overstretched. Essential surgeries and interventions were canceled to manage the disaster.

Field hospitals like the Nightingale were trying again. Stock shortage and funding control the solution. We had a lot of problems in cancelation and stuff. So this is what we need to look back into the summer to summarize providing solutions or pretending that we succeeded globally in managing a disaster.

We are still far from that. This talk was just for brainstorming and sharing challenges that we need to deal with. There are huge discrepancies and gaps between the countries of this world in the health care systems and minimal standards of health care provision that needs to be sorted as a first step in the journey of disaster mitigation

plan. If we can't function when there is no disaster, we have no hope when disasters come. Buildings, machines and people are always problems for health care, but it seems that money can solve all of these problems when it exists.

So funding will always be the problem. Thank you so much. That's for me. I hope I didn't overrun my time. Thank you very much. It's really good. The presentation, and I will pass straight away to Dr. Alexander Lamberti and I will come back to you.

Ahmed, of course, the rest of the colleagues would the question and answer session. So Alessandra, the of this? So in Bill, I'm having some students. The Scream stabbing. OK. Can you see it? No, not yet. OK. Yeah. Thank you.

Can you see it now? Yes. Cool. Sorry about that. I'm going to take you to Italy from Oxford with flying to Italy, and I'm going to talk about the response to COVID 19 in Italy. Challenges, opportunities and lessons learned.

I'm going to give you a brief overview of what my presentation is going to touch on. I'm going to give you a brief introduction of what COVID 19 was in Italy and still is. Unfortunately, the challenges that we encountered in the hospital and the community level, the opportunity these that we seize through the strategies that we've implemented

and the lessons that we've learned with a vision of what we're going to do in the next future. So as you can see on the left, this is a short timeline of what COVID has been. And as you can see, we've had four waves, as you can see in the chopping the right in terms of numbers.

The fourth wave, it is actually what we are right now, what we're experiencing right now. And in terms of number, we've just hit the 11 million patients infected from COVID. And in terms of deaths, the HMD says that we've hundred and 50 k we were the first to you say, hit by the virus.

one of the most affected and especially during the first wave resiliency, it was pretty, two pretty intense years. If you can see that the first two COVID patients, we have that on the 30th of January of 20, 2020.

What were the consequences on the health system in Italy? At the hospital level, pressure on emergency services with swift saturation of beds at the ICU and some ICU level shortage of healthcare workers with the most, the majority of the professionals who were involved, especially at the ICU and ICU level, were rather experienced.

We had to maintain continuity of operations for urgent non-COVID cases. And so we had to have an eye on safety of staff, and patients will happen again at the community level. We had an intense surge in healthcare needs and primary care professionals, where few and those where there were had the most of their had to leave because

they were sick and infected by the virus. So there was a large number of patients or suspected cases at home that needed to be managed. And and all of you know, by right now, by now that management of COVID cases doesn't just mean a one off of just one clinical examination, but monitoring all the time.

So pretty intense work for all the primary care professionals, and we'll have to also refer most serious cases to hospitals. And another peculiar setting was the nursing homes here. The patients that needed to be managed are fragile here.

Also, safety of staff and patients play plays an important role. And the other peculiar factor is the isolation, preventative isolation of patients from relatives. And also he has serious cases had to be referred to the hospital. So what happened at the hospital level is that in-hospital services needed to be re-engineered on one hand to expand the hospital

capacity on the other, on the other hand, to grant continuity of operations. So by how did we expand hospital capacities, by building alternative sites, by canceling indispensable services when necessary, by converting hotels and gyms into care units and by adopting admission and discharge criteria, especially for non-COVID patients?

How did we grant continuity of operations by prioritizing patients in clinical interventions based on treatment capacity and demand, by facilitating transfers to other hospitals through reinforcing health transportation system? And after the first wave of kissing on safety of health care workers and training of healthcare workers.

And I can give you an example what happened in our hospital in Nevada? We are, as you can see on the northern and eastern Piedmont, part of Getting On and I ICU the challenges that we saw. We had to transfer all non-COVID patients and at the beginning of February, March and to the cardiovascular ICU, creating extra beds

. As you can see here on the far right picture in the basically in the aisle of the of the ICU, the elective surgery was suspended, emergency surgery was moved to other operating rooms. And as I said before, healthcare workers were.

Did from other departments, even non-clinical, even from pathology, for example. So the challenges here were that the necessity to swiftly expand the number of beds in the ICU. Shortage of health care workers we counted in the same hospital that over 300 healthcare workers were asked to change their roles by maintaining continuity of operations for non-COVID cases and

again by focusing on safety of healthcare workers and patients. What we did in the emergency department re-engineered pathways and systems to keep suspects and confirmed cases separated from other people, giving at the three levels, for example, priority to people with flu like symptoms or by triaging out.

So among COVID patients, admitting only those with symptoms and in the challenges that we've experienced were different, slightly different from those who were in our experience of the ICU level because per definition, the E.R. capacities are limitless. So we didn't have any issues with get bed capacity in the E.R. we had to maintain continuity of operations for

urgent non-COVID cases that was granted. But again, here, a shortage of health care workers was was a was a challenge because we had an experienced professionals that didn't have any experience with public health emergency or disasters. Again, here the safety of staff patients where was a problem and the emergency department ended up being the interlocutor for all

instances that were not emergency related. Of course, the emergency treatment, but also the occupational health for all health care workers within the hospital or GP cases, cases that could have been treated at the primary care level had it functioned or public health functions like surveillance and contact tracing.

We also had issues at the temporary hospitals that were like free, like the Valentino Field Hospital. That's the case I'm presenting today creation of alternative sites for COVID patients. Low intensity patients recovering from severe forms of COVID 19 that were not ready to be discharged home.

You have to imagine this was the first experience for most of the health care workers that were working. There didn't have any previous studies on disaster, medicine and medicine or nursing schools, and it was a newly built hospital in the midst of a pandemic with an experienced healthcare workers interfacing or dealing with logisticians and engineers.

So it was basically the recipe for a disaster within the disaster. What happened at the community level? As I said, primary care professionals that were not equipped with PPE were not trained. They were not able to grant continuity of operations to the government build.

That created a parallel system called Hoosegow, which is basically a corporate special units for continuity of care. And here again, the health workers working there were newly graduated med students who of course, were super motivated and were really enthusiastic, but didn't have enough experience and nursing homes again not equipped again with PPE.

Referral protocols were lacking and preventative, as I said before, preventative isolation of patients from relatives which bore a psychological burden, impact on patients, relatives and staff at the community level. Vulnerable communities like, for example, people who saw the disruption of the primary care system.

People with chronic diseases, or people who didn't have access to the health system. They were the most impacted and the conflicting and confusing information from media and public health experts that were not tailored around these vulnerable communities. So all the lessons that we learned from COVID 19 was in Italy that we didn't have a coordinated system and

with no integration of crisis management, hospitals were all there. Burton and primary care services were collapsed. The there was an intense overemphasis on response of the preparedness with a poor management of community based services with the consequences of having vulnerable people, vulnerable populations most affected and the poor risk communication strategy and poorer districts with poor safety of

unfortunately, staff and patients and the lack of trained health care workers and conclusions. What were the opportunities that we that we had and we focused as a research center in Italy on training because we believe that training is one of the key strategies to maintain continuity of operations and modulate and have motivated health care workers.

So we took part in training programs and simulation for health care workers deployed in temporary hospitals to organize the peer to peer training programs for healthcare workers in hospitals and nursing homes. And thanks to. Our Ebola experience and virtual reality training, we also organized virtual reality training sessions.

The last slide about the lessons that we learn practical lessons for internal organization, focus on safety of healthcare workers and their families, with task sharing to other cogs like nurses, healthcare assistants or community health workers. Hopefully, integrating disaster medicine in the medical and nursing school programs and within in terms of structure.

Keep separated pathways, consider space, distance and communication systems with relatives and patients and refer. Have strong referral paths from primary care to hospitals and vice versa, with the intention to have a having and collaboration between services, primary care hospitals, pre-hospital services or a whole of society approach.

All the lessons that we learned are contained in the health emergency in disaster risk management framework, but further research is needed on how to implement these recommendations into practice. In our research center has recently launched its BRACE initiative, bolstering resilience and capacities for emergencies whose initiative is, first of all, is multidisciplinary because it involves healthcare workers, disaster

management experts and other profiles. And the research is Fossae focusing on assessing the preparedness of different parts of the health systems like Primary Care, Community Hospital and other non-health aspects. Because we believe that integration and collaboration of all stakeholders is the key to be more prepared for the next disaster.

Thank you so much. Like a lot of times, it's really good and eye opening presentations so far. And in order to save time, I will just pass straightaway to Marta Motsepe. Would you please take over? Thank you. Sure.

Hi, can you just confirm that this is showing? Yes, thank you. OK, perfect. So now from Italy, we fly to Sierra Leone and actually from their hospital resilience, I'm going to just try to describe what happened during the COVID pandemic in Sierra Leone and the role of the brand new established National Emergency Medical Service.

Just to give you a little bit of background on Sierra Leone is that West West African country that has been suffering from the consequences of a prolonged civil war that lasted almost a decade. And from the Ebola epidemic of 2014.

So all these events had an impact, especially on the health care system that is characterized by a chronic shortage of skilled workers. And that, of course, is suffering from low resource and structural damages. What happened during the Ebola response was that approximately 200 ambulances have been donated by different donors to the Ministry of Health and Sanitation, and

these ambulances were used to take the patients from the villages to the Ebola treatment center. After these health crises of the Ebola epidemic, the Ministry of Health expressed the desire to establish with this fleet of ambulances a brand new National Emergency Medical Service, and in response to this request, a joint venture is being made by US and

Italian NGO and doctors with Africa.com and the Ventoux region. And we applied for a grant and won a grant from the World Bank to establish, develop and implement the very first National Emergency Medical Service in Sierra Leone. Just to give you a very brief overview of how this system works, patients need to arrive at the primary health

units. Primary health units are very basic community health centers that are spread all over the country, and here they can receive a first assessment and if they can receive basic care by a nurse, midwife or a community health workers when deemed necessary.

The names is activated by a phone call through a centralized operation center, which is located in the capital city of Freetown, and an ambulance is sent to the WHO and takes the patient to this. Names is composed by a fleet of 81 ambulances and in on each ambulances.

There is a paramedic and a number of strivers. So by in the time span of some months, from October 2018 until April 2019, all the districts have been progressively trained and made operational. And on the 27th May 2019, the names became operative on national level and one year after the service was completely handed over to the local

government, while in the first phase it was supported by Kwame and by us. Just to give you an overview of the volume of calls managed by names in the two years that we supported the system, these are the numbers.

And also we observe a frankly quite astonishing increase of admission rates in the hospital after the implementation of the service. Now what happened during the COVID 19? The first COVID 19 case in Sierra Leone, was declared on the 31st of March 2020, and the peak of cases was happened during June 2020.

Then there was a progressive decline. The NEMS has been actively engaged in the National Preparedness Response Plan to both and ensure a resident referral system for all the routine services and also to manage the sudden demands of referral COVID 19 related cases.

Now. This is not working anymore, let me just fix it. OK. We see there a resilience and service, and when the health service has the capacity to absorb, adapt and transform when and when there's a shock and in this case, the shock is the pandemic.

This framework entails different aspects the capacity to combine and integrate different forms of knowledge, the capacity to anticipate and cope with uncertainties, the capacity to engage them and

to handle multiple and grow scale dynamics and the capacity to develop socially and contextually accepted and institutional norms.

Fortunately, or maybe unfortunately, this was not the first time for Sierra Leone to have to deal with such an event. As I said in my introduction, the country has suffered from a very extreme Ebola Ebola epidemic in 2014, so somehow the health system already experience this type of of shock and already started to integrate these absorbed, but

the absorptive, adaptive and transformative capacity within a plan. So when the COVID 19 happened immediately after the state of emergency was declared in Sierra Leone and it was established as a case management pillar that had components from the Ministry of Health, component of the Army Force of Sierra Leone and key partners and stakeholders.

And of course, NEMS Management Board and representatives were part of the case management pillar, and the aim was to devise and implement protocols and procedure for COVID 19 cases. Also, the core of the operation happened in Freetown on the Emergency Operations Center that functioned as a hub for data gathering, priority setting and the response planning patients.

This is very slow. I'm sorry. Patients were either streets to community care centers or COVID treatment centers, according to their status. I'm sorry, but this is really not working now. And just blocked. And if you can see, but mine is blocked anyway, so according to their symptoms, patients were either treated in an isolated in community care centers

that were basically converted sites such as school sites, army barracks or converted. All some residents, whereas treating severe cases, were isolated and treatment and the very first in and in hospital in Freetown that had 15 beds and a specialized bed.

And after a few months by June 2020, these COVID treatment centers reached 650 beds in multiple facilities across the country. So as far as NEMS is concerned, these are the changes and all the absorb active, adaptive and just of the changes that NEMS had to implement for the first of which was that to redistribute the ambulances, 15

of the 81 ambulance ambulances were dedicated only to the referral of confirmed or suspected cases and also to samples that were taken to one lab in Freetown. Also, we needed to train our of our fleet. As I said in the names fleet is composed by one paramedic and one ambulance driver, and the total number of people working

in EMS is roughly 1000 of care workers. So we needed to implement just in time trainings in order for these ethical workers to be able to assist COVID patients, but also to do it safely. So we needed to teach them how to wear PPE and all the IPC procedures.

Fortunately, as I said, they already experienced this type of thing during the Ebola crisis of crisis. So, of course, they already were sort of confident and comfortable in working under the PPE, and they knew already IPC procedure and cleaning and waste management.

The major challenges in and during this phase were, of course, the fact that there was an upward trend in EMS activities. This had a financial impact because we needed to procure PPE, decontamination kits and also digital thermometers. The reduction of the ambulance food by 15, of course, poses a challenges in the remaining three that had to be

redistributed across the country and had to and was sort of overloaded with all the calls received to maintain the routine activity. And also, we needed to perform, as I said, supplemental just in time training sessions that had to be on time and it had to be done in a very quick and efficient way.

Another challenge that I would like to highlight, because this is something that we encounter at first and very in the initial phases of the implementation of NEMS was the stigma toward the ambulances. So as I said at the very beginning of the Ebola experience, the ambulances were used to take the patients from the villages to the Ebola

treatment centers, and sometimes the relatives would never see the patient again. So these were the stigma. This fear of the ambulances at the beginning of the implementation of them was something we didn't fight with when we were asked not to, for instance, have the sirens and the lights on, not to scare the population.

And this, with the COVID experience is something that was taken back. And so the solution was to involve a psychological team to inform the patients and the relatives about their condition and need to isolation so not to experience violence or acts of yes, violence at the moment that the ambulance is to take the patients from the villages

to the COVID treatment centers. And also, I think it's important to follow up on what happened after the COVID 19, because Sierra Leone is a low income country, they had no former national disaster plan, no national disaster management agency.

But what happened after the COVID 19 was that in November 2020, the president launched the first national disaster management agency and also we started implementing disaster medicine courses

for all Nam's personnel and on the ambulances, and these courses are actually ongoing at the moment.

Unfortunately, they already had to experience one very big MCI, and there was a big collision between a fuel tanker and a truck carrying grenades stores on the fifth of November 2021 with 92 casualties and 98 death on sites, and the names of was involved in the in the MCI.

And this was the very first time they had to experience an event like that with them within the National Disaster Management Agency. What is done? Thank you so much. And I leave there, what's the next speaker? Thank you very much indeed.

It's really good. Another good presentation. Now I think we fly from Seattle. You ought to go to Turkey this time. Hosting the stage is all yours. Thank you. OK. A presentation showed and started. I am single check and Interfaith Disaster Medicine and health care resilience in two parts.

Thank you all for coming. Listen to the miners. first of all, I would like to thank you, Dr. Neville, for organizing the miners. Today, I will try to explain to you the resilience study of the last 20 years in terms of future disasters, medicine and health care with examples.

This presentation is map projects and health care system resilience and capacity development implementation and COVID 19 and health care system response and building education and training capacity in disaster medicine and emergency health care services. And finally, what is being done towards 2030 in terms of disaster medicine?

Turkey is a high risk country in terms of disasters such as earthquakes and floods, landslides and wildfires. In addition, manmade disaster around the country revealed the importance of the resilience of the capacity and the health system. Approximately. And approximately eight to 5 million people live in Turkey.

It's a country that is very vulnerable to a natural disaster. This map showed the danger of touchée in times of natural disasters. The right places on the map. So the fault lines in this region, including earthquake as a type of disaster that should be prepared to similarly entertain.

In addition, disasters such as floods, landslides and avalanche while wildfires and drought regardless in regionally after the 1999 Marmara earthquake to on the event as a significant change in the disaster management policy. The odds show that to check is vulnerable to major disasters, especially in my presentation.

I will tell you important breaking moments of truth. In the last 20 years in this diagram, you can see the important breaking points in terms of disaster medicine and health care capacity. Uh, first, uh, Istanbul Systemic Risk Mitigation Project.

What is this map? Uh, about one in 44 of today's population lives in Istanbul. Do you hear the health of the country? Industry is in the region and the very fragile state in terms of building site. After the 1999 Marmara earthquake, the World Bank, European Development Bank Council and Ecobank and others found.

It is carried out by the Project Coordination Unit of Istanbul governing the ownership of the Republic of Today, with the support of Project East Map consist of three main components components a consistent of study aim of increasing early warming and emergency response capacity components.

B Covers of about efforts to reduce the structural structural disaster risk of Istanbul. For example, it aims to strengthen stranding, bridge and make important structures such as hospitals and school dribble training and awareness activity, and carry out four sea component disasters and emergency.

For example, preparation of training and exercise in preparation of books and papers. In my presentation, I will touch on some of the resilience and capacity building efforts of this project in terms of health care. first of all, I want to talk about component a suitcase case, although the emergency response teams were aware in indicated the 1999 Marmara

earthquake in the days after the earthquake. The systems stopped providing field services due to many structural and nonstructural reasons. The esmya project provided the important resource, especially in terms of capacity development. Many investments were made for national medical rescue teams, such as we receive the vaccine, blood and blood products, several medical first aid equipment and storage containers

. Battery operated. And these are overrated forklifts and orders the various medical rescue team capacity development. And this pictures and national medical rescue team, uh, the different, uh, the various. Incompetent B incompetence B and a 1001, 7000 to 550 hospital health care centers and the health center have been strengthened in terms of healed six hospital and two health

care centers in Istanbul, serving approximately 5 million people work accomplished to demolish it and reconstructed science. The opening dates of these hospitals are in the first month of the COVID pandemic. Luke has used a used to. It's a great opportunity for capacity expansion with within the scope of competency training and exercise that eyes and national medical rescue personnel

are carry on carry out this pandemic. The biggest problem in the world last two years that were very difficult situation indicates that approximately 4 million Syrian refugees in Turkey. It also strategically point in terms of transit from surrounding countries, although there are factors that force the capacity into in terms of the pandemic.

The hospital opened it with the scope of the Ismet project. The capacity created with the scope of the hospital project contributed to the functioning of today without looking at the system in terms of health services. Between March and November 2020, it increased its bed capacity by approximately and percent thousand.

In addition, the COVID pandemic and the emergence of hospitals were established in provinces with the high population in Istanbul to emergency hospital with a bed capacity of 1000 aides started to work in mid 2020. This hospital were also planning to increase the capacity of Istanbul in terms of disasters.

1008 beds, 432 of which can be turned to turn into intensive care when necessary. The hospital beds, which will serve in the service in 68. The 16 operational rooms and advanced technology medical equipment. To you in France, Pandemic National Preparedness Plan, it was published in December 2019 before the cold ever test the plan and controls the real

pandemic. This turned out to be a very difficult situation. We can say that the adaptation process of country experienced experienced in disaster in general against the microbial radiological theory. It took a long time that there were difficulties in complying with the pandemic rules, as it was that invisible disasters from a social point of view.

I was in London in March 2020 at the beginning of the pandemic. And due to a load in and around the spring of Into J. And State Hospital become unusable due to the flooding and mud I Fault Hospital hospitals advised hospital was established quickly and patients were transported and ordered near zone hospitals.

In addition, critically ill patients were transferred to hospital in different provinces. Many people were rescued by military helicopters and military helicopters in this fluid. The hospital was cleared of mud with surgery and workers and ensure it will be straight and voluntary, and the hospital was alerted.

And finally, in the important study in terms of resilience and European Union models, it was ice and emergency medical services in the UK in 2000 2021. In this exercise, especially emergency health services, had the opportunity opportunity at work with participants from different countries in order to increase resilience in times of disaster, medicine and health care into muscle

and book trade programs gained momentum in order to investigate the scientific aspects of the issue, especially after the Sun sent disaster risk reduction framework. And what will we be doing towards the 2013? And making the training and exercise of health care personal and interactive.

The structure of health care centers and disaster medicine, education and training developing and the capacity expanding and. In this day presentation, the references in the Lynch website, thank you for listening. Thank you very much indeed. I'll say it's another interesting presentation that we have, so it's it's a great.

So again, thank you very much indeed, Molly. Now on to my next basic point of the agenda is that we move for a big question answers from the audience. And have you got any questions for us support for the speakers, please?

Yes, we do. We do have two questions. The first one is specifically addressed to Dr. Alessandra. So I'll start with that. And it's from our speaker, Pippa. So she's saying that health care support workers were a necessity for us in the UK, too.

And we had a lot of people step forward from the public early on to train to fill these roles. Now we find ourselves with high vacancies for health care support workers. And she's asking if it's the same in Italy and why do you think this might be?

So can you can you hear me? OK, I'm sorry, I'm having issues with my microphone, so my experience is the other way around. Actually, Natalie, maybe my president, confirmed that, so we had a plethora of health care workers or lay workers in Italy.

What we didn't have were was killed doctors or nurses who had previously had experience with disasters of public health emergencies. And what we we tried to reclaim is the the the the surge of human resources through, for example, retired medical doctors.

Or we even anticipated the day of the graduation for nurses to send them to to work. I don't know if that happened in the UK as well. But what we did have were where healthcare assistants and in healthcare support workers in general.

So I think in Italy, it happened something different. Thank you very much, Sandra. Any other questions? Yes. The next question is from one of our attendees, and it's a general, so any one of us speakers can answer for that.

So he's asking how was the impact of increasing workloads to the health care workers, both physically and mentally? And in here, I mean, in the COVID 19 situation. OK. Who's of the colleagues wants to fix that, so. I think it's good, that's the question to ask everyone, actually, to be honest, one or the four speeches.

But the old, you know, I would be one of the colleagues to pick this up. OK, right. I will I would pick up Ahmed and maybe Martha as well, OK, because I know Ahmed has been really, you know, pointed this this particular factor.

He might have this particular factor there. And then, of course, you know, mosque, I'm close, of course, because this is something to say about this as well. So stuff with arm of the police. Can you hear me? Yes.

All right. So the health care workers during the pandemic responded or got affected in different ways, depending on several things. So as I mentioned, they are normal people, so they get sick. Some of them are scared for their own well-being.

So when everything started, some of them got too scared. So they decided to take time off. Stop walking. Pretend that they are sick. But some of them became very brave and came forward. And we have, as just a better said, we have lots of retired doctors came back to work voluntarily to cover the gaps, and we had

lots and lots of volunteers to volunteer in the health, healthcare workers and the support services as well, from vaccination to service on the wards. And we had the physiotherapists and nurses and everyone coming to work in intensive care and in the wards that been converted to intensive care.

So when we started the pandemic, we had two groups one group that were very enthusiastic and took a heroic action to go ahead and help with the pandemic. And another group were more concerned about the well-being and their families as well.

And then as we go on with the pandemic and one month after the other people started to get exhausted, bored and disappointed. So on the long run, more of burnout, more people taking more time out, more sicknesses and more shortage every day.

And I think this wave happened up and down during the last two years during the COVID pandemic. And I think it's been similar everywhere in the world, not just in the UK, because it has been it should have been a marathon rather than a sprint.

We started a very quick sprint. So at some point we didn't realize that it would be a long marathon, so people got burnt out very quickly. But now I think we understand how it works and we managing people much better.

That's for me. Thank you, Ahmed and Marta, what what have you got about this? So much of the studio. Now, still, we continue. No, certainly I'm not muted. But there is something with a mic that. OK. Shall we come back to this in a later, at a later stage?

If that is OK and how do you have any other questions or shall we go to this second session? Right? OK. So, so then let's let's go to our next set of speakers. We've got different different types of speeches now.

I suppose it's set up. I'm sure that all of you are reading really kind of seeing the complexity on the health care and not just in the U.K. or in Turkey or in, you know, in Europe or anywhere else.

It's always, always the same, the same issues, always the same complexity. So I would like to call Professor Dan Dan Barnett, too, to join us and to give him the stage to present his his work. Can you hear me?

Yes, yes, we can jump, but we can't, we can't see you. We can hear you, but we can see you if for some reason I'm unable to deactivate my my camera block. Is that is that? Can that be done on your end, if possible?

And if not, I'll just hear my my melodic voice. I guess we certainly can hear you perfectly, but we can't see you. And if I don't think that we have any control over the camera, OK, well, I maybe I'll just proceed and I'll try to get my camera working.

But in the meantime, OK, that's okay with you. And is it possible kindly to advance the slides on on your end? I'm not the man online for the fun. Absolutely fine. Thank you so much. Chris or colleague could.

Thank you so much. Okay. Can you see my screen or I mean, can you see the slides? Yes, yes, we can. OK. Well, it's a pleasure to present at this session and this is really talk that I think in many ways relates to the themes that have arisen from earlier presentations today.

And what I'm going to be talking about is not ability to respond, but rather willingness to respond in public health emergencies and disasters. And as Dr. Ahmed alluded to a few moments ago, we we

have seen people with reticence, understandable reticence in the health care workforce in terms of being concerned about their own physical safety during COVID

19 and their family's well-being. And colleagues and I at Johns Hopkins and colleagues from Israel we've worked with on this have really we found certain patterns in terms of willingness to respond. And what I want to highlight is that willingness to respond.

You can teach someone how to look at anthrax under a microscope, but that does not mean based on our research, that they'll be willing to come to work to look at after it's under a microscope, if that makes sense.

And so the theme here is that these concepts that I'll present today don't only apply to COVID 19, but to apply to a variety of events such as natural disasters. We're seeing increasing frequency and severity of natural disasters pandemics.

Unfortunately, I highly doubt this is going to be the only pandemic we'll see in our lifetimes and technological disaster. So next slide, please. This is a slide that was developed by the Institute of Medicine of the National Academies of Science, Engineering and Medicine that really described, I think very aptly, at least in the US, and I have

colleagues from Canada who confirm it applies to them as well. But I'll be interested in others feedback as to its relevance to your respective jurisdictions and countries. This is called the Public Health Emergency Preparedness System, and it's an interlocking set of actors that are involved in responding to a public health emergency or disaster at the hub is

what this terminology refers to is a governmental public health infrastructure. In other words, health departments and there's an expression that all disasters began locally. So the idea is that local jurisdictional response, whether it's at the hospital or a public health agency or in this case, public health departments are really the hub of a system that has a

variety of players going from 12:00 clockwise. That includes hospitals, health care delivery systems, public health and Homeland Security employees and businesses. We have to think about the private sector, the media, so risk communication through the media is critical academia, so subject matter expertize and communities themselves.

So all of these elements are vital, but it's sort of an elephant in the room, at least in the United States. And I think is true of other countries is that we've had a very fragile and underfunded public health infrastructure for quite a while, at least in the United States.

So it's a fragile hub to a critical system and all of these elements within the system. Willingness to respond applies to in different ways, but equally critically, that's likely. So let's talk about some relevant challenges in this regard.

I mentioned funding challenges on the left side of the slide allocation. HD stands for health department personnel and resources. There's disparity in preparedness levels looking at least in the research we've done in the United States in terms of rural versus urban health departments with rural, less funded and less robust in terms of its resource capacity than urban

. There's a term called warning fatigue, where it's sort of the old adage the sky is falling. And so if that gets repeated enough, even public health workers and health care workers are susceptible to that kind of fatigue if those events don't play out as the way they're anticipated.

My first job just to be very briefly anecdotal. When I finished my residency training, I worked at Baltimore City Health Department's Office of Preparedness and Response, and my very first job was to do trainings for anthrax recognition and response for 13 hundred health department employees.

You may recall in the United States there were anthrax mailings in the wake of the September eleven, 2001, attacks. And one of the themes that I heard repeatedly when I did this training and that basically led to my interest in this aspect of research is where do I fit into the response?

How does this apply to me? And so this is a theme that you'll see interwoven in the subsequent slides. So mental health considerations are critical and as a reference willingness to respond next like. So we're focusing here for purposes of this presentation on the response phase of the disaster lifecycle.

But we've also looked at willingness to participate in disaster recovery and I won't get ahead of myself, but that would be if anyone wants to discuss that, I would love to because I think it's going to be a critical issue in the aftermath of COVID 19, whatever that aftermath looks like and willingness of people who are already

burnt out within this system that I described to actively engage in recovery phase efforts. Next slide. There's the expression, at least in American English, ready, willing and able, and that's a common expression. But in 2010, colleagues and I published a concept paper where we defined what each of these terms really mean in in the context of public

health, emergency preparedness and response. And just very briefly, I'll take it in the order of ready, able and willing, which is not as catchy, but it's the best order to present in this case. So readiness means do you have plans in place?

But not only do you have plans in place, your employees know what those plans are. Otherwise it's a tree and falling in the forest. Phenomenal ability. Do you know how to use a two way radio? Do you know how to communicate using incident command terminology and the like, but without the willingness peace, the willingness to actually physically

come to work and apply those knowledge and skill sets and implement those plans, all is for naught. So it's really a critical piece that we're talking about here. And what we hypothesized in this paper is that the degree of overlap between these three concentric circles and a spin diagram is proportionate to the probability of a quality response

, which, by the way, is its own area for. That's right, for further research in terms of what are meaningful metrics of a successful response. Whatever the scenario may be. So next slide. So this is not just an artificial conceptual mental exercise here.

Tragically, there have been a number of reports and I've pared down from a very long list of of lay press articles about gaps and willingness to respond that can result in and tragic consequences. This is a report from NPR in the United States regarding a nursing home nursing care facility in Spain that was found to be abandoned

. This was early on in the pandemic. COVID 19 an excellent. A colleague of mine, Dr Tom Kirsh, wrote an article that if you look up now, it reads like he was Nostradamus, unfortunately, because he talked about how the pandemic.

This was written, you'll see, March 24th, 2020. And one of the things he talked about is concerns about willingness to respond and also the sort of the grinding down of the public health and health care workforce by this pandemic.

And it's really it's incredibly prescient as you look back at this article. So I highly recommend this piece that looks like. This is an article from the New York Times. You may recall, as was discussed earlier and the Ebola outbreak in West Africa in 2014, we had there was a gentleman who flew from Liberia to Dallas, Texas

, in the United States, and he was identified as having Ebola. He tragically died from it. And this is a photo of hazmat workers from a New York Times article, which the headline tellingly reads DeLay in Dallas Ebola cleanup as workers attest.

So when we think about these kinds of events, these are all hands on deck events. And so the attitudinal the willingness piece is critical. This is in no way diminishing the heroic efforts that people have and will and do engage in events like COVID 19.

But the all hands on deck piece means that any gaps in willingness basically mitigate the success of a response to any kind of event next like this? So these are just more slides regarding concerns there was a large calling in sick after a physician from Doctors Without Borders, MSF arrived back in New York and suddenly there was

a whole lot of absenteeism the next day. So as we say in medicine, that that is not likely true, true and unrelated. So on the next slide, we'll talk more about some of these key issues, and I realize a little bit on time, so I will be brief.

one of the take home themes that we found in our research is that willingness to respond is a scenario specific phenomenon, even within an individual. My willingness, for example, and this is based on research where we've we've done this kind of very in-depth analysis for writing cohorts.

My willingness to come to work in a weather disaster may not equate to my willingness to come to work in a radiological dirty bomb. In fact, we've found consistently that among the scenarios we've looked at among health care workers at hospitals, public health workers, even Medical Reserve Corps volunteers, the lowest rates of willingness to respond are for

the radiological scenario. And there's a long history of risk perception theory that underpins why people would be reticent to come to work in a radiological event next likely. In the interest of time, I won't go into depth on this matter, but our work has been underpinned by a behavioral model called the Extended Parallel Process Model, which basically

says in a nutshell, in order to convince someone to engage in a desired behavior in this case come to work, I have to convince someone of the legitimacy of the threat to motivate them and convince them of two pieces of efficacy self-efficacy, which Bender at Stanford is a pioneer of the idea that I'm confident that I know

what my job would be and I could perform it successfully and response efficacy, which unfortunately has nothing to do with the disaster lifecycle. It's a communication term, but response efficacy means do I feel like I matter? So we're all familiar with the Kitty Genovese psychological study.

It's called diffusion of responsibility, where a woman tragically was attacked in a courtyard. People were watching this occur and everyone assumed everyone else would call the police, and it didn't occur because it's called diffusion of responsibility. So we found that willingness to respond at large urban health departments, for example, in our work is greater than or is

less than willingness to respond at small, tightly knit rural health departments because there's more of an opportunity for diffusion of responsibility, the larger the entity gets neglected. But all models are wrong, and some are useful. I did not come up with that aphorism that that's actually a quote from biostatistician George Box, but the idea here is that

this the model I presented, suggests that if I can't convince someone of the legitimacy of the threat that it's game over, they will not. The efficacy piece doesn't matter. What we found actually is that efficacy weighs more than threat as a modifier willingness to respond.

And the single most important modifier of willingness to respond that we found through our research is self-efficacy. In other words, loosely translated as confidence that one can perform with agility in high dread scenarios next like this? So as I mentioned, we've looked at this question among a variety of health care cohorts, from hospital workers to health department

workers even to emergency medical services workers and Medical Reserve Corps volunteers. What we have found, if you had to identify one profile of a public health or health care worker who's most likely to be willing to respond across all hazards, although, as I mentioned, willingness an area specific it would be what we call the concerned and confident

worker, the worker who perceives the threat as high to motivate their behavior to come to work and perceive the high sense of efficacy, both in terms of the self-efficacy, confidence and the sense that I matter if I show up.

Let's not like this. Actually, the numbers are quite stark. We've found in our in our analysis, this is a study from a very large, ordinary hospital in Baltimore, Maryland. I'll let you guess what that one might be, but that is a I come from it, so that should help you.

But the idea here is that willingness to respond we found among nurses is lower by scenario type, respectively than among physicians. And when we asked the same question willingness to respond to the influenza pandemic versus a radiological dirty bomb, regardless of severity, look, if you will, at the bottom right cell on this table, 43.8% of nurses indicated

they'd be willing to respond. And as we're all well aware, nurses are by far the largest cohort of health care workers. So this would have a crippling impact on health care system surge capacity. So although we're talking a lot about COVID 19, these findings relate to other threats.

Excellent. So this is just summarizing the key findings. one of the take home is that we need to train not just for knowledge and skills, for preparedness, but efficacy for preparedness. And that really is is aligns with the findings.

In order to boost willingness to respond, we need to train by scenario type to boost respective efficacy among workers toward that scenario, including self-efficacy, confidence that they can respond and in response efficacy mean that they feel they matter if they do so, next look.

I will go quickly, extremely quickly in the interest of time we looked at this among health department workers, as I said earlier. Next slide please. Thank you. And we've looked at rural and urban health departments. This is one of the largest studies that we're aware of to date among health department workers, almost 3000 workers across nine U.S.

states. Half of the rural states, half of them urban or rural jurisdictions that have them urban jurisdictions, and that the findings from this study have really fueled our current work and which I'll mention in a moment next like.

We found, again, looking at health departments that the same patterns the dirty bomb had the lowest rate of willingness to respond. By the way, if your willingness to respond is, if required by the agency is greater than willingness to respond for that respective scenario, if asked, but not required, that may seem obvious in the United States.

We cannot compel someone to get out of bed and go to work in a disaster. But as a colleague once told me was a former health officer who said, I can't make my employees come to work, but I can revisit their employment status afterwards if they don't.

So there is a carrot and stick approach to everything, and it does appear that the stick approach does seem to matter in this regard. Next one. We developed a curriculum based on this, the findings from this and it was a train the trainer model called Public Health Infrastructure Training with a focus on efficacy and on the next

slides. I'll show you some of the findings, key takeaways from it. This basically had a three part component where we had a facilitator led discussion about likely scenarios that would occur and events that had occurred in a jurisdiction independent learning activity, even mapping out multiple routes to work, making a personal preparedness kit and so forth.

And thirdly, doing a tabletop exercise. It was mentioned earlier in today's excellent panel discussions about the importance of exercising and drills. Well, exercising and drills based on our research can still focus on attitudes, not just knowledge and skills, as they have traditionally been excellent.

There are a lot of numbers on this slide I just want to highlight. We looked we did basically baseline and repeat surpluses before versus after the curriculum that I just mentioned. It's always good when the control group does not show any pattern.

So in a given cell, the far left number. Take a look unkindly under radiological dirty bomb and the yellow highlighted cell, that's a baseline. 57% in the intervention. So this was a randomized controlled trial indicated they'd be willing to respond at one month post curriculum.

That number went up to 73% willing to respond and only dropped by 2% at six months. So it's an up 14% increase when they say that's not a lot, but actually every last person matters in these kinds of events.

So 14% is a big deal in terms of actual impact for a given agency. Excellent. Self-efficacy, I mentioned is the leading modifier we found a willingness to respond and just going to the radiological dirty bomb column. This, by the way, this training seems to work best for the highest dread scenarios.

This was the freak of it, admittedly so. But for the radiological dirty bomb column, under the yellow highlighted intervention you'll see in red baseline, 50% went up to 79% one month post curriculum and dropped by 4% from there.

So a net 25% increase in self-efficacy, which is really was very exciting finding from this research that was funded by CDC. Next, not. Let's just briefly conclude and thank you for indulging me on the time, and I will be very brief.

Thank you. I'm going to be a lot of colleagues, current research considerations and next steps. Let's look. So what are the next steps is to get a better understanding of how willingness to respond applies and impacts. LMI sees low and middle income countries and their workforces and using that public health emergency preparedness system napping that on in

limited context and gauging willingness to respond. There's been some good early research on willingness to respond, for example, in COVID 19 in Yemen, but more work needs to be done, and my colleagues and I at Johns Hopkins and Cornell and University of South Florida.

And I don't want to miss any anyone Aga Khan University and Postgraduate Medical Center. So it's working on a globally NIH poverty project right now to look at willingness to respond among emergency department personnel in Pakistan, with the goal of developing mHealth app to boost willingness to respond based on this mixed methods research.

So thank you so much for you for the time and I appreciate the opportunity and there are some reference slides on the next few slides as well as my contact information. Thank you so much. Thank you very much indeed.

Done a really, really good, good insightful presentation about willingness, and I think we'll follow that up now where there was someone who actually has been on a war or on on the war and has been deployed, you know, to work on one of the walls or at least, you know, conduct a lot of research there.

Who is Helen? Helen joins us from Cambridge now. So we did the tour of the works of art back to Cambridge now and got had another, of course, our people. So that as well to talk to us about staffing issues as well.

So how did the status of Nabeel? Thank you very much indeed. I feel very excited to be part of this world tour. It's it's it's a wonderful and wonderful thing, and it's coming out of such a horrible situation.

And I wonder if we could start with my slides, Chris. That would be brilliant. And if someone could let me know when they're here or whether I've seen them. Yes, yes, they are. Yeah, they are here. Lovely, thank you.

So this research came about as I was. So I'm I'm a specialist nurse at a big hospital in Cambridge. I work in transplant medicine. And when COVID hit, I was redeployed over to the ITU. I have some experience previously and it was very clear that right from the word go, the redeployment of nurses away from their regular

jobs into the ICU caused a huge range of reaction lots of emotion, hugely diverse emotion and organizational problems. And I realize that probably there was a lot of information to capture, and I also wanted to validate some of the experiences that the people were having in this kind of unique situation.

And I also believe there were probably lessons to be learned from from what was happening. So the next slide, please, Chris. So five critical themes emerged from some work, collating some of the

experiences of nurses that were redeployed onto the ICU, and these are very specific group of people.

They had been moved from their regular jobs and plunged into the world of ICU. Some of these nurses had previous experience known to you, and some didn't. five key themes. Generally, nurses were willing to help. And as Don has highlighted, there was even an increase in kind of willingness to work due to the pandemic.

There was significant stress and anxiety. This was cited by nearly 90% of the respondents. They were very poor communications noted between what was perceived to be nursing leaders and those nurses that were on the frontline. And we'll explore that further, but that was a really significant problem.

Lots of the redeployed nurses felt abandoned and unsupported. And again, this links really well into the previous presentation. So this sense of do I matter is really interesting. And perhaps I should've had a conversation when I was writing this up.

But you know, that is that sums it up very well. There were. It seems like we have some technical issues with Helen and. Right. OK. So I think I was waiting for Helen to come back, most probably is her internet went down and.

People want to take over, and then we come back to the later stages of this, OK? Or yeah, I can do that. OK, thank you. Chris, you have to pick my slides up, please. I'll start anyway in the.

Burial time, so I one my name is Ivan, the chief allied health professional at Royal Public Hospital, and I'll be giving you a bit of an insight into the perspective of the allied health professions, and so many other speakers have got some feedback from staff.

So have a look out for that and also listen out for the areas of vulnerability that you picked up on. And next slide, please, Chris. So this is Royal Papworth Hospital. It's a world leading heart lung transplant hospital, but you can see from the black and white picture it didn't start that way.

It started in 1918, just after World War one as a tuberculosis settlement and specialized in respiratory develops over time. And it's now a world leading heart, lung and hospital specializing in transplant and in particular, in the case of COVID, it's really important.

We're one of five centers in the UK that the treat with eight movies extracorporeal membrane oxygenation and I mean, simplistic terms, that's an artificial blockage. So it puts oxygen back into the blood outside of the body, allowing the lungs to recover.

And in doing so avoids complications that that normal conventional ventilation might. What gives? And what's also important? The picture, the the bottom there. The Blue one is the new Royal Hospital. So we moved in 2019 to Cambridge, just over the road from Helen Addenbrooke's Hospital.

What's really key is that all each patient room is an individual patient room. So in critical care, every patient has their own room and that was critical for COVID in terms of preventing the movement of infection across the hospital.

So if you built a new hospitals, then single room hospitals are and are the way forward its next phase. So who are the allied health professionals? So it varies from country to country, and a really simplistic term would be if we took New Zealand as an example who just includes everybody who isn't a doctor or nurse, any

clinical professional and the doctor or nurse or dentist in England. We we categorize 14 professionals as allied health professionals, and you'll be familiar with those from physiotherapists, occupational therapists, radiographers, and we work in very niche fields that are in the realms of diagnostics and treatment.

We go across the pathway from birth through to patterns of care. And if you look back at the history of the development of the allied health professionals, you can see there's really the clear markers of when there's a global or national crisis.

All professions develop. This kind of practice starts to develop. So over history, we've seen over one in one or two have been real accelerants for us in how we've developed in our innovative practice. So I'm going to be telling you the perspective from Royal Hospital and how we fit into the regional national systems, the similarities across the

coastal areas. Next slide, please. So at the beginning of 2020, the pandemic was coming, we were looking to to try and hide in there and our colleagues over in Italy to find out exactly how we were meant to respond.

And we stopped all of our activity in the hospital apart from emergency admissions, and that was a real time of tension and anxiety for us, lots of time on our hands. And we saw that in China and Italy, training was really essential in caring for COVID patients and being a respiratory hospitals.

Our team is does that already with a lot of our patients while physio team were training the other allied health professionals to do this. So there's a picture here of us doing it, and you can see some comments there about the anxiety people were feeling about what to do.

And we took this team approach to the simulation lab and along with our nursing colleagues, worked through it and partnering up with them realized that we needed to be doing this, not just in isolation. We need to be working with them, taking on some of the basic nursing skills.

And that was an opportunity, as Alexander said, admittedly, to to draw up a staff and redeployed into those teams and for the basic nursing care and the mobilization of these patients repositioning of them. And that provided a really supportive environment to the staff that weren't able to work in critical care and didn't feel comfortable working in isolation

in critical care to put them in a supporter team environment. Next slide, please. So we are fortunate that the words but we had a National Geographic photographer come during the crisis, so we've got some beautiful photos here. You can see an example here.

So the reality was was was we we were prepared, but it was it was quite different. And. But we realized through our debriefs that we were substituting roles, so we were staff felt slightly devalued in the physiotherapists and speech therapist when working within these areas.

But also on the flip side, the nurses that we were supporting felt like they weren't doing the basic care for their patients and they were missing that. So we recognized that role substitution wasn't ideal. Shared skills would have been a better approach, and that's what we evolved into over there over the pandemic.

But that was essentially the height of the crisis. We were completely overwhelmed in that first wave. We called on our colleagues over Addenbrooke's Hospital, over the road and other hospitals for mutual aid and of intensive care at the time was 200% bigger than that.

It was the normal times and with our HMO patients. That's what we were specialists in. So the sickest of the sick COVID patients came to us. And normally we have three patients in a hospital at that time of year and went up to 21 at my patients, which is just, you know, extreme numbers.

As I said, staff will be deployed to these teams. And that included people from our finance teams and non-clinical teams are working, working in critical care alongside us. And I'm what we drew from

that was actually sometimes the most experienced person in that team was a health care support worker or a rehab assistant who was confident working

in critical care. And they needed leadership skills. And perhaps that was something that was a vulnerability of ours that we could pick up on later. And next slide, please. So as the pandemic progressed, these patients needed rehabilitation, so the allied health professions were were pulled out of those, those basic bedside care things that we had to work

within our own professions to rehabilitate these patients. And so you can see here at the top, we've got speech and language therapists assessing the voice and soul of somebody. And at the bottom, you've got, I think, my patient and physio team mobilizing him.

You can see the number of people it takes because of all the tapes and connections and some of these patients he's helped my patients with with this for hundred and 50 days. So they were there for a very long time and.

So as as it progressed, we were watching our specialist areas, but also those of us who went to skilled work in critical care. We were then also working Spitzer carers in critical care and we picked up lots of specialist nursing skills.

So we were developing and extending our scope of practice, supported working alongside a trained critical care nurse. Also, a big focus then was flying through the hospital and out into community. So ordinarily we would be assessing a patient ready to leave.

The hospital would assess their discharge needs before they left the hospital. But we didn't have time to do that anymore, so it was that patients were discharged home to be assessed at home for their care needs. We then developed this is a national process pathway 23, where we would quickly say which pathway the patient was on.

As soon as they were declared medically fit by the medical team, they were meant to leave a hospital within four hours off to their destination. And I think that's a that's a coded keeper. We're still using the discharge pathways.

Next slide, please. So what helped our response? Well, a small niche teams, we have to be adaptable anyhow. We have to work across hospitals in all situations. So we are we are adaptable by nature, so we're well suited to change and certainly within our hospital in the new hospital.

seven of our teams are co-located and that was really key for rapid communication with rapid changes and also supporting the wellbeing of staff. So we know in a disaster communication is key that co-location really helped us, and the command and control approach to dissemination of information at the height of the pandemic was essential so that again, to

that rapid change, but also what was very necessary was a compassionate leadership style. As part of that, as the previous speakers have said, the psychological impact of staff and the constant change and the high emotional stress and the change fatigue needed compassionate leadership in order for staff to be willing to come back to work the next day

and the next day, and to work night shifts and work weekends, which our teams weren't used to doing. And perhaps now it's moved into less of the command and control. And it's is that collective leadership approach and an a massive part for us and for, you know, the history of all of our teams developing is the acceptance

of the support from our regulatory bodies and supporting us extending our own boundaries. So in a way, we're out vaccinating people, we're taking our true blood gases, we're doing things that would be in the role of other professions and we now taking those on.

And so that's been essential. Definitely helped. Next slide, please. So what made us vulnerable or what would make it better? Having relevant business continuity plans that the plans that we have, if we imagine to disaster were very one dimensional, they didn't consider a prolonged attack for want of a better word and particularly something that doesn't just solely

affect patients and the hospital, but affects the workforces, families and their social lives and their psychological well-being. There was no appreciation in those business continuity plans for the emotional stress that it had on the workforce. And if you look at it through, I don't know much about this, but this seems the complexity theory seems just about right

out of our business continuity plan seem to fit into the simple knowns. You know what, if a fire burned down a particular part of the building? But in reality, a lot of our time seemed to be spent in the chaotic, unknowable.

And I wonder, you know, going forward in our business continuity plans, we need to include in that. But there's going to be periods of chaos and an emphasis on building our emotional and psychological resilience and other things that were key was our baseline resource.

We can always say that we need more within nursing. It's built into our workforce in the UK that we have had a ring built in, so we know staff will be on annual leave, they'll be sick leave. Then we study leave.

So we factor in 22% additional staffing to cover that. When the allied health professions, we don't we don't have that. So when our staff are off, then that means that there's a and our workforce is diminished and we know that in COVID within our hospital, we were 30% less than the staffing that we should be.

So therefore we had a third of the third less allied health professions better to support the crisis than we should have done. If that was built in, then we wouldn't have been so short. And so these are not put in there, but picked up on earlier with the leadership of all of our staff.

So leadership skills, you know, traditionally have been at the high level and staff and we know three things that we need to be developing the leadership skills of all of our all of our profession so that, you know, when when it hits the fan and anybody, any profession, any level of those professions registered or registered can and

has the competencies to lead. Next slide, please. And so I suppose for me, I'd be really interested to get my time machine and go into ten years into the future and be able to look back and see just how this pandemic has accelerated the the health care innovations of influenced by the allied health professions.

So we already know expanding our skills. And there's more of us now able to prescribe and those regulations have expanding. We've got new skills. I could take vaccinations and other other shared skills with our colleagues. And it's also about this is giving us the opportunity to put the right skills within the right place.

So for example, we've got occupational therapists who are now going out in ambulances because we know that. And if if an ambulance is called out to somebody who's had a full well that he can go there and start to put in place equipment to prevent falls in the future, we have physiotherapists who are working as first contact

practitioners in emergency departments, so they're they're reducing the time that perhaps the doctors and nurses might have had. If someone comes in with a musculoskeletal problem, they Typekit that patient straight to the physiotherapy department. So we're working in a in a smarter way.

Yeah, and I'd be really keen to see how we harness the true potential of the allied health professions and the future of health care resilience. Final slide, please. I was just to say thank you to all of the allied health professionals and in our hospital and national airspace across the world to the health care colleagues that we

we've worked with. Thank you very much. Thank very much indeed. And another great presentation, and I'm sure that many of us don't really recognize the value of a piece, and we time to focus on particular jobs because obviously it's that that's the nature of perhaps the service itself.

And so it's a really great to see that, you know, there are other people in the background. Actually, we don't see them, but they are doing excellent job. Now we have Helen back with us. We hope that the internet will not let us down as well again.

So, Helen, you want to continue where you stopped, please? I will I will try my best. Can you hear me too, Bill? Yes, we can thank you. Very scientific have opened the door to let the internet in, so let us see if that helps.

You never know the votes, so I'll plow on just to refresh. So my research was capturing the experiences of nurses who were redeployed into the ICU or into two other areas around the hospital during the first wave of of COVID, when actually everything was was pretty scary, and I wanted to try and validate some of these experiences

we'd already linked through to to the previous session from Dan, because we'd have these noted these, these feelings of being unsupported and abandoned. So this concept of do I matter when I'm working on the front line? That certainly was was with lots of people felt they didn't matter, and that had an impact on how they felt and

how they managed. The nice thing that we saw from the research was there were lots of very positive experiences that came about as a result of being redeployed and lots of peer to peer support. An awful lot of shared really sort of heartwarming shared experiences that that meant that people were united and both professional and personal relationships

have developed from that, which is a really positive thing. So if we can have the next slide just to explore all the things a little bit further, this willingness to work from the we had a really rich narrative data that came through from the responses that we had from nurses working who were redeployed, and there was a

really high sense of willingness to work. And in fact, actually, as the pandemic progressed, more people were willing to work. They felt that the pandemic meant they had a duty to step up and they wanted to help. Next slide, please.

And they were willing, but they were very stressed and very anxious about the work that they were doing. That was really kind of critical. And there were emotional fears about patient safety. So I had a colleague who has been a specialist nurse in transplant medicine for 15 years.

He hasn't worked on Ward in that 15 years works at a very high level, very highly respected and was terrified to going untoward. And his main concern was that he would do something to compromise the safety of his patients.

That was his his main concern. And it's a lot to ask someone to do. He previously managed this ward before he'd moved into a specialist role, but he still had an awful lot of anxiety and fear, and they were real, practical, organizational logistical problems as well.

So I was redeployed to ICU. There were there are three different types of I to you that are any shift I could have been sent to. And it was never decided where I was going until the shift itself.

So it meant that every time I turned up for shift, I was late because I had only just been told where I was going. So I would miss the universal handover to all the staff. The nurse waiting for me to take handover, who was desperate to get home was pretty understandably a little bit miffed.

And so very often he or she might be a little bit cantankerous and wouldn't get through the handover. And it just started to shift off in a really bad way. So that's kind of a very small logistical things which actually looking back on, we can learn from and hopefully improve on moving forward.

Next slide, please. Chris. Poor communication was a significant problem that was reported by these nurses who were redeployed three particular points. A lack of information. So not knowing where they were going or inside one of the cases told they were going to board A4.

Now, if you're not familiar with the hospital, you know it's a big place. You've got no idea what would A4 is, and you certainly don't want to be the nurse who's ringing up a very busy ward and saying, Can you tell me what you place?

But actually, it's really important that, you know, whether you were going to a surgical ward, a medical ward, you know what you're doing just so you can start preparing lots of very short notice

redeployment, which people find very, very difficult stories about notes on doors to say, you know, don't come to work today, go here.

So people turning up for their usual job and then being redeployed, which people find very difficult. And then finally, despite this obvious willingness to work in reported willingness to help and a feeling of a sense of duty, nurses were still upset and antagonized by a very paternalistic method of communication that was used.

So it was very much since there was very much a sense of, I've been told where to go. The demographic of the people. The respondents were older nurses generally. So I think the demographic of being redeployment that you were very often in a in a specific specialist role and so weren't necessarily working on the front line.

So these are nurses who are used to running their own clinics. They're used to running their own diaries. They used to work in two very high clinical and organizational level and so resented this sense of being ordered where to go and also felt that perhaps the skills weren't used to the best of their ability.

So you have nurses with ICU experience being sent to the ward and those without ICU experience being sent to lie to you, and a sense that if they had been more involved in the decision making and perhaps asked their opinion about where they might go or when they might be redeployed, they would be more effective.

Next slide please, Chris. And then there was these feelings of being unsupported and abandoned while they were being while they were redeployed to two kind of key things. The first was there was a real confusion around the role of the existing mine manager.

So quite a neat quote was one of the respondents said My original line manager was asking me when I was coming back and the line manager of my redeployed unit was asking me how long I was staying. And nobody could tell me the answer.

And, you know, week after week after week when I was having a router that was running week by week, it's very difficult to to run and to to plan and make arrangements for that sort of thing. And I think those sorts of organizational problems are the kinds of things that will contribute to people going off sick, contribute

to people potentially not turning up and not being present for work. The other thing that was noted was that there was a sense of a lack of leadership, so linking in to people's slides, they're needing

that really robust and critically visible leadership, compassionate leadership to make sure that there was a sense that, I guess, that we were

in it together and the people who were making the decisions were with will get this as well. And there was a real sense that nursing leaders in the hospital were sitting in their offices drinking coffee. Now I'm sure they weren't.

I'm sure they were incredibly stressed and working very, very hard. But there was this perception. And when senior nurses visited wards, it was very often felt there was a theme running through. This was patronizing. They were coming to visit and it was a waste almost.

And there was this sort of and slightly patronizing with coming to visit you, working very hard with hope and getting on okay. So that was quite it was quite difficult. These are quite kind of big feelings and quite difficult things that were going on, but good lessons and things that we can move forward with.

And then next slide, please, Chris. And to finish on a positive thing, there was a huge sense of satisfaction of achievement that was associated with being redeployed. There have been like I've touched on sort of personal and professional relationships that have grown out of out of the experience, but improved working practices.

So it's as basic as understanding the problems that other departments are facing. Now I'm back in my regular role. I have to request to you bit every now and again, and it's it makes such a difference to know who I'm talking to on the phone.

They remember we did something together, we worked together, and I understand the challenges they have so that when they say to me, OK, Helen, I'm going to see if I can get you a bed for your patient. But you know, what can you just give me ten minutes?

I know what the pressures are that they're dealing with and why they need that ten minutes. And that's really important. And I think it's been huge benefit in those experiences of sharing, you know, how other people work and other departments.

So next slide, please, Chris. So then finally, some of the recommendations that came out of the research that we did and some of these are linked through from the themes, and some of them are direct requests that were repeated by some of the participants.

The key thing is that in terms of logistics and in terms of leadership, redeployed nurses within a pandemic or within disaster management should really be considered as a very distinct workforce group. They're under very specific pressures and anxieties.

There was talk about considering the need for redeployed nurse, lead nurse, a figurehead, someone who could be contacted and someone who was seen to represent this really important workforce group a call for dedicated emails through social media groups, specifically again for redeployed nurses so that things information can be shared.

You know, a group email where there was a list of all the wards did is as simple as that would have been really, really useful. Logistical things, the provision of a contact. So having someone that we can call if there was a problem and opportunities to feedback.

And that's really important from both day to day issues and also longer-term debriefing that kind of thing because it's very, very easy for these nurses to fall through the need to have experienced quite intense and at times terrifying things on the ICU and very sad things.

But then just go back to the job and fall through the gap of formal debriefs and support guidance for line managers, I think would be really important to make sure that they understand where their responsibilities lie in relation to a new line manager with redeployed manager and critically, like Pippa, said, an emphasis on on on leadership, making

sure that actually everybody has this ability to demonstrate leadership behaviors and stand up and offer support, but also make sure that those who are in full leadership roles understand that in times, in times of crises, in times like this, visibility is critical to make sure that people are being supported, right?

Thank you very much. Letting the internet in obviously worked. Thank you. Thank you very much indeed. And a really, really good good. The presentations, I mean, to be honest, these three sets of presentations are sets. They are really well connected as well after the same thing for the for the first step, obviously.

But the second step is really kind of interconnected. So I'm going to see if Hamdi has got any questions for us. Otherwise I just picked up a question myself from Helen to paper, which I would ask him on her behalf.

How have you got that? I think both of us. Yes, we do have some a couple of questions related to the presentations, and I really found them very good questions and it's related to the quality of the presentations.

So the first question is addressed to Professor Daniel, and it's saying wouldn't why willingness to respond in an emergency should healthcare workers have no choice but to respond during the state of emergency? I know it's tough. It's a great question.

Well, I'll say this. It's not the military. And so there are different expectations in the civilian sector, just writ large then in in the middle, in any kind of military context, the set of job expectations that based on research we've done, for example, in health departments, we've got a lot of input, such as I didn't sign up

for this when I joined the health department, referring to disaster response. The same is something that we are looking to find in regarding our work currently in hospitals in Pakistan to see if that is part of the mix.

But it is. It is a great question in terms of, you know, requirement. I will say that there is a has been a reexamination of job expectations written into contracts and and those kinds of considerations here in the United States in terms of what people's expectations are and the consequences of not fulfilling those.

So great question. Thank you for your answer. Professor Daniel. OK, so the next question is addressed to paper and the question is, are there any examples of over responding to the pandemic and the cost to services and staff of doing this?

Or should we always over respond and scale at the expense of non pandemic patients? Oh, it's a good question, I think, and I think our first speaker of the evening probably addressed that any examples of financially over, but to my own experience, I think how our anticipation of the first wave meant that we, we we were trying

to get ready. And we spent a lot of time. We stopped all non-urgent activity in order to prepare ourselves. And I mean, in hindsight, as the wages go down, I think we've learned from that. But if we've got time, we fill it with time to get through as many of our patients regular patients as possible because we're

left with a backlog at the end of that. So I think over responding to me feels more like we're putting so much emphasis on COVID and we're. Throwing the spotlight away from all of routine work, which we have to pick up on the end.

Yeah. Thank you so much for your answer. And the last question for my part, before passing to me to the panel is addressed to Helen, so. And they're asking if willingness to respond is the same as willingness to work.

And also, if the findings that you presented have been published or not. Thank you. Thank you. So say the second part, yes, they have been published as of yesterday. I think it would be. Yes, they have been published.

So willingness to respond and willingness to work. I think for my part, and if we take responding as redeploying and if we take working is doing your normal job. And I think there are plenty of people who are willing to carry on doing what they were doing and lots of people who didn't want to redeploy, I suppose

, you know, if they were asked but but wanted to wanted to be part of something. I think that was very big, but very much wanted to do it on their terms. I think that was the situation. And, you know, they wanted to be consulted about where they went.

They wanted to be consulted about what they were doing. And certainly, I think retrospectively, there's this sort of idea that you say to people, you know, what did you do during the pandemic, which is quite interesting. And I've been asked a couple of times, you know, what were you doing?

And there is this this is real sort of sense of achievement. I can say I was in it as difficult as it was. And there's this real kind of wow, you and I to you, you know, kudos to you, kind of thing.

But that doesn't deflect from the fact that there were people who was still working and maybe didn't necessarily respond to the emergency situation, but were just as important and keeping the cogs of the hospital going. Because actually where we worked, we did continue to to do some transplants, which was was almost unique in the country because actually

, you know, lots of transplant medicine shut down. So there were lots of things that people were still doing as part of their normal work and didn't necessarily respond as an emergency sort of response measure. I hope I've got the right edge to that question.

I hope that helps in some way. Thank you so much. Now my question to the paper from you, on your behalf, to me is, is people, I believe that you were or you are one of the managers in Papworth and one of the Hitto asked that particular aspect of now that had was cooperating with which he is

talking about the guidelines for managers. So my question is how hard was it for you to, you know, get your staff deployed and what the what to deduce how to take that decision? And that is no tool for this, for that kind of decision.

What tools you think you would have you? Oh, I am. How hard was it? It was really hard. I would come home and cry at the dinner table, you know, to know that you had to ask your teams to do things that they were not trained for.

You know, I had I had team members who were preparing their bodies and they weren't trying to, you know that that wasn't the the thing that they went into to health care for. So you knew that you were having to to ask your staff to do roles that that were really, really challenging and you knew that you

were looking after the person. But you're also looking after the system and that you needed your staff to be willing. You know, it's all connected, isn't it? You need. You just have to be willing to come to work.

They want an object and you need it to be compassionate towards them and set up whatever systems you could do in order to set the cost to them. And I know that in the debriefs that we did anonymous debriefs, I got quite a few comments myself personally.

The staff found it really helpful that I put myself forward, so I was working on critical care. I was doing night shifts. I was near later stages, vaccinating people. But for the leaders not to be perceived to be stuck in their offices, drinking coffee, that they were up there, getting in there, doing it, walking in the shoes

of everybody else to be able to understand that. And I think then that need goes. You then to and to be able to manage your teams and understand their needs better and therefore to be able to respond to them.

And in terms of tools that was helped to dispose, I don't know. I think a lot of that is the thing that I've picked up on. But that's the lens that I see it through and through these talks is is that psychological support for staff and the emotional stress?

And I don't know how you make your teams more emotionally resilient, but I don't think we we put an emphasis on that. I think we make them, you know, we with resilience is about making sure they've got the clinical competence and that they can do this and they can do that.

You know, I can't imagine the martyr in Sierra Leone what it would be like to go through a crisis like Ebola and how drained that workforce must be. And then he comes, you know, he comes a pandemic. And you know, in Turkey, you've got a hospital that's flooded, you've got an earthquake and you've got it going on

. How do you deal with multiple disasters? And it's not just about the logistics, it's about the humans who are in those roles and that they're not just doing that job. You can't force a person to come to work.

He's got, you know, a mother who's in critical care themselves. It's it's about making sure that you have that human element of leadership. Hopefully, this webinar and a series of webinars will come up with a set of tools, new bells that will support us going forward.

Thank you so much, Pippa. Yes. Well, we are certainly glad to inform you that, you know, Helen's people has just been published unless we have another paper that just has been accepted for publication of talks about the capability and the idea behind all this project.

The pilot project is about tools and to bring, you know, more people to discuss these these issues, and that's why I've got next month's webinar is about those agents or those soldiers who are in the background who absolutely no one sees them.

And, you know, I mean, talking about patients, talking about the relatives, et cetera, we just don't see them go to the hospital because we expect everything is working. I would expect you guys to be there from looking after us, and that's it.

But actually, there is an alternative to sort of, you know, in the background is working and hopefully those ones will some of what some of them would be talking to us. And in Marshall and Seventeen's, so it's I'm really aware of the time.

So I think I would like to open the discussion panel now, and we've got someone who is also in the background who has been very, very patient with us now that is Professor Premiere and a or a manager.

And he has been really very patient and very quiet there. I mean, you want to show us your face, please, and and talk to us a little bit, possibly give us some of your tips. I know that you've got really massive the global experience.

So if you can just explain to us a little bit, you know what lessons you learned so far? A comment on some of these presentations of. Thank you. Thank you so much. Nabel do you hear me? It has been easier to listen to all of the speakers.

The things that have come up here is. They are all very interesting, and they are all part of resilience, response, management of disaster and emergency and, you know, just name it. So I tried just to pick up some of the some of the keyboards and try to quickly go around them.

And I met was talking about the hospital and also come up with the keyboard finance. How can we finance all we are going to do? And for something that rarely happen, we get that is what we have a problem.

And whenever we talk about these things. They are not going to happen and they are not going to be finance. So one way to do that, I believe, is to bring the question up to the highest managerial level at each medical facility or each level that are supposed to respond, to mitigate, to recover and whatever.

Because in that case, you have the issue up every month and you can always talk about what you need, what you don't need. What is going on around the world. And if that happened to me, or if that happened to this hospital or whatever it is we're dealing with, that's going to cost in training, that's what it

costs in devices and that's going to cost in staff and things like that. So this is one thing that we try to establish here. This is nothing that is easily done, but you may succeed if you have some kind of preparedness center.

And by having preparedness issue on the managerial level, the managers will be updated all the time. What we also talking about a lot was how we reacted to different things. And this is also very interesting term because what we are supposed to do, according to W.H.O., is to be proactive, not reactive.

And that means that we also need to realize that things happen in future and we need to start thinking about how we can involve the different part of resiliency or disaster and public health emergency into one thing that we can all follow.

I really like very much like the Alexandro, and also I think people had also this two concept that I really like to follow, and the one was surge capacity concept. Talking about the staff, the staff structures and the systems, and I usually try to bring it to what people was saying about CSC asset, which is the MIMMS

concept. Look at the leadership command and control and, you know, safety communication assessment and the triage treatment and transport and and what what is very much important. What I have learned is that the assessment issue is is the key point because most of the time we don't have the same assessment.

We don't measure the the threats or the problems and the same way. That can depend probably on the fact that we don't have the same knowledge. We don't see the same as stuff. We don't realize our capabilities and limitations.

We were talking about capabilities here to your next publication. I mean, this is the collaboration is not about giving to each other or something. It that's also another interesting part, because if you look at the literature, they talk about coordination, cooperation, collaboration and they put them all together.

But they they they mean differently. What we're talking about a collaboration, what people are talking about is collaboration. It means that we need to collaborate to end up something very unique, something that doesn't exist. We don't know anything about that.

And to do that, we need to have good attitude. We need that right attitude. I would say, and also to know each other's capabilities and limitation. That is very important when we are going to work together what we have been doing.

I mean, this is what you have done here and what you have heard from the speakers that was talking about what we what we call it here for fight and flight it. It is the reaction your fight or your flight.

And we have also looked at the willingness of health care staff to work during different situation. We come up with the same result that death showed. And also, we have a plan to do it in Sweden because what?

What happened here 2016? first time we try to measure it. With that, we will try to see what kind of preparedness we have for chemical attack and what people told us with that. That's not going to happen. So we then.

So only 20% answer our question, 80% didn't want to answer the question, because that's impossible. And that's about attitude, what attitude you have to what's going to happen in future. Again, we were talking about Dan Schorr or something about a figure that combine different part and what I with me, I think is missing there.

It's how we can engage public in what we are going into future and what they can do. We have initiated something called flexible search capacity that take his staff as tough as structure and system and put together with the CCF and see how we can do public better in responding.

And there are a lot we can do, and that can be educational initiatives for both public and other people working with this, and they're doing that. We initiated something called Home Isolation Center in Thailand recently, and the paper is under review for hopefully a publication is that we we actually used non emergency physicians and non non involved

physician like. You know, skin doctors, dermatologists and other people that didn't do anything. We had many nurses that they they couldn't go to work different of different reason. We took them and put them in a telehealth medical center when they could actually contact with the patient, the diagnosis and send the kits with diagnostic tools home and also

see if we can test them and treat them when necessary, avoiding sending them to the hospital. And by that, we could relieve the people at the hospital by unnecessary people. And so I mean, what you have been talking here, I've been patient, but I've been enjoying this and that it touches all this points and I think we

need to have more of this kind of webinars and seminars to to share our experiences. And maybe we can come up with new things to do this so we don't need to repeat each other's struggles just to come up with something that we can all follow up.

So thank you so much for our important inputs. And I hope that I have been giving you something worth to listen. Premiere, thank you very much indeed. That's that's really the excellent set of comments that have been taking that, you notes.

We had just very real comments, so thank you very much indeed. And I believe that we have a question from the audience. How did you want to raise a question for us, please? And then we'll go back to our speakers.

Yes. So the question is already related to what Professor Ramirez has been saying earlier. So has financial reward or incentive incentives for front line stuff have been implemented or considered anywhere to encourage staff members willingness to respond during any times of crisis.

And if so, does this motivator help increase staffing levels? No, the answer is no, and I think Dan was very clear that we have a different business, civilian and military, and there is freedom. There is the need for people to be willing to do something otherwise they don't do it in the correct way.

And what we found was that if you have the knowledge, it's not about the basic knowledge, it's about the hospital knowledge, the disaster plan, knowledge and things like that, you are probably more willing to work. This question is all I mean.

2009 we published a paper about hospital disaster preparedness, and people said their 2009 reward. If we have a place that can take care of our kids when something happened and you know, this is very complex, different social thing.

I just want to also comment on that even military can have a problem. Recently, we recently checked the not the willingness, but to how ethically people look at different situation and if they are willing to work. And we had many, many military guys in Sweden, Poland and some other areas that we investigated that they didn't want to

do what they were ordered to do because they realize that they have ethically problem accepting doing that. So ethics, you have not been talking about that, but that's also the biggest challenge. And we need to talk more about ethical perspective of disaster and public health management.

And that goes also back to rewards that you were talking about at which you back better than. God. Thank you so much. That's a good good, good good, really, and so people, I believe you've got a question for one of the colleagues, is it or my imagining it was a question from earlier, but then that I really

like to be able and willing framing of how we should be able to respond? And I wondered where you felt that that psychological resilience of staff should fit into that and whether if we somehow magic up this amazing tool to psychologically make them more resilient in that readiness stage, would that make them more willing?

It's a wonderful question. I actually think it fits into all three of those circles, and here's here's the reason I think that going back to the way we define ready, willing and able respectively, the readiness piece could have is there a resilience mental health building training program?

At the institution. So that's something that would fit in the readiness category ability, as do people, for example, have not only is there a training program, but are the trainers, for example, skilled and implementing things like psychological first aid or or variations of that.

So that's sort of an ability piece, but it also translate into translates into the willingness piece because by extension, that would enhance resiliency in terms of a willingness to respond. So I actually think it's that's one of those interesting aspects that I think checks all three boxes or all three circles in this case of the Venn diagram

, in my personal view. Can I have a comment, and I think you can put the dance word, in three other words, I mean what you need to have to do something is knowledge first and then you need to actually practice it to get the skills and then you need to train it to have competence.

So simple. And that's why we have simulations, exercises and you need to find something that really engage people. And to that point, one of the earlier presenters mentioned about how exercises are designed to build toward behavior, and I love that comment.

I think it's one of the colleagues from Turkey and I'm sorry I I remember misremembered whose presentation it was, but I definitively remember that. And I think it's so important because exercises can build toward behavior, not just how to use a two way radio, but why it's so important to show up or to use a Two-Way radio

if that makes. It's thank you, thank you, John, and I I have to go back to Ahmed because I believe that Ahmed is the one who actually started that by opening the cans this can of worms. And we know Brigette so, so many, you know, it's to us that there is really we saw major, you know, big

factors to consider, including the resilience of health care. So Ahmed, if if I ask you a question out of all these factors and based on your experience, obviously you when you are deployed, so what do you think you know, needs to be done or what, for example, if you had might perhaps have made your life much easier

when you were deployed? Yesterday, I met. And we just have, please. OK, so Will Will will leave Ahmed to sort out the Mike. OK. And perhaps we go to another one of the other colleagues and I would like to ask Hussein, actually, Hussain on stand actually has been really investing a lot and a lot in infrastructure and

health care infrastructure specifically, and we are hoping that the third activity of this webinar would be a workshop in Turkey. And so to learn and to see actually what kind of preparedness has has taken place there. And can you tell us what other other things as well, you know, that have taken place there because I understand that

you were doing plenty of work. So a lot of learning from that, you know, different cultures and you have doing a lot of the trainings, you know, simulation and things like that. What do you think you need most now?

The police again question the question is what what do you think that Turkey needs more most urgently now in order to enhance its resilience? OK, thank you. And interchange is nowadays in the learning, the resilience, the platform, the COVID 19 positive impact, the university and Turkish Red Crescent and disaster management and emergency residency and the internet and

internet based the learning platform, uh, the established. And a very, very, very important and for example, the teams established in the UK used to learning the disasters, preparedness and exercise and work and tabletop exercise and uh, while exercise is a realistic exercise, uh, continue the different institutions.

And the bachelor's degree and master and Ph.D. program in the field of the, uh, these these programs included the exercise lessons, uh. OK. Yeah, and I go to the point that I think before going to arms, I would like to go back to Alexander on this one specific because I believe Alexander Marfo spoke about using the virtual

reality to train staff. My correct was that Alessandra. Can you? Can you just explain to us a little bit more about the virtual reality tour that you were using? Can you hear me? Yes. OK, I'm still having issues with this team.

I'm very sorry, guys. I'm doing my best. Yes, we've gathered experience during our Ebola wing Ebola Times, building this virtual reality. And for COVID, what we did was training primary care professionals and people working and professionals working at the nursing homes.

Just showing, donning and doffing the real how like, how aid the department, ICU and sub ICU were structured. And this was ended up being very useful because it showed people remotely how working in intensive care with COVID patients, CPAP and ventilation, so was was for people like primary care professionals and community health workers who didn't have, of

course, access to the to the emergency department because that I'm seeing something that was mentioned by Professor Cora Mendes. I think something very important during this COVID 19 pandemic is also is training not just the people that needed to access hospitals, but also training people that have been historically left out from the training in disaster medicine, like

, for example, even primary care professionals who would have thought to involve them in disaster preparedness. And I think that's that's a key lesson from this pandemic. Excellent, Becky. Thank you

so much, Sandra. That's perhaps something that we have raised up in our latest as well, which will will be shared with all of you.

And of course, the audience as well where we we believe that yes, every single person in the health care is playing a role. So no matter what their role is, no matter what, the big Hollywood hospital is big or small or individual, anything every single person is extremely important.

That's what we call the jigsaw. The Jigsaw model basically for resilience. So every single part or small piece plays a big role. And so I would like to go back to Ahmed. I believe it is. It is off his mic problem on the diamond.

Do you want me to reformulate the question? Are you happy with it? If you can say it again, please. OK, yes, sure. So you mentioned you must have so many things and you opened up her, you know, kind of world for us.

Looking back, you know, but now talking about, you know, problems of the system itself from talking about, you know, the funding and all those things. What do you think the most important elements of all those and specifically, if you consider that yourself, you would one day be deployed that you know in the hospital, what do you think

? That's something that if you perhaps that would make your life much easier. So generally speaking, here in the UK, funding wasn't the main problem because from day one, our treasurer, Rishi opened the box of gold and just released big amounts of money going into everywhere.

So we didn't have any financial problems in the UK. Unlike other countries around the world, they didn't have money to cover the expenses of the basic services they needed during the pandemic. So I wouldn't say that finances were a problem in the UK, but we had other problems mainly planned from day zero.

So every day we had a new plan different from the day before, and that made us as a staff, really confused. And as has been mentioned in all the other present presentations about staff redeployment, that that was a painful process.

For me, it wasn't a big problem. I'm a consultant anesthetist, still being redeployed to intensive care wasn't a problem at all because I'm fully trained to be a consultant in intensive care as well. But bringing people who are not used to work on the wards and intensive care to do things that they have never trained for, and

they felt one unappreciated to unsupported. This is another problem. So what we need or what we need is to plan ahead. Before that happened to get everyone who could have been used one day during a disaster and trained them.

Do simulations, do drills do everything long before that happened? So when it happens, we are ready to redeploy everyone. Everyone knows where they can work. The problem in the NHS in the UK now is the service fragmentation. We are trying to do the other thing.

We are trying to get every job that we do and divide it into five or six different jobs to be done by five or six different people. What everyone is specialized in one single bit of the service so we can cover lots of ground by several people to finish the waiting lists and everything.

But that comes on the expense of resilience. So all those five people are not skilled enough to cross work in other parts of the hospital because they were not trained to do that. And when the problem happens, you won't be able to move them because they are not trained.

This is what we have tried to do during the pandemic, and people didn't feel comfortable. But if you train them enough before a pandemic situation, they would feel more comfortable to do whatever they are trained to do. So I think this is what we missed more in the UK trained people who have confidence and pre plan to

move them around hospitals. The other thing that we were short of is the infrastructure. We didn't have enough beds, we didn't have enough intensive care A&E physicians, A&E spaces, which is the chronic problem in the NHS in England.

So these are the things that made the patient flow very slow and very problematic, and these are the things that need to be addressed here in the UK. I'm sure that in the rest of the world, it's completely different with more problems and different problems, unlike us from the availability of intensive care and dilapidated ventilators, availability of

medications and train staff. But this was our problem here in the UK. I think people and Helen will back me up on that. Thank you so much. That's yes, the opening up again. That's a good thing, but Ahmet always his he's really, really good in opening these kind of cans and creating a lot of discussions around these

. Now I would like to accept the jump tomato because Marco was talking about the case of Syria, and he said that and we all know that when you set up your own area, that Africa has Ebola as well.

So I don't know exactly Marta, how much, you know, Sierra Leone learned from from that Ebola in order to respond to COVID and perhaps know what do you think will be limited, perhaps or low income countries, you know, is needed in order to to improve their resilience?

Well, how much they learn. I think a lot, as I said, their mindset at least was prepared. Of course, the consequences of Ebola will be there for years. I mean, it was painful for everyone involved there. And I mean, the psychological toll was this was extremely high.

And and even the I mean, it's completely different culturally, not having the possibility even to share this psychological toll because mental health issues are psychological, psychological distress are not perceived as we do. It's it's really a stigma for people.

So they they they they they're not going to address this issue and go talk to someone because then it's it's I mean, it's a real problem and it's maybe linked to, I don't know, supernatural causes or whatever. So even not being able to have any one to address this issue is is a tool in itself what they

need to be resilient money and the structure system workers, everything, I mean from resources. The main problem is that the entire health care system is currently relying on external help. They are receiving funds. They're receiving grants. There are a lot of NGOs and the moments that I mean NGOs, they can help, but they cannot be held responsible

for building their resilience. These should come from the governments and the governments need to have the resources to do that. So it's something that cycles back and it's really hard to find a name. I mean, a solution for that, even implementing Nemser.

I mean, the moment we stop supporting NEMS and the Italian just stop supporting names and everything became under the UN. I mean, the governments, we thought that we built this system that could be self-contained. But of course, there are always problems because even though out of the 200 ambulances, for instance, we only used 80 because we said

, OK, so that they will have 124 spare pieces for maintenance. So they don't have to build that. They don't have the possibility to, you know, do maintenance. Sooner or later, those hundred and 20 will finish and and even paying one of the strategy and this is something that I wanted to address at the beginning we didn't experience

in Nemser assured. I mean, people not willing to come to the to the job and the response during the COVID 19, just because we paid them more than what they received from the from the government. So this was not the case in the hospital where of course, people didn't show up to work and there was also strike

because there was a huge strike actually in Freetown in a major COVID hospital, they stopped treating patients because doctors were not paid. So this is something that it's it's it's going to be a major issue. I mean, all the ways.

But I think that they were mentally very prepared and they were the Ebola experience really helped them, you know, being very fast recognizing what needed to be done and then mobilizing all the resources that were available at the moment.

Nixon, thank you so much, Master. We are ten minutes or the not behind, but you know what? I suppose you have the time, and I would like to ask, first of all, all of the speakers if they have any other comments to add or if you have any other questions from the audience.

Otherwise, I think we can close this. Can I come just with one comment there, Bill? And yes, I think Martha mentioned very important issue here too, and that's a cultural factor. Of course, it is very important, and it is also very important to me how we perceive different thing and the many people, maybe they don't perceive the

same issue in our country as we do here. We are all the time talking about resources and how we need to get more resources, money and everything else. But that's different. But one point is that just just remember resources and money and everything else.

I don't think that can ever be enough because we get more. We have more problem. And at the end, the disaster is what? Happen and we don't have enough resources to manage, so we are going to have disaster even in future, so we need to think how we can use what we have.

one person said. The happiness is not what we can get, but what we can be very pleased when we have it. And we need to use what we have in a smart way. Just one notation, and that's about leadership to be a good leader.

It means you can accept the soldiers go on the field and lead there, but you believe inside yourself. That's to make our decision, and not many of us can do that. That's an excellent note. I mean, I think to conclude with it's there, all the colleagues of note are happy with this.

If they if anyone has got a question on the comments, please let us know now. Otherwise, we'd would like to thank you all indeed, for all this excellent PopSocket excellent set of presentations. A lot of folks, a lot of ideas and a lot of thinking and food for thought mostly and so would need to analyze all this

. So, yeah, so we'll do this hopefully over the next few weeks or so. And also just to remind everyone that our next webinar would be on the 17th of March. And so we have people coming from the estates.

I mean, this is the infrastructure, basically infrastructure we have already confirmed. So a senior director from one of the major hospitals here in the UK to come and talk to us. And also we have other colleagues as well.

Researchers come to talk to us about the supply chain of the PPE and all the problems that we face that the work faced at the very, very beginning. So we're going to talk about a number of other issues that are hidden as we set them out.

We know many of us don't really see that many of us as patients have this stuff that we can't really see them just to expect that they are there. And I saw, but actually, they are always there when we needed them specific and in disasters.

So again, thank you very much all, and we look forward to seeing you again next month. Thank you. Thank you, my. Thank you. Thank you all.