

Connecting Tech and Health: The Worker Wellness Program

TOUFIK REFKI: Is there an overall score that gives us a metric that says this is one of the healthiest, most livable communities? Statistically speaking, you're going to have sick days, you're going to have work and non-work-related incidents. You're going to have chronic diseases creep up.

What's the overall well being of that community look like? Can we measure it? Can we track it?

NOON SALIH: This is Toufik Refki, the Director of the Worker Wellness Program and Co-director of the COVID-19 Task Force at Expo 2020 Dubai

TOUFIK REFKI: Till just before we opened on October 1st, 2021, we've had a total of about 200,000 workers panning the entire construction phase.

We had an opportunity to take a proactive approach.

NOON SALIH: For Expo 2020 Dubai's Worker Wellness team, this proactive approach went a step beyond periodic checkups. There was a very intentional plan to anticipate what health risks were highest, who was most likely to suffer from them, and what could be done to prevent it all.

TOUFIK REFKI: And when we start to flip the script and focus on prevention, you're going to start to see real-life in real time data that can be used to make split-second decisions that can actually prevent serious disease from arising.

NOON SALIH: To do this, Expo 2020 decided to pilot a health experiment, kind of, that would target prevention, treatment and research all in one go.

As with the start of any new project, they started digging. Many miles away from the Expo site, on the other side of the world, they found a rising fitness wearables company that was breaking into new spaces outside of athletics.

TOUFIK REFKI: We did an assessment of the market and we found that WHOOP stood out for us.

It was an agile tech startup out of Boston, Massachusetts, with a real go getter-attitude. For us, it was a good fit because WHOOP, being a young tech startup, was able to adapt the technology and the methodology to suit our needs at Expo 2020, and to be able to adapt to the needs of our construction workers.

NOON SALIH: And so together, Expo 2020 Dubai and WHOOP designed and rolled out a wellness program for the workers and set out to test the power of biometric health tech, in one of the busiest construction projects, where at the peak of construction, some 45,000 staff were on site.

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NOON SALIH: But how does mitigating health risks in real time even look like in a group of this size?

How can data be turned into action? And, more broadly, how can programs like this help make construction sites safer and protect workers in labor-intensive industries?

I'm Noon Salih, and this is Inside Expo, an official podcast of Expo 2020 Dubai, where history is being made.

[INTRO STING]

TOUFIK REFKI: When we first launched the pilot in October 2017, we targeted the initial, let's say, 1,000 workers. And that was kind of a proof of concept, right? And then we realized that it does work. We're getting great feedback from workers themselves. The companies, being the construction contractors, love it. It gives their workers — their employees — a sense of a wellbeing community that they can be a part of. And so we realized that it was worth scaling up.

NOON SALIH: The program itself is voluntary. Meaning workers would only participate and wear the health tracker on their wrists if they wanted to. But even at a relatively early stage, there was a decent amount of interest.

TOUFIK REFKI: It was very encouraging to see all of these workers really interested in participating and they would encourage each other, and people would see the WHOOP wearable device on someone else's wrist and say, "Hey, how can we get involved?"

NOON SALIH: At first, Toufik and his team approached about 20 of the contractors working on the Expo site, and right off the bat, 15 of them signed up to be part of this Wellness Program at Expo.

TOUFIK REFKI: We worked with them to set up briefing sessions for their workers. And I'm talking about briefing sessions by the hundreds.

NOON SALIH: Conducted in English and Hindi — the second most widely-spoken language among the workforce on-site.

TOUFIK REFKI: And we would basically engage them, tell them what the program was about: How does the wearable work? How do you wear it? How do you maintain it? How do you look after it? And then what kind of feedback would you be receiving from us on a weekly basis?

Eventually we reached about 5,540 voluntary participants, which amounts to nearly 15 percent of the peak workforce.

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WILL AHMED: It was powerful in the sense that one: it gave the individuals more information. But the second area is also credit to the Expo. The World Expo and its leadership looked for ways to action this data and make the data tell them how to approach a healthier construction site.

My name is Will Ahmed, and I'm the founder and CEO of WHOOP.

NOON SALIH: Will was always into sports and exercise. He was a student athlete at Harvard, captain of the men's varsity squash team.

WILL AHMED: I felt like I didn't know what I was doing to my body while I was training, so I got very interested in physiology and what you could measure about the human body. And I ended up doing a lot of physiology research while I was at Harvard.

NOON SALIH: And this was the starting point of, what shortly after, would become WHOOP.

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WILL AHMED: So WHOOP really focuses on measuring strain and recovery and sleep. I would say those are the three big metrics. Our big focus at WHOOP has been on collecting the most accurate data for understanding your body and your health, and as a consequence, being able to coach you to improve your health.

TOUFIK REFKI: If you think about an athlete...

NOON SALIH: That's Toufik again.

TOUFIK REFKI: The activities that they engage with is high exertion or strain, or high intensity work, followed by periods of rest and recovery. And our construction workers follow similar patterns.

We were particularly concerned for individuals working in higher intensity positions, like, for example, rigors, scaffolders, carpenters. We were particularly worried about recovery, and the key determinant of recovery is sleep.

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WILL AHMED: "Sleep" is a big focus on understanding what are all the things you can do to optimize sleep, optimize time in bed. "Strain" is the intensity of a workout or the stress of your overall day; it's really a measurement of all the activities that you do. "Recovery" is how prepared your body is for strain.

NOON SALIH: For a construction site, this translates into the physical and mental ability of workers to do their jobs safely.

TOUFIK REFKI: Is this worker okay to operate? Have they rested enough? Have they recovered? Can they take on additional strain the next day?

NOON SALIH: The other thing the wellness team were conscious of was that with a majority of the workforce being from South Asian countries, they already had a higher predisposition to cardiovascular disease as well as diabetes.

TOUFIK REFKI: Central obesity around the stomach region tends, again, to be a bit of an issue for South Asians. Fifty six percent of our workers were either overweight or obese, which is why we zeroed in on your overall health, but especially your sleep and your recovery. And that's something that the WHOOP system tracks very well.

On average, our workers were getting just under six hours of sleep.

NOON SALIH: And that number, Toufik told us, was not where they had hoped they would be.

WILL AHMED: We had data scientists on our team who looked at all these numbers, and I think it's the power of big data in that you can really come to conclusive and actionable decisions.

TOUFIK REFKI: So what we did was we introduced health screenings. If you were sleeping poorly for seven consecutive days, then the system would automatically flag you as a potential individual of concern.

NOON SALIH: Those individuals would be offered health screenings, and Toufik says about 30 percent of the time the results of those tests would show undiagnosed conditions.

TOUFIK REFKI: And we were able to sort of put them on a treatment plan, check in with them regularly, and then obviously, most importantly, inform their employer.

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WILL AHMED: It's a business' responsibility today to really care for the wellbeing of the people who support them. And if you're not supporting the people who support you, you're gonna have huge turnover as a business and you're also going to have unhappy people working for you. I think that health monitoring is one way to say, "Hey, we really care about our team; we really care about our employees; we really care about our workers."

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NOON SALIH: This Worker Wellness Program with WHOOP was in fact part of a more comprehensive mission by Expo 2020 to keep up with its pledge to protect the overall welfare of its workforce on the construction site, and of its staff during the six-month event.

EMMA SEYMOUR: On Expo 2020, the worker welfare piece really looks at protecting the dignity, rights, security, safety and wellbeing of all of the organizations' workers and all of the contractors and service providers. It has 10 key principles that every organization working with Expo must comply with, and that's available on our website and bound into every organization's contract.

NOON SALIH: This is Emma Seymour. She's the Vice President of Worker Welfare for Expo 2020 Dubai.

EMMA SEYMOUR: So there's a real specific range of areas that we very granually assess in all of the organizations that are working with us. And they range from ensuring their employees have a healthy and safe working environment, to ensuring that they have no costs associated with their recruitment, that they have

the right to retain their personal documents, the right to have access to a confidential grievance system.

NOON SALIH: And so naturally, her team worked very closely with Toufik's to help set the foundations for the Wellness Program.

EMMA SEYMOUR: If an individual fell sick, we wanted them to be proactive in terms of assessing any of the kind of occupational health and safety risks and hazards associated with the health of the workers, as we were running training sessions on diabetes awareness and heart conditions. And that really tied into the WHOOP program and how the organizations jumped to volunteer to be part of that program.

NOON SALIH: For Emma and the welfare team, the priority was to protect the workers interests. But there was also an opportunity for Expo 2020 to raise the bar for labor standards across the construction industry.

EMMA SEYMOUR: The standards are there to protect the human rights of migrant workers. They're aimed predominantly at individuals that have been recruited overseas.

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EMMA SEYMOUR: Expo 2020 is really trying to bring out a legacy framework and set new international benchmarks for the construction industry. So we've really taken all of these contractors and construction companies with us, to obviously ensure they not only buy into the vision of the Expo, but also buy into our requirement for them to really up their games, and understand the international focus and expectation that they all have and are required to meet to be part of the Expo 2020 program.

NOON SALIH: And then, years into the lifespan of Expo's construction phase...

TOUFIK REFKI: Yeah, the pandemic definitely threw a spanner in the works, I think for all of us, not just at Expo, but obviously globally.

EMMA SEYMOUR: It was a really intense period. We were literally, I think, getting the changes at 9 or 10 o'clock at night, and then rolling out all of these changes to all of the contractors that evening to be ready to come to work the next day.

TOUFIK REFKI: We had to pivot. We had to build PCR testing facilities in the quickest possible time.

EMMA SEYMOUR: We're talking about obviously increased capacity and the accommodation, increased isolation wards...

TOUFIK REFKI: We had to partner with the Dubai Health Authority to have a vaccination rollout for our staff and for our workforce.

EMMA SEYMOUR: Increased social distancing requirements, increased sanitization.

NOON SALIH: But even as the world seemingly stopped turning when the pandemic struck, people were still people. They still had lives and livelihoods, they still had to breathe and wake and sleep. And bodies to care for.

TOUFIK REFKI: We had to sort of continue to operate and offer the WHOOP wearable through our Worker Wellness Program, while simultaneously testing thousands of workers.

But one interesting thing that came out of the pandemic from a wearable perspective, is actually WHOOP had a lot of luck detecting patients, before they even exhibited any signs or symptoms of COVID.

WILL AHMED: We ultimately found that there was one statistic that really changed dramatically whenever someone got COVID, and that statistic was something called respiratory rate.

WILL AHMED: In about 80 percent of COVID-19 cases, there's an elevated respiratory rate.

So, if you get a lower respiratory tract infection, it makes sense that you're going to have trouble breathing. What was really powerful about this analysis though, is that it also seemed to occur for people who are asymptomatic.

TOUFIK REFKI: And so what would happen is your respiration rate would spike, even before symptoms appear. Potentially get a heads up, and you could isolate much sooner or seek medical attention.

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TOUFIK REFKI: COVID reminded us of the significance and the importance of prevention.

It's really about providing individual workers with actionable intelligence that they can take, and they can start to make lifestyle changes and choices that they wouldn't be able to do without that data.

NOON SALIH: The metrics from the WHOOP wristbands worn by the Expo construction workers were obviously yielding a ton of information. And it was important for both WHOOP and the Worker Wellness team that each person could actually make sense of their own data, mainly through individualized weekly reports.

WILL AHMED: We're measuring heart rate, heart rate variability, respiratory rate, skin temperature. So it's a much more granular understanding of your body.

That's why it's so important to display data in layers. It's not showing someone 10 numbers on a screen and saying, "Congrats, here's your health." It's trying to summarize those bits of information into what you need to know right now. What we try to do is help people understand, if you do these two or three things, you tend to be happier. Or if you do these two or three things, you tend to be less stressed. And that's where WHOOP becomes very actionable.

NOON SALIH: And then there's the big picture. What does the collective data from this pilot program reveal and how can it actually be used to implement change?

TOUFIK REFKI: We partnered with the University of Sharjah's Research Institute of Medical Health Sciences. And we asked them, "Could you please interrogate and analyze the data and come back to us with any useful insights?" We did this in an anonymized way.

One particular area that was interesting for us was they did something called a cluster analysis.

NOON SALIH: This was a way for the researchers to group the data of workers based on the level of intensity of their occupation. By doing so, they could more accurately determine the risk factors of a certain group, which in turn could pave the way for more tailored health prevention plans.

TOUFIK REFKI: So if you plug all of that data into a software, can it predict the risk of that person developing CVD? And the answer is that it can, which is fantastic.

We were able to predict instances of CVD with about 94 percent accuracy.

NOON SALIH: CVD being the acronym for cardiovascular disease. Another condition that researchers were able to pick up on was sleep apnea — a disorder in which a person's breath is interrupted during sleep. Especially in severe cases.

The devil is in the details, for sure. It's this kind of valuable information that when leveraged, has the potential to change cities, lifestyles, and industries.

WILL AHMED: It was very innovative as a project in the sense that, this was really the first time that health data was being used to improve a construction site.

I mean, humans have been building stuff on Earth for thousands of years. And yet there's never been a way to measure how that work is affecting their bodies, or how you can make a construction site safer and more effective. And this was the first project to really do that, ever.

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WILL AHMED: Picture a corporation that wants their employees to be happier. Picture a health insurance company that has a bunch of costs related to the health of the people they insure. Imagine the military, you know, that is training and working so hard to protect their country.

So we see a number of really interesting opportunities right now. And a lot of this started with our work with World Expo.

EMMA SEYMOUR: The themes of Expo in terms of it connecting minds, creating the future and the themes that we had.... The worker welfare piece is so tied to sustainability in creating future work environments. And, that was something that we all aimed to work so hard to do.

I've been in the UAE for nearly 15 years and I've seen such significant changes in the country. And it's important for us that we continue to enforce improvements and developments and ownership.

NOON SALIH: Expo 2020's worker welfare mandates and the worker wellness pilot with WHOOP were, in many ways, a prototype — an example of what could happen when labor standards, health and wellness, and technology interconnect.

WILL AHMED: I think that wearable technology over time will be adopted by nearly every human on the planet. It's a question of how soon, but it's sort of inevitable to me.

TOUFIK REFKI: I think biomarkers, like the statistics and the data that any wearable, including WHOOP, would give you, they have so many applications; we've only scratched the surface.

EMMA SEYMOUR: The standards really encourage everyone to take a very thorough and forensic look at their own employment practices or culture, to ensure that everyone kind of really looks afresh at how they operate as an organization, and what impact that has on their workforce.

TOUFIK REFKI: This is still early days. It's really exciting. These could become practical tools that the industry could use. I don't think we fully appreciate yet what this information can tell us about ourselves, about the health of our cities, about the wellbeing of our people.

I think there's some really interesting things coming on the horizon. I think the future looks brighter because I think we're going to have more information at our fingertips. That's something that makes us excited about the next mega construction project in the region that we could potentially apply these tools to.

WILL AHMED: The example set by the World Expo and by WHOOP together can serve as a playbook for other big construction projects, for other companies that want to empower their workers and improve worker welfare.

TOUFIK REFKI: What is the foundational work that we can lay to ensure that workers have access to health information, have access to health data, understand how they're performing and then can actually respond, in tandem with their employer.

I don't think we can sit around and wait for issues to arise. I think treatment is always going to be a very important tool in the toolbox when it comes to health. But I think we need a paradigm shift and I think that shift is coming, where we focus on prevention instead.

NOON SALIH: Inside Expo takes you behind the scenes at Expo 2020 Dubai, sharing our stories and others across the 170-year history of this global event. Learn more by visiting VirtualExpoDubai.com.

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