



## A. P. J. ABDUL KALAM

### CULTURE OF EXCELLENCE

<https://youtu.be/LEtP7HgGTu0>

President said, and there in May, we saw first time how 48-degree Celsius would be there and outside temperature, then midday, we conducted the task and that made India nuclear weapon state. And that also gave me another type of happiness. Then I said, okay, these are all some different, some space. I said, we prepare for the nation, I prepare for the nation, India 2020 mission. How by the year 2020 India can be economically developed nation? We give a blueprint, a roadmap in 1998 with a complete area specified and what should be done.

And this book, finally, a book also come, India 2020, this famous book and all these things. Another war, and including parliament discussed, and politically they accepted those days. So, all these things happened. But she was nothing impressed, my student. You know student, when you are taking class, you will know. She said, I didn't ask all these things. But you give me one thing which gave you bliss [inaudible], you know, equal [inaudible].

Now, finally I told her, see when I was in DRDL Hyderabad, I was working as a director of the establishment, and also me specialising in composite material, how to make a composite material. The Agni missile, the introduction I gave for Agni, carrying what is called a heat shield. Because when it re-enters with 15 times the sound speed, re-entry time before 2000 kilometres it goes, the temperature outside will be normally 4,500-degree Kelvin. It'll be burning. It's a flame. That mean inside the nose cone, inside the heat shield, the material what you carry, it may be any important material. And that should be in temperature, the room temperature what you are having. This is the requirement.

So, we developed a material what's called Carbon-Carbon material. You know, carbon composite, this Carbon-Carbon material, we developed it. Now the tip we have put in this follow, so that whenever temperature, very high temperature, flame comes in, this will protect it. The inside will be always 25, 28-degree Celsius. So, this very light material we used. So, this is called heat shield for Agni.

One day, an orthopaedical, Professor BN Prasad at that time was in Nizam Institute of Medical Science. He's an orthopaedic surgeon, orthopaedic surgeon. One day he was visiting me. Orthopaedic surgeon was visiting my lab. I showed him the precious thing, the heat shield. He lifted it, he found it is very light. Very light, very light. He was always saying very light.

And then, and heavy strength also. You see, very high temperature, strength also very low. So, strength will be kept always. So, all these things, he was highly impressed. He said, Kalam, I want to take you to

my orthopaedic ward in Nizam Institute of Medical Science. So, he put me in his car, and took me to the hospital. And took me to the orthopaedic ward where 30, 40 people who were having knee surgery. And there were 15 young boys and girls, they had the caliper fitted.

You know, for a Polio patient, they fit the Caliper. That Caliper each, both caliper put together weighs 4 kg. He told me, see that as soon as we went, they had removed that Caliper, they did not wear it. As soon as we saw, the doctor immediately started fitting it. So heavy, these are so uncomfortable. He told me, you have seen the scene and you have got a fantastic material. What is the use of missile, why not you use that material, missile material, use it for this job, my children?

So, we took it as a challenge. We took dimension. We take 22 moulds, we made in two weeks' time, three weeks' time. And then we got 15 calipers, and we call it FRO, Floor Reaction Orthosis, FRO. And I took it to hospital with my team, composite team. And we fitted to each child. And child, when they wore, so light, they started running. Because that four kilograms becomes 400-gram, 4 kilograms, wanted 400 grams. The children were so happy and they started running. When the mother saw this one, they thought, I saw the tears. I said, that was the bliss I got, I told.

So, my, all of you, my feeling is, that answer to my student, all of you're fortunate to be a noble profession to remove the pain with compassion and experience. Very important. See, one is treatment, another is compassion. Both, today I was in Thiruvallur at a school. One of girl asked me not one question, but 12 questions were there.

One questions she asked. Before her question I answered, I asked what class you are studying. The girl said, I am 10 plus 1. What subject you have taken? She said medical subject she has taken, which is biology, medical science, and physics, bioscience. All these things she has taken. And I hope you became a doctor, I said. Yes, my dream is to become a doctor so that I can remove the pain, she said. Fantastic statement, the girl made. I want to remove the pain.

But, you know, I said, my answer was, you know, normally we, all of us human beings, we have one biological heart, isn't it. Always you and me, all of us got one biological heart. But doctors should have two hearts, I say. Apart from biological heart, they must have one more heart. So, the question I asked, what is the second heart? You know, nobody responded. Finally, I said, it's a kind heart. Because doctor service, medical service needs compassion to the patient because you find not one patient, you have to treat hundreds of patients with pain. In that environment, you need kindness and compassion. So, I visualise all the doctors, they've got two hearts, good doctors.

Now, medical profession. One of the important inferences, when I see, Dr. Sanjeev's love for life, Dr. Ramurthy's love for life and all your life, I see one great quality we need, what's called culture of excellence. Culture of excellence. All of you can hear me?

**Audience:**

Audience: Yes, sir.

**Dr Kalam:**

Last row?

**Audience:**

Yes sir.

**Dr Kalam:**

Now friends, you belong to the medical community of multiple fields. You should stand for a culture of excellence. The excellence not by accident, it is a process where an individual continuously tries to better oneself. The performance standards are set by themselves. They work on their dreams with focus, and prepare to take calculated risk and do not get deterred by failures as they move towards their dreams.

Then they step up their dreams, as they tend to reach the original targets. They try to work to their potential. In the process, they increase their performance, thereby multiplying further their potential. This is an unending life cycle phenomenon, culture of excellence. They are not in competition with anyone else, but themselves. That is a culture of excellence. I'm sure each one of you will aspire to become a unique with culture of excellence. Because that is needed. When you see a patient and the diagnosis method has changed. And the treatment methods are changed and you are the one area you have to be completely updated, continuously. That means your knowledge should continuously needs addition, addition, addition.

Friends medicine, when I'm seeing all of you, medicine is undergoing a paradigm shift. The understanding of genome, the dynamics of proteins and the ability of technology to see various process of the cells have zeroed on to inflammation, inflammation as the root of all the diseases. You'll agree.

Now with these discoveries also came a scientific advance in understanding the underlying mechanism of disease, leading to innovative therapies that focus on addressing the cause of disease instead of just treating symptoms. It is essential, our medical scientists and clinicians working in the field of healthcare and research have to revisit traditional pharmacological approaches to medicine and healthcare and develop scientific treatment protocols to use them for many acute and chronic disease and disorders.

Now, when I'm telling to you, in 2013, that's the last year, a cancer research found a sea change in research and development, because I had visited hundreds of laboratories in USA. According to the science journal, its called the Advanced of Science, AAAS, promising results emerging from the clinical trials of cancer immunotherapy. Cancer immunotherapy, in which treatment target the body's immune system rather than tumours directly.

Tumour flow, you know, in cancer, you will treat something, it'll come somewhere else. So, there the question is, the 2013 research says the immune system targets the body's immune system rather than the tumour directly. The treatment pushed T-cells and other immune cells to combat cancer. So far, this process worked only for certain cancer and few patients. It is considered to be an important scientific breakthrough. Though the ultimate impact on the disease is not known, it was reported the results so far have been highlighting it's success.

It is possible immunotherapy in future may find solution for many other diseases. Only person I can ask is Dharma, whether it's possible. Professor I was there a few weeks back, at Edinburgh University, I saw something I thought sharing to the young doctors. Prof. Chandaran in one of the laboratories showed

his work on deploying technologies typically used for eye care professionals and used it to detect neural disorders.

Let me read it. Prof. Chandaran is from Edinburgh University, a laboratory I visited, cancer laboratory, showed his work on deploying technologies typically used by eye care professionals and used to help detecting neural disorders. Using optical scanner devices, his team is mapping the inside of eye, particularly retina. They're going further and targeting the optical nerve, a small opening into the retina which carries neurons and photo receptors from the eye to the brain.

Using the advanced technology, they're able to peep down the optical nerves in the specific region of the brain and make a longitudinal and cross section image of it. He showed me a number of images. These images clearly show any odd neural pattern or any potentially at-risk neural form. Thus, using this technology, Prof. Chandaran and his team is able to direct early disorders and they administer preventative care in the typical area.

Now, friends, I would like to say that six virtues of medical care, one, we have to process over the medical care. Let me now share with you six virtues, which a medical caregiver should possess. This I have read in a book titled 'Medicine and Compassion' authored by Rinpoche, a monk, Buddhist monk Rinpoche, co-authored by David R. Shlim, MD. It's a nice book. Name of the book, Compassion and Medical Care.

He's, according to the authors, first virtue is generosity. That is, the doctors should have a mind of generosity. Second virtue is Pure Ethics, because just now I had a specialist in Ethics area is here, Ethics area, and that I am very happy to know. May I know, sir, who is that sir? Who is specialist in medical ethics?

**Audience:**

P M Hedge.

**Dr Kalam:**

PM Hegde. Okay. So, first virtue is generosity, the second virtue is Pure Ethics. Third is tolerance because you'll be in the midst of pain, your doctor or nurses, they are always in midst of pain. That's why tolerance.

The fourth is Perseverance. A doctor never gives up. Never gives up. He will always say, I can save this situation or save, prevent the disease or cure the disease. Fifth is Cultivating Pure Concentration. When you see a patient, he should feel my doctor sees me. Sees me through, not just keep the thermoscope and get away. And the way you treat the patient, he feels in this, cultivating the pure concentration of the patient.

The last virtue is Intelligent. That means no field in the country, in any part of the world, it needs update. Because medical field and equipment, in diagnosis, in treatment, continuously, everyday its changing. Fortunately, internet is there. These virtues will empower the caregivers with a human heart. I'm sure the medical who are present here and elsewhere will have all these six virtues that will reinforce confidence of the citizen in the healthcare system.

So, finally, in conclusion, I would like to say what I will be remembered for, what I will be remembered for. First, friends, I want to leave you with a thought today. What is the one action which will make you great? Every one of you has a page in the history of the world. What is that page? How do you make that page, which is going to be referred by the prosperity? There's a need to give a vision to your ambition.

What I will be remembered for? What I will, each one of us have to ask the question, what I will be remembered for? And if you find an answer for this question, a few lines. That of out of box idea will drive you for the rest of your life. You'll be definitely thinking something different, on our out-of-box mission.

What are they? Can I visualise along with you? I'm not a doctor, but I want to visualise along with you. Each one of you will derive your own vision to remember. For example, you see this light. When you see this light, immediately, we remember a personality. Even though electricity was discovered Faraday, long, long ago, but application was given by a person, Thomas Alva Edison. When the light you see, Thomas Alva Edison. When the telephone bell rings, you remember Alexander Graham Bell.

So, what is the lady who have got two Noble Prizes? You will remember Miss Madame Curie, because one for discovery of radio, another she treated cancer patient using the radio. For both, she got two Noble Prize. So, they're all unique people.

So, what I will be remembered for, you would be definitely thinking something different and out-of-box mission today. What are you going to say today, what I will be remembered for? Can I visualise along with, each one of you will derive your own vision. I'm not putting boundary condition.

Will you be remembered for bringing smiles of a health and joy to all the patients? When the patient reaches you, you would be having haunted by patients, but smile, can you wear the smiles? Will you be remembered for helping creating a unique cost-effective vaccine against malaria? Malaria is not going out of our country, and thereby saving more than 1 million people, mostly children and who are in trouble.

Will you be remembered for creating a roadmap for reviving the 23,000-primary healthcare centres across the nation, which would enable them to deliver the much-needed primary health facilities to remote region? Madras doctors want to be in Madras, nobody want to go to the primary centres.

Will you be remembered as a champion of preventive, this is very important sir, will be remembered as a champion of a preventive healthcare in the areas of cardiology, diabetic and infectious diseases? Because you would be the great teacher. You are treating a patient. Patient doesn't come alone; he comes with his family. And when the patient gets cured, you become a teacher. When you teach, when you tell him, where he got the disease, how it can be prevented, he will give attention to you. He will care for you.

Will you be remembered as a great teacher in preventing care for diseased family sub-patients? Will you be remembered for contributing in a unique way in finding a cure for diseases such as cancer and HIV? Now, friends, my best wish to all of you for success in your mission of removing the pain of the needy patient. May God bless you all.

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