

## MoS Rapid Response Transcript – Dr. Bon Ku

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**BOB SAFIAN:** That's Dr. Bon Ku, an emergency room doctor in Philadelphia. He's been on the frontlines in fighting Covid-19, trying to manage health care for a flood of patients. It has required constant iteration, from sourcing treatment options via Twitter to 3D-printing test swabs.

This is Bob Safian, host of Masters of Scale: Rapid Response. Bon Ku's experience is emblematic of the resourcefulness, risk, and hope of medical first responders in the pandemic.

He says he's pretty sure that he'll get Covid-19 at some point, and he worries about infecting his family. He also worries about faulty incentives in the medical system and offers on-the-ground business lessons for us all to take away from the crisis.

Let's listen in.

**[THEME MUSIC]**

**SAFIAN:** I'm Bob Safian and I'm here with Dr. Bon Ku, an emergency room physician working in the Covid ward at Jefferson University hospital in Philadelphia. He's also an assistant dean at the medical school there, director of the health design lab, and author of the book *Health Design Thinking*. He's been doing regular shifts at the emergency room, staying at a nearby hotel, and then on off days returning to his family.

He's coming to us from the hospital itself, just across from the emergency room, as I ask my questions from my home in New York. Bon, thanks for joining us.

**KU:** Thanks for having me.

**SAFIAN:** You work directly in the Covid ward. How did you get that assignment?

**KU:** I'm an emergency room doctor, so all of us who work in the emergency room spend some shifts in what's called the hot zone of the emergency department. So we see patients who have symptoms of Covid-19 there, and those patients go to the hot zone because we want to eliminate those patients who seek regular care in the emergency department from being infected with Covid-19. So I just did a string of shifts over the past 10 days in that part of the emergency room.

**SAFIAN:** So what is a typical shift? Has it changed from what a shift was like six weeks ago, even four weeks ago? Is it changing all the time?

**KU:** When this first started it was very dramatic. I had worked an overnight shift in the emergency room, the volumes had been down by almost by 50% on some days. And so it's been eerily quiet in the emergency room. It's been like an empty ER.

And then when I returned, this was in early March, then when I returned to working in the emergency room, all of a sudden I saw my colleagues wearing full-on protective gear. They're wearing those scary-looking hazmat suits with the PAPRs, these are those hoods and masks that you put on. And I had come onto my shift and immediately I had to intubate a patient who was suspected of having Covid-19, and that means putting that patient on a mechanical ventilator. So the emergency room literally changed overnight, it seemed like.

**SAFIAN:** And has it then stayed at that same feeling, that same pace since early March?

**KU:** We saw a rise in cases dramatically. And it seems like right now it's plateauing, the number of Covid-19 cases. And what's also been encouraging is that people who have regular diseases that are outside of Covid-19 – talking about heart attacks and strokes and people with appendicitis – those patients are starting to come back to the emergency room and seeking care. So our volumes have been picking up, but the number of sick Covid cases seems like it's been plateauing – but the situation changes from day to day. So it's really hard to provide a day-by-day analysis. I think what we are looking for is trends in that data.

**SAFIAN:** Watching and reading the news, it can be hard to keep track for me of sort of what the medical and treatment information is that's current. For a doctor like you on the front lines, how do you know what is most relevant? How do you keep up?

**KU:** It's hard to keep up with the news. There's so much misinformation and disinformation out there. In terms of treating these patients, it is very complicated,

because it's a new disease that we've never seen before. And we don't have the randomized control trials that normally guide our medical management of these patients.

So what I've been doing a lot is talking to my emergency room colleagues in New York City, getting advice from them. A lot of doctors like myself have gone on social media, actually on Twitter and on blogs and podcasts and learning from those doctors who – that I trust – who have managed many more of these patients, and getting the real-time advice, because our traditional method of learning through scientific journals, it's too slow right now.

There's a whole community, it's called FOAM, free open access in medicine, and there are some experts that I trust as authorities – one of them is [Dr. Rich Levitan](#) – who have been talking about best practices in the management of patients with Covid-19. And so a lot of experts have been sharing their management of patients on Twitter and on blogs. I'm reading a lot, always trying to educate myself.

**SAFIAN:** The public health information seems like it's so, so fragmented, right? And you're not necessarily able to rely on your own hospital, your own hospital system, or I guess your own hospital system may not have enough clear information.

**KU:** I think this has exposed some fractures that we have in our healthcare system, and one of them is the ability to act on real-time data. Because data – and especially data from electronic health records – are siloed, it's very difficult for me, a doctor in Philadelphia, to learn about the management of these patients from doctors in New York City who've seen just more cases than me. So that's why we've been relying upon social media to get some of this knowledge. Our way of disseminating data is full of roadblocks.

**SAFIAN:** The electronic medical records – those are not designed to be linked up in this kind of way for community health purposes?

**KU:** Correct. Electronic health records are amazing, they're great, but they've been primarily designed for billing, and they have not been designed for doctors in real time to make a decision at the patient's bedside.

And I think what we can learn from this crisis is: how do we fundamentally change our data systems? How do we redesign them in order for us to make real-time decisions based upon quality data?

**SAFIAN:** I know you have long been interested in the interaction between design and health and medicine and how to make that work better. I know amid your role with your patients you're contributing to and encouraging design solutions.

**KU:** There's two different projects that Health Design Lab that we've been engaging with. One, it comes from this need for mechanical ventilators, and back in early March, what's horrified me was that it was projected that we would not have enough ventilators and that we'd be in a situation like our Italian colleagues where they were making decisions on – these horrible decisions on – who gets a ventilator and who doesn't?

And I was fortunate to link up with a team from MIT who's working on a bridge ventilator, as they call it, as a temporary solution until a hospital ventilator became available. And so this team of MIT engineers work with several companies in New York City actually, New Lab and 10XBeta, to design and manufacture a ventilator within a month, which has been amazing. On our end, we've been working on a project of how to safely manually ventilate a patient.

So that means training of volunteer corps of humans to bag patients if there were no ventilators. So we just did this because – we're literally trying to build a plane while flying it. We don't ever want to be in this situation where as a doctor you have to decide who gets to live and who gets to die. And so it was important for us to act quickly and to come up with options. Fortunately, the way the pandemic is going, it looks like we're going to have enough ventilators for this phase in the spring.

**SAFIAN:** Well, that's reassuring. Certainly I can see why you wanted to have other options. You also have a 3D lab at the hospital. What are you doing in the 3D lab?

**KU:** So my colleagues have been working on a project to 3D-print swabs for Covid testing. What has happened as we've expanded our ability to test patients for Covid, we've run out of these little sticks that you put in a patient's nose in order to test for Covid. If we don't have those sticks, the swabs, we can't test. And there've been researchers working with 3D printing companies to open-source how to 3D-print these. So what we've been doing over the past week is repurposing our lab in order to manufacture these Covid swabs in-house.

**SAFIAN:** It's like you have to be your own supplier as a last resort.

**KU:** It is. What this pandemic has exposed is the vulnerability in our supply chains for hospitals. Hospitals are designed for maximum efficiency, which is good, but it leaves no room for hospitals to build this surplus of supplies and medications and equipment that's needed in order to meet surge capacity. We're running out of some of the most basic medications. Some of my New York City colleagues have told me when they intubate a patient and put them on mechanical ventilation, there's not enough of the proper meds to sedate a patient. It's a scary thing that within a matter of weeks a virus has totally upended the supply chains of hospitals across the country.

**SAFIAN:** And I guess some of this is, if you're running your hospital, from a business point of view, before this, well you don't want to pay for equipment or medication or beds that you're not using. So you try to keep things as full and as efficient and as spare as possible. And then you get a surge like this and suddenly that whole approach is, well, the limitations show.

**KU:** Oh, absolutely. Where hospitals have, in the hardest hit areas, have become overwhelmed is because hospitals weren't designed to meet surge capacity. Hospitals weren't designed to deal with these pandemics. Hospitals make money from elective procedures and operations scheduled, the specialty care outpatient visits; they lose money on primary care. Hospitals lose money on public health and prevention.

Hospitals don't get paid for preparedness, and I believe that healthcare is fundamentally going to change. There's going to be no going back to normal "pre-pandemic," that there's going to be a new normal, and that there has to be a federal mandate of how we re-incentivize hospitals, of changing our payment system so we incentivize public health. Right now, because public health, because primary care, are money losers, what we see now is some hospitals are closing down, some hospitals are laying off healthcare workers, in the worst public health crisis in the century. There's irony around that.

**SAFIAN:** You mentioned earlier that there was a point where the flow of patients who you normally would see in the emergency room slowed down. What happened to those people? Where did they go?

**KU:** We don't know. Across the board, when I speak with my colleagues, my emergency medicine colleagues, some of the data that we've gotten is that there's been a 40% to 50% decline in volume of emergency room visits. One explanation is that people are afraid to go to the hospital. A relative of mine, she had called me last week and she was in severe pain and we FaceTimed each other, and I looked at her and I said, "You got to get to the emergency room." And I thought she had a kidney stone, which ended up she did have, but I said, "It's safe to go to the hospital. We're going to protect you from getting sick, so you should go to the hospital."

But I think a lot of patients, what we're seeing is a delayed diagnosis that they're staying at home when they're having symptoms of a heart attack, symptoms of a stroke, symptoms of a severe infection when they should be getting care, because when I think the public looks at what's going on in emergency rooms, they think it's what's happening in New York City – which is not the case for most hospitals across the country. Yes, some hospitals are like that, but a lot of hospitals can accommodate you, and it's safe for you to go and seek care.

**SAFIAN:** And as you described this sort of 40% or 50% drop and this kind of delaying, do you think then there'll be some sort of second-order impact, like another wave of different kinds of patients?

**KU:** We're going to see that the collateral damage from Covid-19 is probably worse than the coronavirus itself. That there are going to be a lot of patients who have not gotten the care for their chronic conditions, that they've delayed diagnosis, that they're going to have worse health outcomes.

**SAFIAN:** I have to ask you this question: How much do you worry about your own health?

**KU:** I don't think about my own health that much, because I had already resigned myself to probably getting Covid-19 from the beginning, and that it is a risk that I take. I feel very fortunate at my hospital that the leadership here has done an amazing job of preparedness. So we have stockpiles of PPE; every time I go to the hospital I could wear an N95 mask. I have the PAPR, the hood that I can wear. So I feel very, actually, protected at work. What concerns me more is potentially infecting my kids and my wife. And that's caused me to sometimes stay in a hotel room, sometimes not. And I get very concerned of potentially having Covid, being asymptomatic – not showing symptoms – and in that latent period infecting my children.

I was able to string a bunch of shifts together. And so during that time I said, "Well, since I'm working a lot in the hospital this week, I'm going to go and check into a hotel." And now this week I'm not working that much, I've been sleeping at home, I've been away from my family. We have a spare bedroom that I've been sort of sheltering in place there. But it's hard. It's hard on a lot of emergency room doctors, a lot of frontline healthcare workers and nurses. It's this mental stress that's always in the back of our minds.

I've spoken to some of my colleagues in the New York City area, several of them had Covid. I learned that two of my colleagues, their moms just died of Covid in the past week. And another doctor, his mom is currently in the ICU with Covid. So it's a lot of mental stress on many of those who are working in emergency rooms, are working in ambulances, of: am I infected and am I going to infect others?

I have a whole protocol. As soon as I'm done working a shift in the emergency room, I go to my office, which is right above the emergency room, I strip out of scrubs. I leave my shoes in my office, I put my scrubs in a trash bag, and I put on a new set of clothes. And as soon as I get home, I usually have a bag of scrubs I immediately put into the laundry, and then I go immediately to the shower. That's a routine that I and a lot of healthcare workers have been doing.

I've heard, some of my colleagues actually strip down at the front door and before they even enter into the house or they're literally getting naked and probably their neighbors could see them, but there, it's: I don't really care, because it's either me exposing myself or me potentially infecting my family.

**SAFIAN:** And when you come in, how do they react to you when you come home? Are they like, “Oh daddy’s home.”

**KU:** Yeah, sometimes they go, “Oh, I thought you were sleeping in the hotel.” And then I’m really affectionate with them and I want to touch and hug them, but I can’t. And so that’s very difficult. I think it’s hard. I think it’s hard for them to understand the chaos that a lot of healthcare workers are seeing in hospitals and how dangerous this disease and virus is.

It’s kind of like when you get a weather alert on your phone and there’s a storm coming or there’s a storm here, a thunderstorm. And what I usually do is I look out the window and I go, “Oh, it’s actually kind of bright and sunny outside.” That reality doesn’t match the data that I’m getting from my phone. But I wish more people can see what is going on in hospitals and what frontline healthcare workers are seeing in some of these sick patients, so they can understand this is a very serious disease. It’s something that we have not seen before, and we don’t have good data out there, and a lot of times we can’t tell who’s going to get better and who’s not.

**SAFIAN:** You’re on the faculty of the medical school there. What impact is this likely to have on a medical school situation?

**KU:** We have not had medical students rotating in the hospital. One is because we don’t have enough – no hospitals have enough PPE to protect all our learners, all our medical students. And they are missing it. They want to be in the thick of it. There’s a group of medical students here who started an organization to help provide PPE to local hospitals. They have the sense of optimism that they want to help, they want to support, and they want to help out their fellow Americans.

**SAFIAN:** Is telemedicine useful right now? Is it filling in some of the gaps of people not coming into hospitals, or what is the role of telemedicine likely to look like as we move out of this?

**KU:** Telemedicine is here to stay, and I think unfortunately it took a pandemic to convince both patients and doctors that it’s going to be really part of the backbone of our healthcare delivery system. So as we think about the future and we think about how we’re going to redesign the healthcare delivery system, telehealth is going to play a pivotal role in that. What is encouraging is a lot more patients and doctors are getting more comfortable on this platform. And I think that is going to continue post-pandemic.

I think it’s going to eliminate some of the traditional barriers that we’ve seen to accessing healthcare. But I also want to stress too, we still gotta think about our vulnerable populations and, going forward, how are we going to do a better job protecting them?

This virus has disproportionately impacted communities of color. It has impacted and really killed a lot of people with unstable housing, a lot of people in our prison system, those who work in factory jobs, like meat-packing facilities. We got to think about how we as a society, how we as a country, are going to protect the most vulnerable in our society? Because how are we going to protect those populations of our society who are disproportionately impacted? I think telehealth may play a role, but we've got to make sure those patients have broadband access and they can access telehealth. Not all patients can.

**SAFIAN:** It sounds pretty stressful. How do you manage your own stress in this environment?

**KU:** What's been helpful this past week is connecting with my emergency medicine colleagues, a lot of colleagues that I've trained with who are in different areas of the country, it was a very traumatic week for us because one of our colleagues in New York City died by suicide. She was an emergency room doctor, someone who was a friend of mine that I trained with.

It's a very stressful time. And what helped me, what helped us getting through, is reconnecting with those who knew her, reconnecting with those who are going through the same thing that we are going through in different areas of the country, and it is an extremely stressful time for many of us.

We had a Zoom memorial service for her yesterday that her department of emergency medicine did. And so 300 ER docs on that memorial service, expressing our grief and mourning. And that was very helpful for all of us to process.

And what gives me hope is that there are some really good people who are on the front lines and who are trying to do their best to take care of patients in hospitals across the country. It gives me hope.

**SAFIAN:** You said to me at one point that "working in the hospital is the most normal part of my day." Can you explain what you mean by that?

**KU:** It's surprising that for me going into a shift in the emergency room or going into my labs is actually the most normal part of my day. It's because we are doing what we did before the pandemic. We're trying to just take care of patients. So we work in teams, so I work a lot of overnight shifts and it's great to work with the same team that I've worked with before the pandemic, and I'm not at home working alone. And then sometimes when I'm at home just writing emails and reading on this pandemic, it's actually more stressful.

At least I feel in the hospital, I've been trained to take care of patients and it feels a lot better being able to practically do something. I've had so many great people reach out to

me and go, "What can we do to help?" I'm fortunate to have a job where I can go and actually make a difference during this time. It gives me a sense of purpose during this pandemic.

**SAFIAN:** Do your kids understand and appreciate the risk that you're putting yourself under, that you coming home puts them under? Like, do they understand it?

**KU:** I think they do. This past week, it was a very difficult week for me. I've been very just upset by what had happened and they've seen that in me. You know, usually I'm a pretty optimistic guy who doesn't like to cry and they've seen me crying this week. And so I think they see that it's an extremely stressful time.

**SAFIAN:** Certainly what's happened in the last week underscores the burdens that folks like you are under, that your own mental state can become more fractured. You mentioned that you have seasonal allergies, sometimes you get sniffles and that you start to worry like, "Oh, does that mean I have something?"

**KU:** Yeah. My allergies have been kicking in. Then I'm thinking, Hmm, my stuffy nose? Is that related to Covid or is that just my allergies? And a test I do every morning is make sure I'm able to smell the coffee that I make, and I'm relieved when I have that sense of smell. And I'm relieved when after taking my allergy medications, my nasal congestion has gotten better.

What really gives me hope, what really helps me to get through each day, is seeing my colleagues, the nurses, the other doctors, the paramedics, the environmental services who clean the rooms in the hospital. They're showing up and doing their job, and we're keeping the doors open so we could take care of people in our society. And that really gives me a lot of hope.

**SAFIAN:** Is there anything that we haven't talked about that folks listening in should know about?

**KU:** A point that I want to highlight is that we have this opportunity to fundamentally redesign our healthcare system and that we are never going to go back to the old normal, and what are we going to do moving forward? How are we going to do everything from redesign emergency rooms to make it safer for patients getting care that they're not exposed to Covid or other viruses? How do we need to just change the financial incentives for hospitals so that we pay for public health, that we pay for preparedness?

Because there's going to be most likely a second wave happening in the fall and the wintertime. And what are we going to do to prepare for that? I cannot stress enough to people that thousands of deaths that we're seeing now are preventable. If we look at

other healthcare systems across the world, like Korea and Taiwan and New Zealand, who did a much better job at being prepared and containing the virus, that they have had far fewer deaths than our country. We really need to ask ourselves, what are we going to do to promote health in our country?

How are we not going to repeat the same mistakes that we've made, and what are the changes that we're going to ask of our healthcare systems in order to prevent thousands of deaths? It upsets me every time I see a patient die, every time I hear of another colleague who has been infected with Covid, a colleague's mom who has died of Covid. When I think of these deaths, when I think of these people getting infected, many of these were preventable. This wasn't inevitable. We could have prevented a lot of the tragedy that we're currently seeing. And how do we move forward to not let this ever happen again?

**SAFIAN:** But right now you don't necessarily see that if there's a next wave that comes in the winter that we haven't put things in place? At least that you've seen, yet, that would make it different?

**KU:** I've seen a lot of creativity and hustle going on in my hospital and the hospitals across the country. It impresses me. But in order to deal with a pandemic of this size, we need to have a federal, national unified strategy. It can't be a piecemeal approach. We could have been better prepared. And just looking at data from other health systems in other countries, they were able to contain, they were able to socially distance. Their hospitals were better equipped with PPE to protect health care workers. But I have hope, because this virus has not wiped out our country, and that we are gonna learn from our mistakes and that we are going to change our system in order to better protect our country.

And I just think the way that why we have failed is a direct result of the financial incentives of our healthcare system. Healthcare was already broken. There are already fracture lines in the healthcare system. The Covid crisis just exposed them. What we've incentivized healthcare to operate on, on profitable procedures and operations and specialty outpatient visits – and I think it's crazy that hospitals are shutting down and healthcare workers are getting laid off and this public health crisis that does not make sense. That's why a for-profit system that exists with these financial incentives, that cannot exist anymore, it absolutely cannot. So there needs to be a redesign of how hospitals get paid.

That narrative isn't coming through, which is sad. I don't think we were seeing the images that we really need to see and those stories. And because of that, I think people, the public on the whole, I think they need that. They need that sort of emotional anchor to help them understand how serious this is, how this is just ravaging so many people.

**SAFIAN:** Last question, how is your stamina? This has been going on a long time with a lot of stress for going on two months.

**KU:** I feel that the long hours of residency training have prepared me for enduring some of the sleep deprivation and exhaustion, the physical exhaustion. The remedy for that is I try to sleep and I try to exercise. That physical exhaustion, I've learned in my career how to handle and deal with. I think many doctors and nurses have. What has been more difficult is the mental and emotional exhaustion. And that's something I and a lot of my colleagues are still trying to deal with. Normally we don't have that sort of mental and emotional stress. So it's a day-by-day situation. I've been trying to reach out to colleagues, check in on them. People have been checking in on me, which has been great. And I hope this is over soon. I just take it day by day.

**SAFIAN:** Well, Bon, our thoughts and our prayers are with you. Here in New York, every day at seven o'clock, people go to their windows and they clap for essential workers and healthcare workers like you. And I hope some of that applause and that appreciation is felt and has some impact. But we really appreciate all that you and your colleagues are doing. Thanks for your time.

**KU:** Great. Thank you.