Understanding Incubation and Entrepreneurship
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Module - 09
Entrepreneurship Ecosystem in IITH
Section - 02
Lecture - 20
Success stories of CfHE

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Thank you so much professor to you know come you know from your busy schedule to talk to the students.

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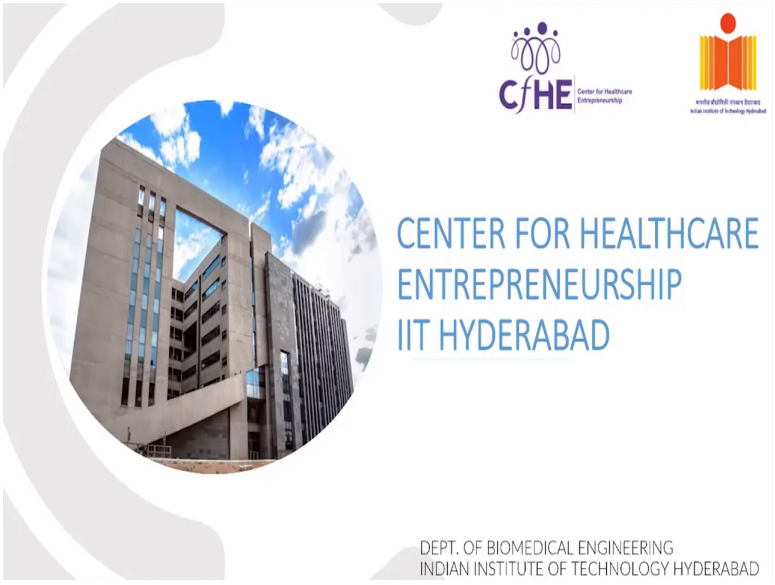

Thank you, Professor Chakravarthy. So, what I what I thought was like I will just give you a quick and brief introduction about a setup of Healthcare Entrepreneurship. So, setup for Healthcare Entrepreneurship was established in 2016 by 3 alumnus from IIT, Bombay.

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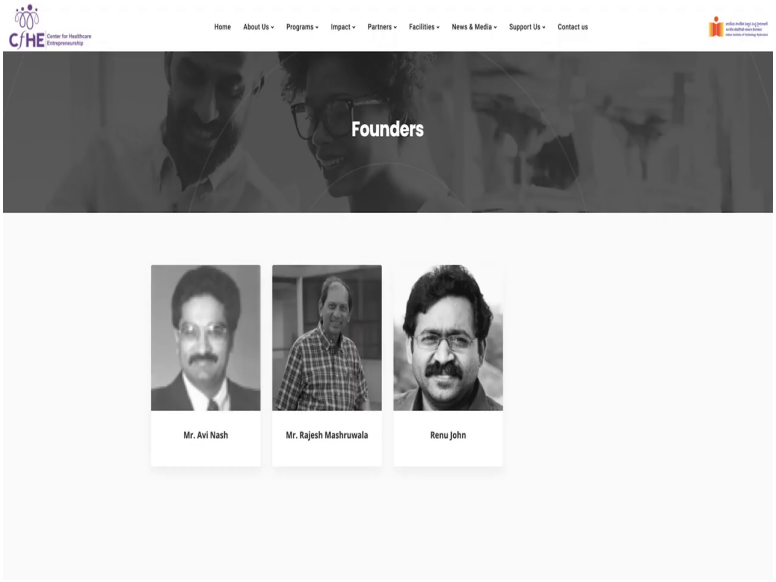

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So, from 1975 batch IIT Bombay alumnus Mashru and Avi, the main mission was to create a platform for bringing engineers, scientists, clinicians, designers, business administrators on a single platform towards health care innovations.

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So, and what we expected out of the center was like healthcare entrepreneurs which are the trained human resources. Medical innovations: in terms of technologies technology transfers IPs, start-ups and start-up companies and some of the medical devices and products that we that that are coming out. So, these were the main expected outcomes from the center.

So, we in the beginning itself, we looked at like you know when we started looking at health care you know finally, it is touching the lives of millions that we really want to do. But at the same time we realized that our strength is mainly the engineering aspect of the technology aspect of it.

So, we specifically made it a point that you know we would look at the needs from the clinics or hospitals, which could be addressed by the technology interventions. So, that was one of the main filter points that we put on looking at problems and needs from the clinics.

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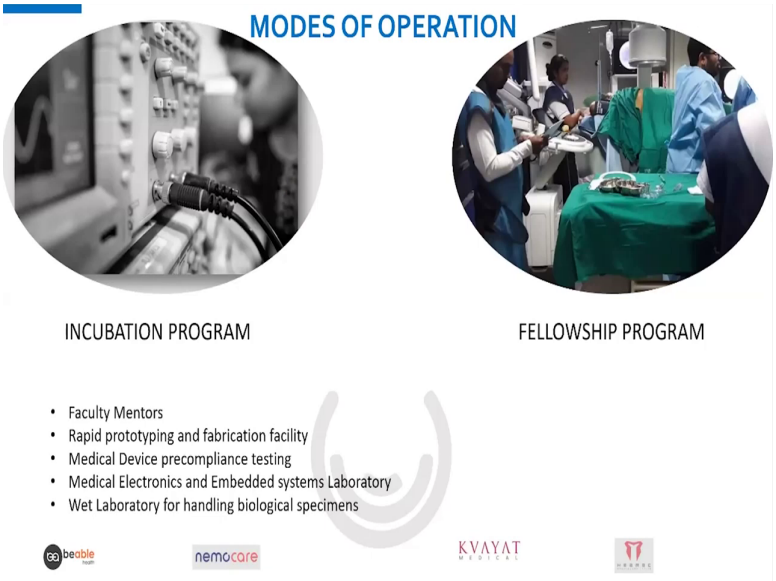

Ah From the CfHE we have two programs, one is a fellowship program which is a one year fellowship in healthcare entrepreneurship which is a supported program with a 60k per month fellowship.

And we also have an incubation program where you know mostly the students, the fellows who are graduating from the fellowship program with a successful prototype and idea and a business plan get incubated from the center with a seat grant of 25 lakhs. So, these are the two modes of operation I will talk a little bit more detail into this.

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So, apart from I am into facilitate these activities. So, we have a good pool of faculty mentors and we have a basic minimum rapid prototyping and lab facility. Then some of the medical device pre compliance testing facilities, medical electronics and embedded systems lab and WET labs. This is like a (Refer Time: 02:56) resource for the incubates and the fellows at CfHE, so that you know their product design and iteration moves very fast.

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We looked at how we can attract people to work with CfHE. So, as I mentioned before one is a fellowship in Healthcare Entrepreneurship. So, then we also have this incubation from the fellowship program where successful fellows who start teams and companies get incubated in the CfHE with a start-up grant.

And we also follow something called a Hub and Spoke approach where we those who are those who are interested in an entrepreneurship mode from engineering colleges would be like you know. So, we sort of do an online program where like we ignite their fire for entrepreneurship and they can join the program as soon as they graduate.

So, it is sort of like a 3-year engagement for the interested students from local engineering college. Towards the end of their program either it could be aligned with their BTech project

or of their start up idea which they want to do or. But the moment they graduate they could really join the immersion program.

So, in addition to that we also have just like Surya has mentioned the incubation from our own faculty, a pre incubation phase for our own faculty. And also one of the unique programs that we are looking at is also like any student entrepreneur who want to really work on something which is health care related.

So, a student and faculty can join or a student can a team of students mostly the finally, year PhD students or MDes or MTech students can walk into the center with an idea which would definitely be evaluated and mattered against (Refer Time: 04:39) entrepreneurship and then they can be incubated with the center. So, apart from that there has also been call from industry, various medical device industries to sort of in bring small groups into some of the areas based on their needs.

So, we so it is sort of like an outsourced the team from the industry who could work on a problem and if I many of the times the industry may not be really interested in spending a long time in a new problem. So, this mentoring phase happens at CfHE and successful they go back to the parent industry.

So, as I start up or a technology idea or as a team. And also there were also needs coming from industry like for example, who want to really develop over the counter products which are already existing, most of them would be like sort of re engineering or some of those indigenous technologies which can be can be made in the country itself.

So, these are the various ways in which at the moment CfHE is operating. So, this is sort of like a broad overview of how the fellowship program goes. So, in the first phase when we have the fellows into the center. So, we open up a national level call for applications, which is all the applications go through like a three round of interviews. Where we have multiple levels of expert panels and hackathons and then end of the end of the interviews we have a team of, we have a pool of fellows who are selected for the fellowship program.

So, the first process after the selection is to bring all of them from on a single on a level platform. This is because the fellows are coming from various background from engineering. So, we are open for anybody with an undergraduate degree with a fire for entrepreneurship.

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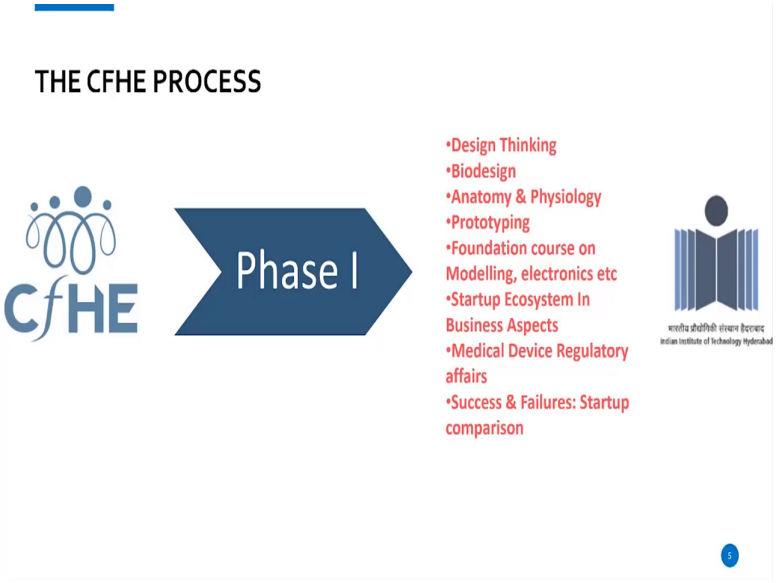

So, basically we have clinicians a lot of clinicians working with us, we have designers, engineers, from all streams and a management graduate as well.

So, the first part of the program we bring everybody to a level platform where all of them go through a course of chat pack course on Anatomy and Physiology. A bunch of prototyping courses for making them comfortable with CAD and CAM. Then we have a set of design thinking sessions and then a bio design thinking process mostly concentrating on innovation medical devices.

So, apart from that we also have a couple of mentoring sessions on business and entrepreneurship. Some of the medical device regulatory aspects come here and oh overall philosophy of the start-up and entrepreneurship comes in this first phase of the program.

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And then they move to what we call as a clinical immersion. So, in the clinical immersion all these fellows are shadowing, clinicians, physiotherapist, nurses and whatever that happens in the clinic with a focus on identifying or observing what are the what are the processes that are happening there.

Identifying the needs from the clinic and all of these once the once observations come to the problem statements and need statements, we go through a rigorous filtering and ranking

process. Where we look at who are the stakeholders involved, if the problem is sold what is the competition landscape, what is the impact and the market analysis etcetera.

So, and then we rank the needs, rank the unmet needs based on the scoring patterns and finally, end of almost at end of 6 months we form teams among the fellows and each of the fellows would pick up their top need based on their passion as well as the other analysis and they start working on their unmet need as a team.

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So, this is where actually the team formation for the company happens. And the second phase of it third phase of it essentially is an ideation brainstorming session, mentoring and business immersion and then they move to what we call as a prototyping sessions.

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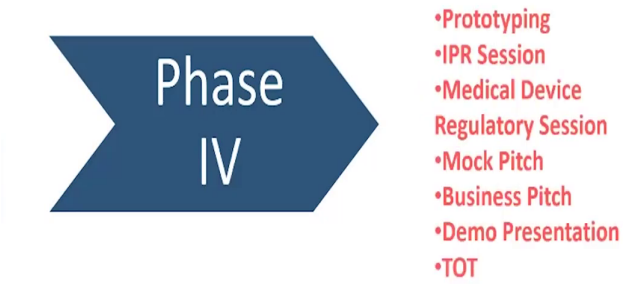

We also have a basket of courses during this time on IPs regulatory devices, how to do an entrepreneurship, how to do a business plan and similar things. And the end of this last phase culminates with a working prototype of their idea and a business pitch. So, all the teams pitched to a jury which is constituted by the center, externally from various backgrounds and those who are successfully successful in their pitch would come back to the center as incubates. So, this is the journey for the one year fellowship program.

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So, with this I would start sort of like you know have a quick review of one particular start-up BeAble Health. And so this was one of the companies in the in our first batch in 2016. So, BeAble actually is a neuro rehab device for the upper ram rehabilitation for people have suffered from paralysis of stroke and similar things.

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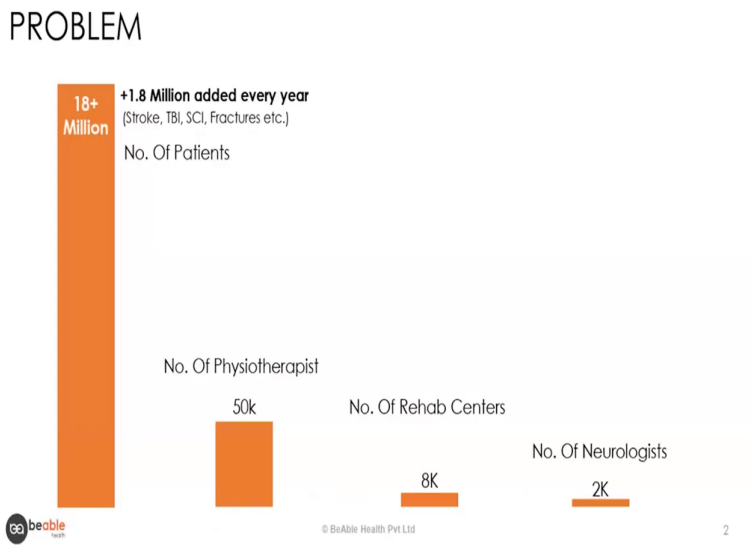

So, if you look at the evolution. So, basically what they looked at is the problem is one of the one of the main problems in the stroke. The burden of stroke patients in the country is huge and the gap they realize is that the number of physiotherapists is very low.

The time that the patients spend with physiotherapist is very low and the number of rehab centers or the number of neuro rehabs rehabilitation specialist are also extremely low.

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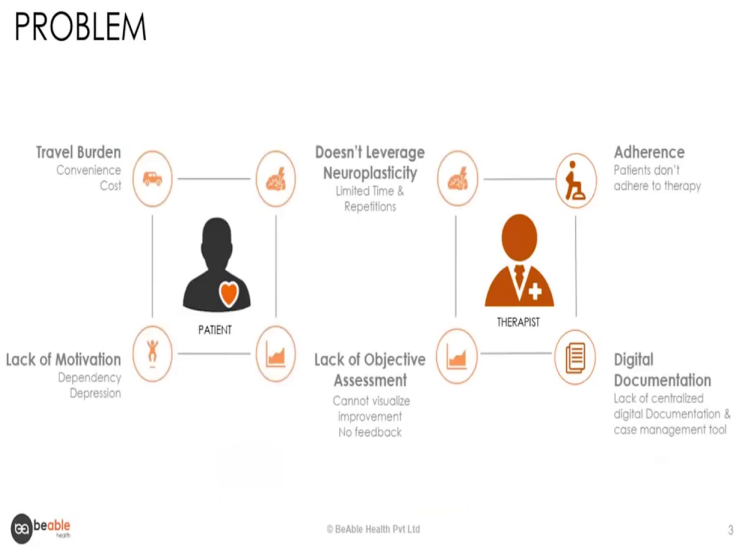

So, basically they looked at problems something like you know the travel burden where the disabled patient has to go travel to the physiotherapist for physiotherapy, which is which was one of the main concerns. Then most of these patients who have disability they will be strongly dependent on somebody and this adds to their depression and lack of motivation.

So, currently what is practised is like you know there is a lot of one to one interactions with the physiotherapist. And physiotherapist in fact, will be able to spend a very little amount of time with the patient. So, most of these techniques lack an assessment of the progress, there is no monitoring of adherence to therapy, there is no documentation or quantitative assessment of progress. And also most of the techniques does not leverage on how the brain evolve or the placidity of the brain or brain in addressing conditions like stroke.

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So, you can see one of these rehabs what we saw in the clinic. So, it is a it is a very painful process and laborious for both the patient as well as the clinician. So, all of you might have seen videos like this, where the patient has to spend patient patiently lot of time with the physiotherapist in doing even small steps.

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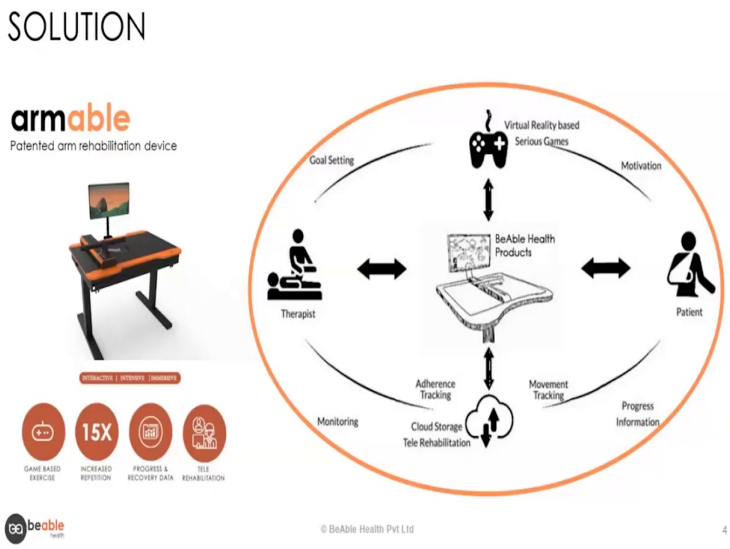

So, and be able came out of this observations actually. So, it is a, it is a, it is an interactive platform with a VR enabled platform with lot of games on it. So, that the patient can be really performing engaging exercises and most of these physiotherapists are really quantitative in nature.

So, the they could really get the distance mode by the patient or the level of exertion in a very quantitative way and everything is monitored on the cloud. So, the entire data goes to a cloud. So, that the physician or the physiotherapist can monitor the progress and also set the goals, like the difficulty levels of the games, virtual games can be set by the physiotherapist in a interactive way.

So, now just going back you know how much time it took for a for an idea like this to evolve. In fact, be able was was registered as a company after the fellowship in 2017 August and it

took almost 4 years to see what it is currently. So, this was sort of the initial sketches and frames from the they evolved.

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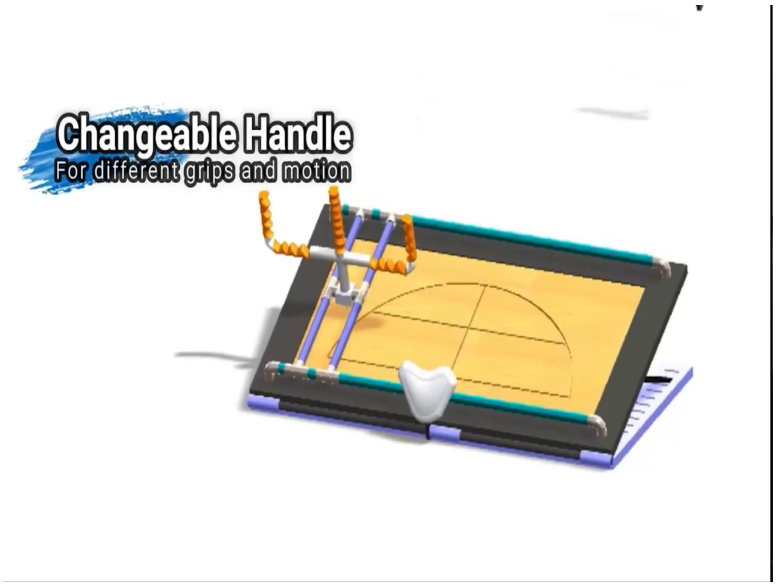

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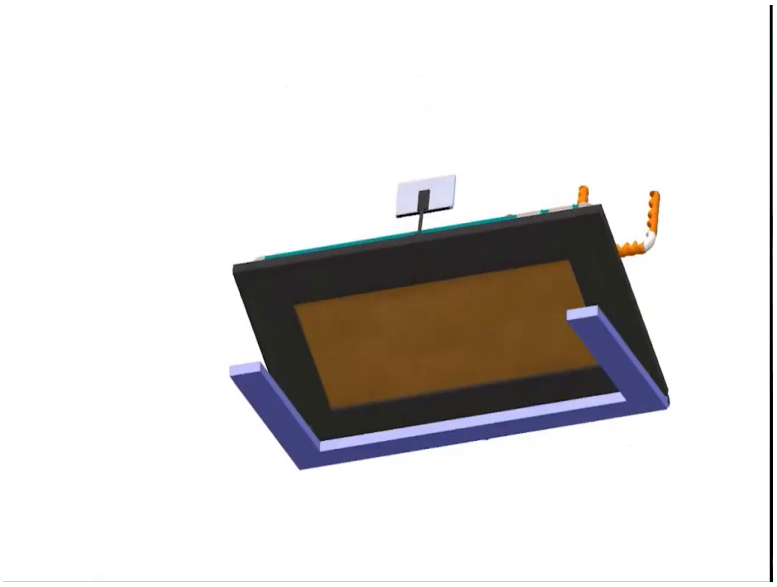

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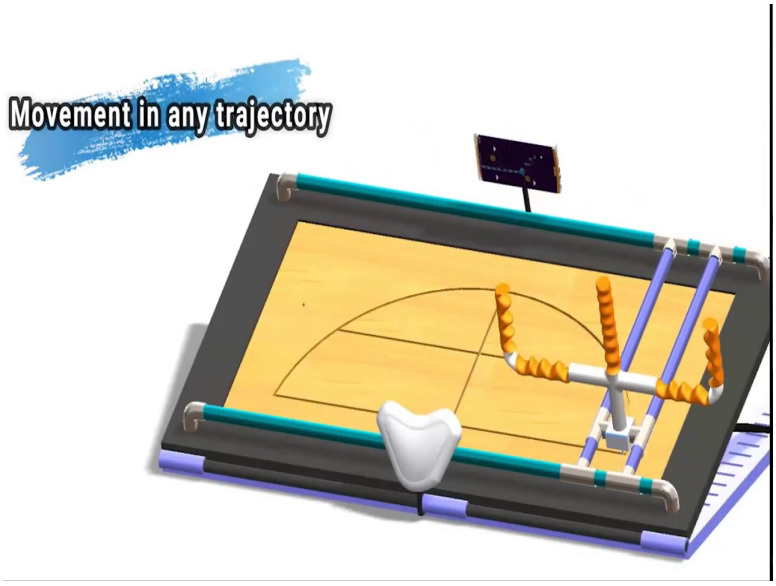

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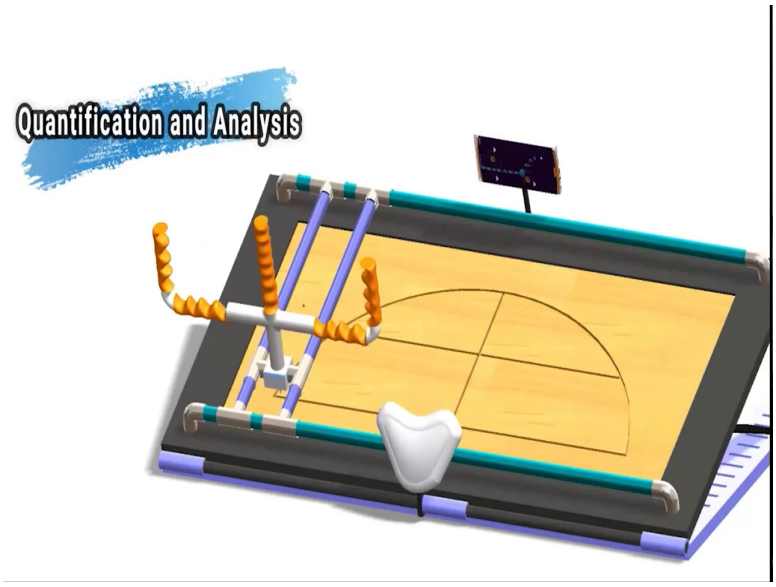

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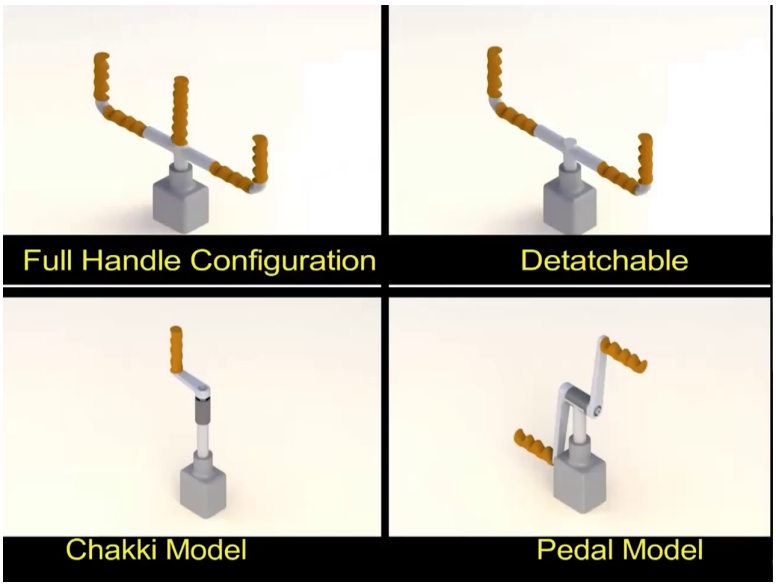

So, actually I took this example deliberately, because there is a lot of design concepts that is involved in the evolution of this process.

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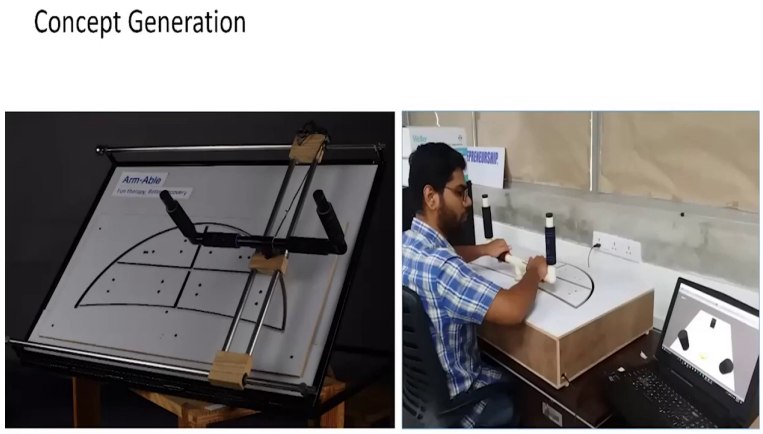

You know you can see the first design maybe even the founder of the company might have forgotten this design. So, this is this was one of the first designs prototyped in the lab during the fellowship program and from where it took a long very long way of 4 years to see what it is currently now.

So, this was the second prototype probably which he was using it for the last stage of the fellowship and from where we see the product almost like.

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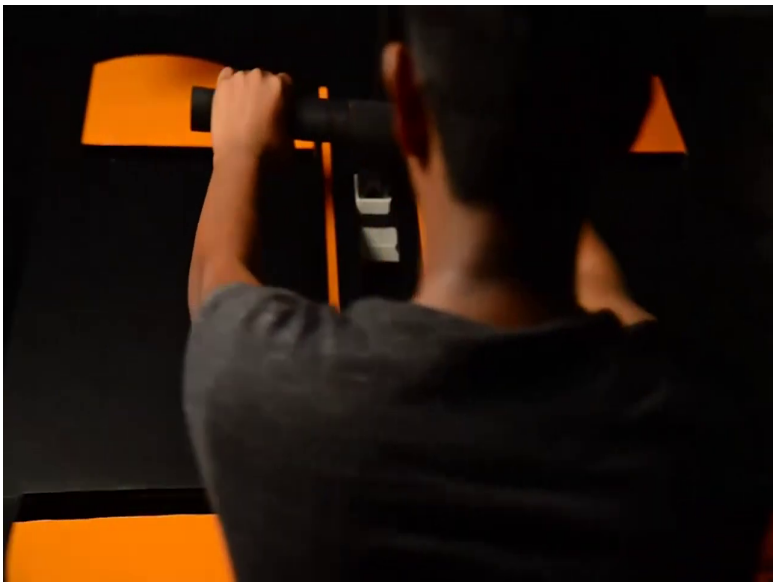

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I believe some of these are really intuitive to find out like how much of the design concepts have gone into it. So, in fact, one of the first few trials to look at the usability of the device.

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So, this was a this was a stroke patient with disability on the right side. So, as you can see things are not that simple when it comes to patient, who isalready disabled. And you can see the people who are aiding and supporting the disabled side and how her hand was tied on to the handle.

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So, at this was at the stage where one of your own alumnus or seniors Sri Hari who joined the team. Sri Hari also joined Habib as co-founder of the company in 2018 or 19 and then this sort of started working on the clinical trials. This was this was actually the first clinical trial of the device.

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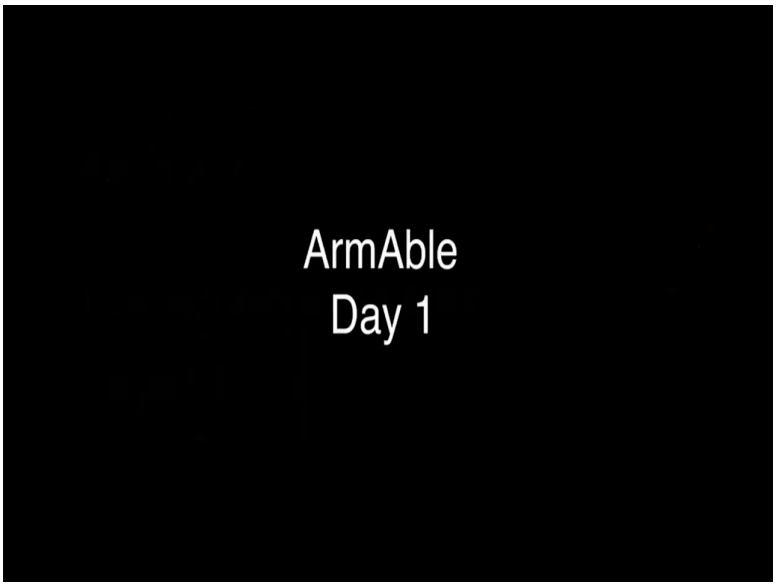

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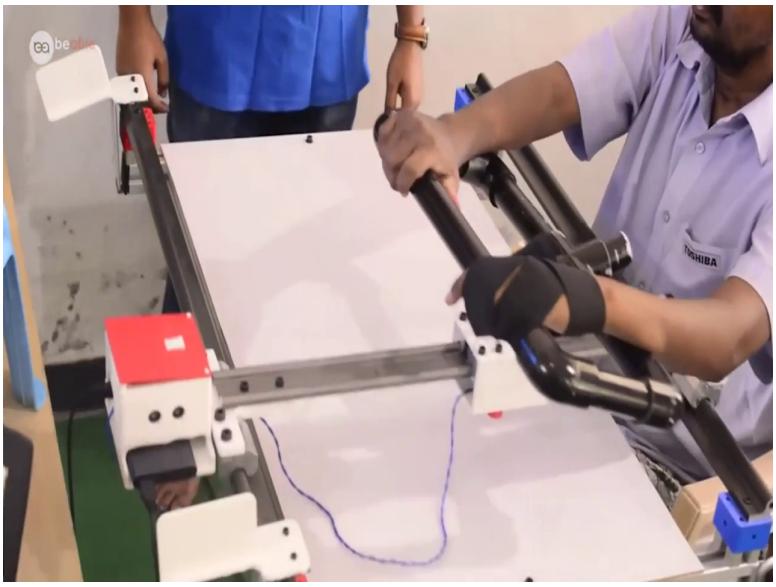

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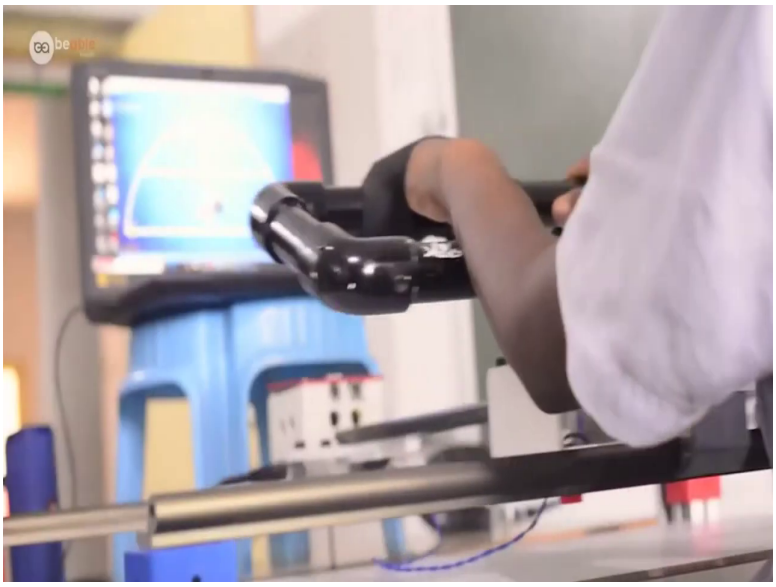

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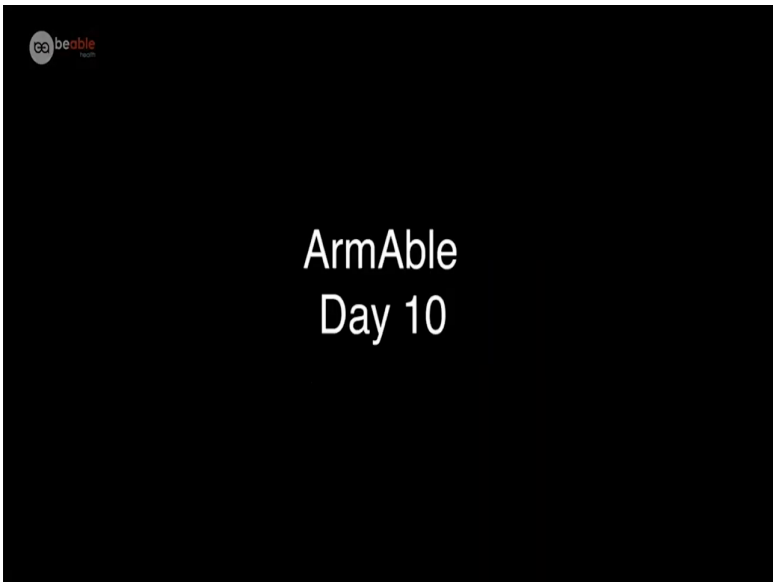

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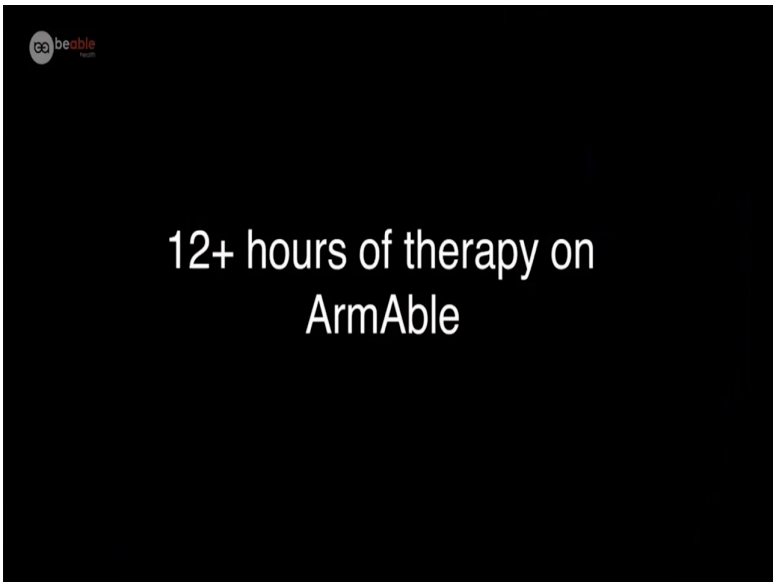

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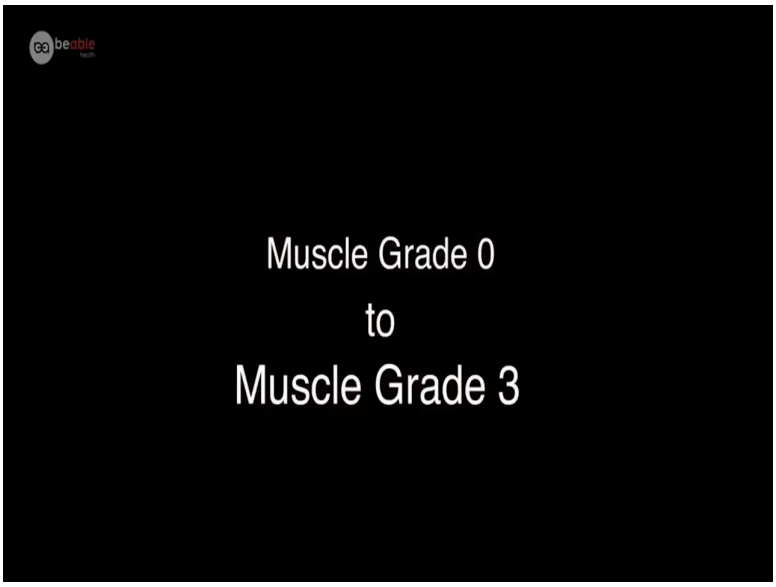

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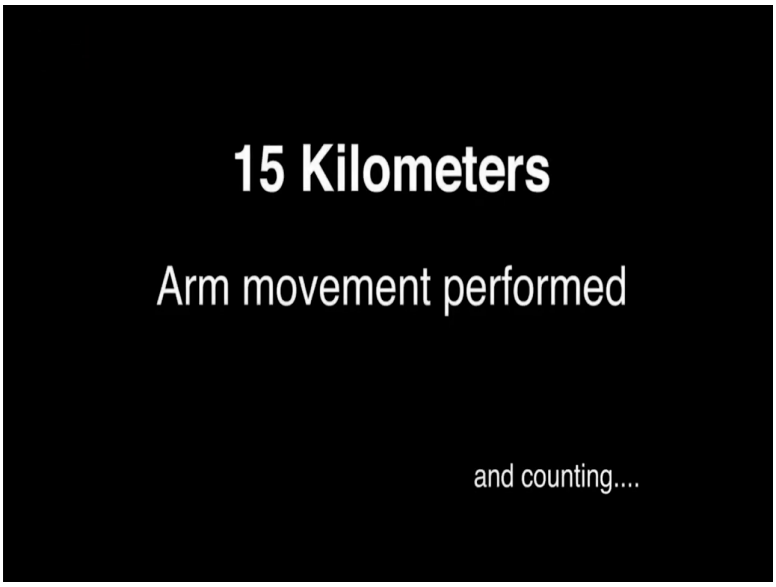

So, BeAble has evolved quite a lot in the last year especially during the lockdown time, they worked a lot on their VR games and in fact, you know games something like kneading a roti or catching a mosquito became part of the game, virtual games. Which became more and more interactive and culturally attractive for people also to look at.

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So, this was some of those recent activities which they used for development of the device.

So, I am just wrapping up this discussion here. So, basically I just all I wanted to say is that like you know 4 years for a medical device start-up to enter the market is something which is quite successful. Even if you look at the average incubation duration in the country is close to 8 to 10 years for a medical device start-up doing proper clinical trials and entering the market in this pace.

So, that is where I want to project the real motivation and dedicated dedication from the co-founders who really want wanted to take this to the clinics. So, at present I think as of now what I see is that they have sold 20 devices to clinics and to patients. And they are still working on another 30 more devices in the current order.

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So, basically this is the process we followed rigorous clinical immersions, interactions with industry and stakeholders. So, there were a lot of mentoring even from the Hyderabad ecosystem from people even from other disciplines like even the IT or the or the software industry who could really be successful in these type of journeys.

There were a lot of mentorings involved and there was also a quick a short package which enabled them to file their IPs and regulatory matters properly and drafting a good business plan at the end of the journey.

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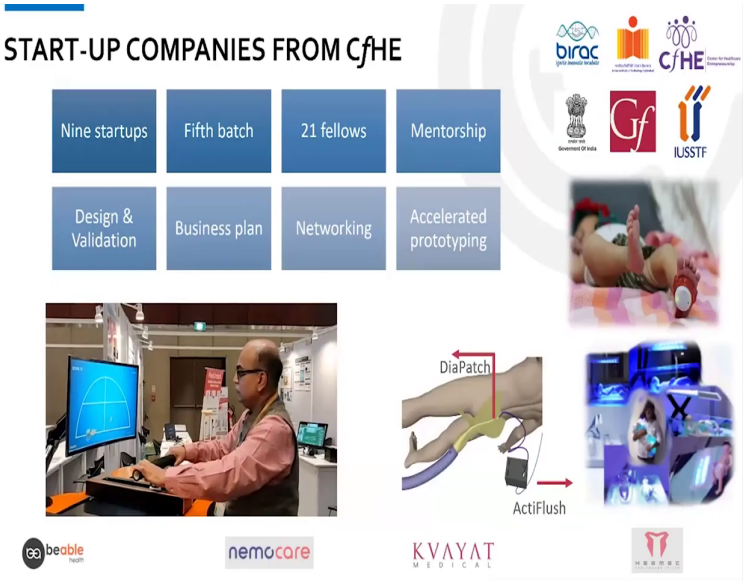

So, at present the CfHE has about 9 start-ups and 8 more start-ups who are registering at the end of this year this fellowship which is happening in a month. And we have currently 21 fellows and we have completed 21 fellows who have been trained from CfHE. The current batch has 14 fellows which is going to complete the next year and that is that is where we are and.

Thank you.