

## **Seminar – Medical education in India: understanding demand and supply**

**Speakers: Vinod Paul, Randeep Guleria, Alok Kumar, Sanjay Zodpey**

**Presenters: Amrita Agarwal, Kushboo Balani**

**Moderator: Sandhya Venkateswaran**

**Duration: 2 hours and 38 minutes**

### **Sandhya Venkateswaran:**

Good morning on behalf of the center for social economic progress, a very, very warm welcome to all of you here. A special welcome to our guest. We are really privileged to have such an esteemed group here to talk about a very important issue. I want to thank Dr Vinod Paul, member Niti Aayog, who has been at the forefront of a lot of policy reforms in the medical education space. We really honor that he has taken the time out to share his thoughts with us. Very thankful to Dr Randeep Guleria, former director of AIIMS Delhi. Now with Medanta and heading amongst other things medical education. So, he is today wearing two hats, public and private and we look forward to insights on both from him. Welcome Alok. We are also really happy to have Shri Alok Kumar who is in the space of making things happen, he is principal secretary, medical education in UP and is bringing about a lot of reforms in the medical education space. And of course, Prof Sanjay Zodpey, who is the president of the public health foundation of India and has spent years on large amount of research on this topic on health workforce and on medical education. Everybody in this room is well aware of the role of the health workforce when we talk of health systems and many of the challenges. I do want to say the challenges are not just for India. Challenges of the availability of health workforce, the distribution, equitable issues as well as skills in some cases and accountability. These are issues that actually spread across the world. So, it is not an India problem, it is actually a global problem. Many countries have undertaken reforms as has India, which we will hear about soon. And the reforms have led to progress. The reforms have actually filled some of the gaps. But there is still a way to go. And because human resources for health are so central to health systems and how health services are delivered and how patients who are accessing health services actually receive them, because it is so central this is an important issue for us to discuss and something that we have been focusing on at CSEP. Now, India has made a lot of progress. In 1990, if I am sighting correct data, our doctor population ratio was 0.5 per 1000. 2019, that means 20 years hence it moved to 0.9 per 1000 which is very close to the WHO norm of 1 per 1000. So, significant progress has been made. There are of course, caveats. Some research seems to suggest that because of challenges in the data in terms of duplication, in terms of data sets not being updated, perhaps the actual figure may be 0.7. But let us not get into that. Irrespective there has been progress. But at the same time if India were to compare itself with other countries whether we should or shouldn't I don't know. But it is inevitable to do that at some level. We can cover much more ground. Lot of other countries like Sri Lanka and Turkey

and Mexico etc., they have a stronger doctor population ratio. So, where are the doctors coming from. Obviously, all of those who are studying medical education. And when we look at what is happening in the medical education, there itself there is a fair amount of demand. So, while we recognize that there are gaps in the availability of doctors there are a lot of aspirants for medical education, but there are also gaps between the demand and supply there. If we were to just look at last year in 2022, data seems to suggest that 17 lakh people aspired and wrote the NEET exam. But of these only 9% actually secured a seat. So, that gives some sense of the gaps, the gap between those who actually want to become doctors and those who actually finally becoming doctors. It is not as if that the doctor shortage is because nobody is interested. There are many interested people but there are structural and other problems that are creating these constraints. But even here, even in the space of medical education a lot has been done and I am talking about India. Under the leadership of people like Dr Paul and Alok Kumar in UP, much has been done and the expansion in medical colleges, the expansion in seats has been considerable over the last few years. Which is what led to shrinking of the gap. And yet we know that the output from our medical colleges can be much more. We do need to perhaps increase seats, enable the large aspirant pool to be able to access medical education in India, some of whom are going abroad or perhaps going into other things. That is really the reason why we thought this was an important topic and we could not have asked for a better panel, better set of guests to actually comment on this because we have a combination of policy makers, we have a combination of those who research this and looking at both public and private. So, that is what we will spend the next two hours on. I am going to hand over to Dr Laveesh Bhandari who is the president of CSEP to give his opening remarks and then request Dr Vinod Paul to give his remarks as chair. Laveesh, over to you.

**Laveesh Bhandari:**

Thank you, Sandhya. It is nice to be here, just to see how rapidly our research on the health policy issues related to India and also of course, similar countries have taken off. We just started barely two years back. In fact, less than that. I am so glad that all of you could be here to share and contribute to and also to be a part of the conversation that we hope to generate. I will just start with... won't take too long. There are three or four things that I wanted to share with you. I used to do a lot of work on health. And what is really fascinating about India has been the amazing increase in the number of colleges and seats. It is really not happened anywhere else at this scale. And we must be doing something right. If the Indian graduates, medical graduates still are amongst the most in demand globally amongst all the developing countries. There must be something happening right? It doesn't happen, this kind of a scale up so rapidly, I have not seen it. It is doubled, right? I believe in the last 10 odd years. Post graduate seats I think have gone up by 2 ½ times. That doesn't really happen anywhere. So, I think some elements here, not just to be proud of, something that we need to build upon. That is the first part. But I would like to further add to it. My guess is there needs to be a further scale up as we go along with increase in incomes, population, but most importantly the rapid increase in the life style diseases, we will need to scale up this. And we need to of course, enhance quality as well, which is amongst the biggest challenge that we are going to face as we go along. That is one. The second, this is coming from some of the work that we are doing. It is the need to be able to identify the kind of cohort we are bringing into the system. The skilling mechanism is always in place, it is not just about entrance, it is about accessibility, it is about affordability and so on. But this is something from all the work that we are doing I am sure that we will be part of other

conversations as well, we need to identify some sort of a... it is not really about inclusiveness only. It is also about the right kind of profile of the candidates who want to get into this profession. The last one. This is again something that we all know a little bit about. That is the rapid change in technologies and conditions that are happening and they are only going to further increase as we go along. There is no system or there is a limited system of mandatory, mid-career enhancement of skills, of abilities of education. It is not something many of us talk about. It is not something that is done in most of the countries, but in some countries do have smattering of these. I think that it is going to be time that we need to have these conversations. Because technologies are going to change, conditions are going to change, rapidly as we are seeing in other domains, is going to happen in this space as well. Though this further increases the ambit of the kind of work that we might need to do as we go along, these are really important issues that I think conversations are really required upon. With that I thank you and I hope this is a great session. And all the best. Thanks.

### **Vinod Paul**

Thank you very much. Good morning. Distinguished colleagues, Alokji, Dr Guleria, Dr Zodpey, Laveesh and of course, Sandhya and very eminent participants of this seminar and discussion. I think this discussion is very timely, very important, also because it is anchored on new findings, interesting ways of looking at the data, as Laveesh has referred to it. Yes, indeed it has been a fascinating phase, the last 9 years. And some of us have watched it very closely and tried to do what best we can. So, I think at this point I would only say that we would like to listen. I will very happily be coming back towards the end to give my reflections and also try to find a way forward to work more in the direction of ensuring optimum number, quality and distribution of health workforce. Thank you.

### **Sandhya Venkateshwaran:**

Thank you so much Dr Paul. Thank you, Laveesh. The way this will move is, I will request Amrita Agarwal who is a visiting scholar at CSEP and Kushboo Balani who is a research associate to present some of the key findings of research we have been doing over the last few months. And then we will follow that with some questions to our panelists, hopefully difficult questions. And a Q&A from our guests here and then closing remarks by Dr Paul. Amrita.

### **Amrita Agarwal:**

Thank you, Sandhya. Thank you to all the panelists for helping us improve our thinking on this front. What we will cover today is the basic facts and the problem statement. Sandhya has covered by and large most proportion of that. We will talk about the driving factors for availability of allopathic doctors. This paper constraints itself to allopathic doctors while nurses, task shifting and other forms of doctors who are also important. We are just restricting ourselves to allopathic doctors for now. A big enough topic in itself. We will talk about the factors driving the production of doctors. We will talk about specialists. We will also start touching upon financing of medical colleges, we are doing part two of the paper which will unpack the financing of medical colleges in much more detail. However, we will give some small teaser of what we are finding in that paper right now itself. We will recap the policy initiatives of the last decade and many good things have happened in the last decade. We will also follow up with some policy insights, recommendations, which could be additional things we can take forward. I will skip this, Sandhya spoke about the doctor availability ratio. But there is also wide

variation across states. We will come back and speak about this more. (Inaudible audience question). This is the context and basic facts. But there is wide variation in doctor population ratio across states. Everybody is aware of that. If you just take the number of years at the current rate of production which each of the state is doing, it will take many, many years for some of the especially EAG states to achieve... even the hypothetical ratio of one is to 1000 ratio. Just want is the problem statement? There is a large demand for doctors. There is a large demand for medical seats. However, the production or the supply is going up, but is it going up fast enough? When you look at the number of doctor graduates per lakh of population, we are still far away below turkey and UK. We are 4.1 compared to 14.3 for turkey and 13.1 for UK. So, what is... or why is this happening. We are bridging the gap. So, if you look at last decade, we have increased our number of doctors by 1.35X. China has done it at 1.45X, faster. We are still faster than many other countries, but the problem statement is can we bridge this gap even faster than what we are doing today. That is really the problem statement. This is at a national level. When we look at it at the sub state level, there are many more factors why this gap is not being bridged equitably. We will unpack that subsequently. Especially on specialists, we believe that there is even a greater shortage, we will talk about that. So, we will begin by setting this as the problem statement. And then we will unpack what we see as findings. We looked at four factors of what could be driving availability of doctors. There are few other factors we have looked at it, but we could also explore furthermore. The strongest correlation we found was in terms of state per capita income. It is actually no-brainer. There is free migration within the country. Doctors are also optimizing for themselves and their households. So, there is a very strong correlation which we see between the per capita income of the state and the availability of doctors. We tend to think it will be only in terms of number of medical colleges or number of seats in that state, but there is free migration in that in the country and we see that in subsequent data much more clearly. Public health expenditure which is what is the state government spending on health. We surprisingly don't see as much correlation. And we were puzzled, you would think that since 50% of the medical colleges and medical seats would be funded by the government funding. And also, there is lot of bonds. That would not be the case. And also, government is a big employer. But what we have seen in the data is there is not so much correlation. And it could be because of many factors. It could be again we are free country and migration is allowed and there could be other things which are happening there. Migration we often hear that there is a big brain drain going on. Indian graduates are going to other countries. Actually, what we see in the data the net doctors which is doctors going out after graduating from India and number of doctors coming into India after studying from other countries, we are actually net positive. So, which means more graduates are coming from outside of the country into India than graduates from India going outside. Which was a surprising finding for us. And this is consistent year after year that actually we are not seeing a big brain drain in terms of graduates. That is at the numbers level. However, at the quality level we can debate. Are the best quality doctors going out, are the worst quality doctors coming in or vice versa? That is not yet deep dived into. But we were surprised that migration is actually a net positive story. Which again goes back to the point which Sandhya was making. There is a lot of demand. A lot of people do want to become doctors. So, they are going to other countries, becoming graduates and coming back. Lastly, in terms of presence of government medical colleges and number of doctors in the government service, we see some association. However, there could be other factors leading to the strong association. So, we still have to unpack that. But we have seen the presence of government medical colleges to be a benefit to employment of doctors

especially in the government hospitals and primary care in that state. I am not going to spend so much time on each chart explaining what our findings are and what are the correlations. I am sure you will find that more deeply in the paper itself. But those are the key findings which we want to share. I do want to share this chart which is on the net migration on the doctors. Which you can see is the red line on the left side is the outflow. And the pinkish bar on just next to it is the inflow. And you can see consistently the inflow is higher than the outflow.

**Alok Kumar:**

Only on the basis of those who have passed the FMG exam?

**Amrita Agarwal:**

Correct.

**Vinod Paul:**

Do you have data by post graduates? Because lot of this would be those who go to China and Ukraine and come back. But the real brain drain is MBBS here goes out and never comes back. So, are the post graduates coming back, is there a trend of university doctors returning to India? Like it is happening in some other sectors. That will be useful.

**Amrita Agarwal:**

We will try and investigate.

**Vinod Paul:**

Because we want them to come back. Why are they there? This is where the action is, this is where the luxury is and all the goodness is.

**Randeep Guleria:**

I think you should exclude those who have gone for training to China, say east Europe and come back. Then see how does the data look like.

**Amrita Agarwal:**

Why should we exclude them? We are still adding to the numbers.

**Randeep Guleria:**

Ones who went would definitely come back because the opportunities in that country don't exist for them. So, for them what we are looking at a drain which is more towards the western world rather than to countries like China or eastern Europe. So, that will skew your data. It will not give you an actual picture as to what actually is happening. Because the brain drain is more towards a lucrative side.

**Amrita Agarwal:**

So, actually what we see is the outflow what you see in this chart or below, is the outflow of the doctors which you see in the first column. It is to the US and Europe mostly, but it is coming down drastically. What you see in 2012 to 14 period 2015 to 18 period, in the last few years actually UK norms have changed and US norms have changed. That has come down drastically.

Whereas the students going to China, eastern Europe, Vietnam and coming back, that has consistently remained high and growing.

**Sandhya Venkateswaran:**

In fact, Dr Paul, the paper has a chart on US and UK as exactly which gives the numbers.

**Vinod Paul:**

Do you have such data on PG?

**Amrita Agarwal:**

PG we have to explore. This is MBBS. We have to explore on PG more. Fair point. We also see a correlation of government medical colleges with employment and availability of government doctors. So, we have looked at the government seats five years earlier and the production of doctors, how does that impact government seats per thousand five years later on the Y axis. We do see a correlation between the two and this could help us understand how to increase availability of doctors in the government system. This is a little complicated chart, please bear with me. We will talk about how different states really look like. So, the first left hand side map of India is the state wise production of doctors per million. It is not a surprise to anyone, southern states have much more production per million population than the northern states. When you see over time, this is a static view of it, but when you see over time, you especially see some states like UP, Rajasthan, really increasing these eight seats per million quite dramatically. So, I think there has been a positive momentum in even the northern states in some select states. But, by and large, this is how the picture looks. Now we see the production versus the net supply addition and how does that map look like. So, I will explain in this. Suppose the production is the number of seats in the state in 2014-15 is X is 100. That should lead to increase in supply of 100 five years later in that state. When you compare the number with actual net addition of supply in that state five years later which is in 2019 you will see that actually that number doesn't match up. So, the number of graduates in 2019 which is the production divided by the net addition of doctors in that state, that is the ratio which we are talking about. In Karnataka that ratio is 1.4. so many more graduates are being graduated in Karnataka. But the net addition of doctors in Karnataka is much lower. Therefore, the ratio is 1.4 so, it means is Karnataka producing lot of doctors, those doctors are going to other states. That is the hypothesis. When you look at on the other hand Tamil Nadu, Tamil Nadu has lot of seats per million, which has a lot of production of doctors. It is producing lot of doctors but the net addition of supply of doctors is much higher. Therefore, the ratio of 0.7 means that is sucking doctors from other states. So, its net migrating in doctors from other states. So, this begins to give us a map of the flow of doctors across the states. We are going to try and replicate this across multiple time periods. But this is the picture we are getting now. So, we will now talk about it. Then in this in conjunction with what is availability of doctors. So, you produce doctors, they migrate in or migrate out and therefore it leads to net availability. How that availability moves over time. You begin to see that net availability of doctors is again similar to more the production. In some states like Rajasthan that is beginning to change. So, we see four kinds of states. I hope everybody is clear on the three charts. We see four kinds of states coming out of this analysis. There are high availability states like Karnataka Andhra Pradesh etc. which are also exporting out to the rest of the country. So, they are like a manufacturing hub which is producing for the rest of the country. It is economics. Whoever has better factors

of production is able to provide for the rest of the country. Then there are other states like which have higher ability, which have good factors of production but are still importers. And that could be from incentives, that could be just still they are actually importing patients rather than exporting doctors. They are Delhi, Maharashtra, Tamil Nadu. So, when you see the 0.7 in the middle chart, you see 0.7 and 0.8, that means that these are net importing states of the supply which has been added. Then we see low availability states which are actually able to retain their doctors and are able to attract additional doctors like Rajasthan, Orissa, Haryana. So, in the middle chart you see them. As a ratio less than one. Very interesting. So, you would think that how are they able to do it. One, they are able to retain their doctors and more importantly they are able to attract other doctors from other states. So, which is very complementary. And when we unpack some of them, it is not a universal trend. Like, Rajasthan has a lot of government colleges. And a lot of increase in government colleges recently. So, we should understand this cohort better. And lastly, we have these states which have low availability of doctors, which have low production per million population as well. But are net exporting out to other states. So, for example UP and Bihar, they are increasing their production but is it adding to its supply in that state? Or is it migrating in some form to other states? So, this is one little complicated, but just to try and show that incentives and migration does matter into the overall availability. And what are the factors of production? Who really has strength in producing? How can we leverage that better and then what do we do in low availability states and low production states? So that we can create environments for retaining the talent as well as attracting better talent.

**Sanjay Zodpey:**

These are all India seats available. Like in state of Maharashtra,

**Amrita Agarwal:**

It is excluding all India. So, we will move forward. Kushboo.

**Kushboo Balani:**

Hello everyone. So, today I am going to be talking about the key drivers of production of seats for more at the UG and the PG level and I am going to briefly discuss in terms of the trends in both of medical colleges of seats, what has been the availability of teaching faculty in the backdrop of rapid expansion. And also, what has been the availability of support staff. So, we are looking at the trends over the last decade or so and what we see is that there is a cutoff of thoughts between 2016-17, 2017-18 where we see before that roughly both the public and the private sector were expanding at similar rates. But like in over the last five years we see that the public sector has in a way overtaken the private sector and has been expanding much more rapidly, both with respect to colleges as well as with respect to overall seat capacity. Now, part of it has been driven by increase in number of colleges, government has added a lot of colleges. But part of it also has been driven by just the relaxation of norms with respect to number of beds required, the teacher student ratio and all of it. That to a certain extent has contributed as well. So, this is what we see in these two charts. What we see is that, with respect to the seat expansion while there has been an overall availability, improvement in the availability of seats, but with respect to distribution again we see that the top five states over the last decade has roughly remained the same. So, it is largely southern western states and UP is one very good example in terms of an EAG state which has managed to retain its share and in fact increase its share and also have added a substantial amount of seats over the last decade or so. On the rest

of the EAG states on the other hand continue to occupy a much lower share both with respect to their population, with respect to their demand, especially states, EAG states which have not been mentioned here. Chhattisgarh, Jharkhand, Uttarakhand, have in fact much lower seat share both with respect to public and private and also, I have also not witnessed lot of expansion over the last decade or so. Again, we see that the whole seat expansion has largely continued to be concentrated in developed states. And more so for the private sector and the public sector on the other hand has been a little more evenly spread.

**Amrita Agarwal:**

The increase in seats by different states in the government seats is much more equitable. So, you see Rajasthan, Madhya Pradesh, many other states especially the northern states having a larger share of increase in the state seat expansion. But when you look at private sector, one, it has slowed down. In the last five years in the previous slide, we saw dramatic slowdown of private sector. We need to understand why. Two, in this increased seat share which has happened in the first five years but not so much in the last five years. It is very concentrated. It is really the five states which are able to attract most of the seat increase. Which is Tamil Nadu, Maharashtra, Andhra Pradesh, Uttar Pradesh, very interesting. Uttar Pradesh has been the only one northern state which has gotten a very high share of private sector as well and Karnataka. So, we really need to wonder. If you need to make both a government and a private sector fire even more to get more production of seats and then we will come to quality, we need to also harness the private sector. Why are we not able to harness this in other states? Like UP is able to do in the northern area.

**Khushboo Balani:**

Thanks Amrita. So, one is the whole issue of geographical expansion and that being really concentrated, the other key issue which we in India have been facing in terms of is the scale of colleges. and also, just the overall production still being much lower compared to say some of the other developing countries as well as other OECD counterparts. So, around 2021 India was producing 4.1 graduates per lakh of population. The next best Israel was doing around 6.9. but Ireland around that same time was producing roughly 25.4 graduates per lakh of population. So, again there we see that despite India having the largest number of colleges in the world and a lot of expansion, there is still a lot of room to grow and in terms of there being a lot of demand so that doesn't... like a lot more expansion can take place. The other key point which emerges in our analysis was just the size of colleges in India, which has not increased dramatically over the last decade. So, from 122 in 2011, we have moved to 151 in 2023. But it is much lower say compared to China which has 930 seats per college and eastern Europe which has 220 seats per college. So, again here this is partly a structural issue which means most higher education institutions in the country face this problem in terms of size being smaller and just being like more number of colleges in other sectors as well. But just in case of medical colleges we are going to explore a bit more deeper in terms of why this is the case. The other key aspect of the driver of production is really the human resource. The availability of teaching faculty and that is basically an important driver on the HR front for expansion of medical colleges. But what we see is across both teaching faculty and the non-teaching faculty staff there has been an acute shortage. This shortage is not just restricted to the newly formed AIIMS. Even say AIIMS Patna which was formed roughly a decade ago, its first batch became operational in 2012 still continues to have a 50% teaching faculty shortage. So, again, that is an issue. Currently this



shortage is being practically addressed by recruiting contractual staff and all of it. But still the permanent staff recruitment continues to be poor across both old and newly formed AIIMS. Now with respect to specialists, so far, we discussed the drivers with respect to the production of MBBS doctors. With respect to specialists again the drivers are roughly the similar in terms of medical colleges in terms of seats. In terms of seats again, the important part is where really the expansion is taking place like which specialties are seeing the expansion, that is the key aspect. Then the availability of teaching faculty, support staffs again the same drivers. But our PG analysis was limited largely due to the lack of availability of data. So, the data was not really available at disaggregated form with respect to public and private to create a longer time series. Maybe we had data for one or two years or like two three years in the recent past, but not so much to create a time series state wise across the last decade. So, one of the trends with respect to PG. With respect to PG one we observed that the seat expansion has in fact occurred much more rapidly compared to UG, which means about 270% increase over the last 10 to 11 years. Again, over a year this has been driven by initiatives by the government in terms of pushing for the DNB.

**Alok Kumar:**

PG is only the NMC recognized PGs or you include the DNBs also?

**Kushboo Balani:**

This includes DNB, CPS as well. Because like recognition just happened. So, yes. So, this is inclusive both of the MD, MS, DNB as well as the CPS seats as well. Clinical, non-clinical both are included in this chart. This our overall number and what we see is that over the last decade this has expanded rapidly. DNB has been pushed for by the government and there has been a notable increase in the contribution on the private sector. Private sector currently contributes roughly 67% to the total DNB seat pool. So, there has been a lot of improvement on that front. One of the demand sides that continue to be two or three key challenges. One is that only 50% of students who qualified the exam and only 49% of the ones qualified actually manage to secure a seat. So, again a big demand supply gap similar to the MBBS level. The other key problem is just that despite the rapid expansion and there being a high demand, we see that roughly 7 to 10% seats were vacant over the last three years. And while we do not have data to pinpoint where really these vacancies are taking place. But largely it has taken place in the non-clinical and the para-clinical low demand specialties. So, those seats continue to remain unfilled and that comes with its own set of challenges. What we see is that in context of India, there is a low PG to UG ratio. Which means the number of seats available at PG level are lower than at the UG level and India's ratio while has improved rapidly over the last five years from 0.47 to 0.67 but this ratio in fact is poorer once you account for the 10% or the 7% seat vacancy. This ratio in fact worsens. And when I compare India's ratio to some of the developing and developed countries, China is roughly at 1.01, US is at 1.85 and UK is at 5.98. so, why do we really need this high PG- UG ratio? One is that the top 10 causes of death in India currently out of the top 10 six at least require some degree of specialist attention, which means they cannot be attended to or treated by MBBS doctors alone. So, those six at least require some degree of specialist attention. So, therefore India, there is a need to produce more specialist. Even if simultaneously while we improve our primary care and everything else, there is a need to produce more specialists.

**Vinod Paul:**

Part of what you are seeing is UK, US data that they maintain their undergraduate seats at this level and then they get doctors from outside who are ready made and then they give them training and they become specialists. So, this is that virtue that you can see.

**Kushboo Balani:**

Yes. Lastly these have been our initial set of observations with respect to the expansion of colleges, what really have been the challenges, it ties in with our remark with respect to seats for colleges being lower in India compared to some of the other developing countries and developed countries. One is with respect to capex. There has been a relaxation in land requirements, but besides metropolitan areas where you can function in a class A city where 10 acres land is the bare minimum with respect to others, they still need to comply to the 20 acres of land requirement. Even if they can be like say located in within 10 km radius of each other as per the recent changes. But that continues to be the norm. What that really results in then these huge land parcels would not be available in the center of the city, they are more likely to be located on the outskirts. When they are located in the outskirts it results in two set of challenges. One is to attract then the human resources to run this and the second is with respect to the availability of patients to maintain the bed occupancy and all of those norms. So, therefore these norms with respect to bed occupancy and with respect to bed to patient and all of this results in both high capex as well as in high Opex. And it has been found that generally in India for a private medical college the average time for breakeven is roughly between 10 to 12 years. So, we see that there is a clear element of dis-economies of scale. On the demand side we see that this high cost has in turn resulted in a capitation fee and the NRI quota then becoming key instruments of cost recovery. Lastly, we see that there is a mismatch between there being on the one hand high demand, on the other hand the supply not being able to respond to this high demand because of these operational constraints. And therefore, the price **signal** not really been working.

**Vinod Paul:**

Let me clarify here itself. This is an old MSR. Have you seen the more recent MSR? It doesn't qualify 10 acres of land or 20 acres of land. That has been changed.

**Amrita Agarwal:**

Yes. Quite recently it has been changed.

**Vinod Paul:**

Let me come on this because it should not be in a way quote unquote misunderstood. Remember the medical, the heart of medical college is a multi-specialty hospital. First this should be understood. A medical college is not a medical college if it doesn't have a vibrant hospital. So, you need a hospital say of 300, to have accommodate main specialties or whatever, 400 depending on... the issue is you need space for a hospital. Which is a given. Then you need teaching system and laboratories and so on. Then residential accommodation. They are typically three prongs, three pillars that you require. And therefore, when you hear this, so many acres are required or this much is required, you have to think before you take it. You will make a hospital, right? Then you will make some rooms. Then you will increase it. Then you will set up accommodation. Students are coming, there will be their issues too. So, in this perspective, I am telling this because it will get skewed. We also hear that we go to \_\_ island and we teach

inside the mall. This is also heard of. What they are doing is, only theory is taught there. Class rooms are there, so keep teaching. After that, they go to America for four years and do their clinical studies there. Have you ever seen a hospital in a mall in any island? We don't even need rooms, we can teach under even a tent. Please understand. When you include hospitals, the cost gets bigger. Then it becomes a budget for 400 crores or 150 crores, whatever it is. Nobody looks at it like that. College is equated with lecture theatres and some labs, then you ridicule them. Secondly, I will tell you this here itself. It will also be a trigger for some reaction. Studies in medical colleges, the study of medicine, is a study by the bedside. It is a study of real life. Lectures and all are ok. They are even online now and you can learn sitting at home. We don't want even the lecture. In PG anyhow you don't need. It is bedside lessons. The class gets broken. We want 10 students. Now the batch size is 25 and even 40. Now when we take the norms and see how many faculties you need, we are ridiculed very badly. You can sit here and do the calculations, if there are 100 students or 900 students like China, when you split it into small batches and teach, how many tutors and teachers are needed. The same teacher will be teaching every year. He is running the OPD also. He is performing operations. He is getting beaten about that too. He is doing his duties. He is not a teacher of a Delhi university who teaches for 8 hours or 18 hours. But he is not like that. He doesn't have duties. Even the engineering teachers don't do any duty. They are partitioned saying you just teach and go. Here, they have to run the hospitals, teach in that hospital and that too in a small batch. Around the bed how many students can stand? Eight? That is our batch size. In this space the principle is you have to make a hospital, follow all the municipal norms and the regulator has nothing to do with it. The specialties must be specified and number of beds is determined. You can create a college with that and take it vertical. There is no requirement of minimum acres. If you are making a 100 storied building then you can build a medical college in two 'kenal'. So, this has been rectified. Thanks to the team that has been working on it. But I feel very sad when it is said that we are studying in a mall, why there are crores of budget for this. Everything is skewed. They are just theory studies and no lab even. Then for 4 years after paying so much they get educated in US. Nobody talks about it. So, hospital is the heart and the temple of learning in medicine. When you build that then the learning is done. That is why it is also said that for building the medical college it is better if the hospital has run for 1 ½ or 2 years minimum before the college is built. Everyone is running around for building colleges. I was in a university recently and they had announced that they will be building a college. We are collected here to talk frankly about these things. They said they will be starting the college from next year. I asked have you built the hospital? Oh... that. They haven't thought about it. They don't even know the norm that the hospital must have run for 2 years at least before building college. Even the private people what they are doing is they start the classes from anywhere. Any new or old building. In our system teaching clinical starts from the first year itself. From the second it is really serious. Where you will go for that? In that it requires medicines, surgeries and other things. If the hospital is not running then there is zero medical college. So, first you have to invest in a hospital and run it. Then there is place for a college. So, such norms have been nationalized. But the main thing is you have to keep in mind that the person who is teaching is running the hospital too along with teaching. Secondly it can be taught only in a hospital. Thank you.

**Amrita Agarwal:**

Dr Paul is making a very important problem and highlighting that. Which is, cost, quality and supply and the financing. How does all this tally. And they are somewhere trying to balance this out. And that is the major problem. So, we need quality, we need to look at the cost of production and how this is getting produced and the breakeven on the financing and the supply. This is a puzzle. Can we tweak things to make it even go faster? That is the area to explore. The government has taken a lot of positive reforms in the last decade and some doctor Paul just referred to it. On relaxation of norms, especially in the regulatory reform, relaxation of norms for teacher student ratio, the land requirement, the beds requirement, this is just what he mentioned right now and the infra requirements. All very positive moves and therefore this has been a step very much a step in the positive direction. We need to see what more can be done further on this front. There is an increase in max intake from 150 to 250. You know should it go back to 150, should we look at Vietnam for instance where the average seat size is 400 or 500. What are they doing? There could be other middle income countries which are doing interesting things like Thailand. So, we should probably explore, not only look to UK and US to guide us. But look at other emerging economies. What are they doing? So, quality is a constraint, then we have to look at cost functions. And scale is an important one there. And what more can we do there. There have been also very important moves in the shortage of specialists on DNB and Dr Paul and many others have personally moved this agenda very welcome in increasing the specialist availability in India. Financing, this is something which has really been there from a price cap preservation perspective and a viability gap funding perspective. So, it will be good to understand from some of the panelists here how this is really panned out. We didn't in the data see so much correlation of this with the outcomes and the output of doctors. But it would be good to hear from the panelists on what they have observed really on this front. And there has been... government has also set up many more medical colleges, upgrading of district hospitals to medical colleges. Now, there is some areas which we are thinking we should explore further based on the findings of this paper. Really one is staff shortage and this is not only in government sector but also in the private sector. When you actually see the number of doctors and specialists available in the country, the percentage of teachers is a very small fraction of them. So, is it an issue in terms of availability of people who could hypothetically teach, maybe not? It is perhaps an issue of incentives. What are the incentives for anyone to teach rather than to go and work fulltime and treat patients? Is it needed to be either or and yes there has been relaxation of norms, there has been a movement, positive movement on this front, what more can be done to look at incentives for teaching? Another one is on scale. So, Kushboo also spoke about it, we do see in Vietnam, we see in few other countries like China that other medical colleges seem to operate a very different level of scale. We are not saying there is only one way to teach medicine. There could be many, many ways to look at scale. It doesn't need to be at the very high end, it doesn't need to be very low end quality. What are the ways in which we can look at tapping the economies of scale and what can we do further on this front? For that we need to improve approvals for new departments, newer seats, while maintaining quality. This distribution of seats and availability of new doctors in various states, the chart which we saw, we think exploring this idea of increasing public colleges in low availability states but along with incentives. How do you retain them, how do you attract them from higher income states? This incentives for retention not only a stick but also carrot is important for us to explore. How do we leverage the high availability in high production states better? How can we incentivize them to produce even more and to produce for the rest of the country? It is again economies of scale of production there. This shortage of specialists, very

positive moves on DNB, how can we make it even more equivalent to MD, MS in spirit. Is that an option for us at all and how do we help in expansion of specialization, number of seats in specialties with high demand. If there are seats which are vacant, which have low demand, how do we expand the seats in areas of high demand? Private sector participation. We do need both government and private sector to fire for us. That is the twin engines which we need as a country to operate at a more higher speed. There the norms are in the right direction. But the economics are still not working out. Private sector works on economics. For them to be able to operate and produce and scale up...or maybe we should look at UP. What have they done right? How are they able to attract more private sector investments? What can other states do right? It has to be economics at the given quality which has to work for them. Lastly on data. We did feel that there was a lot of challenges on data. Availability of data in the right form, clean data, both are a big challenge. So, we think there should be lot of initiatives on putting this together in the right format, especially for postgraduate students. Thank you.

**Sandhya Venkateswaran:**

Thank you, Amrita. Thank you Kushboo. We identified some difficult challenges if I can call them that which are fundamental to our making even more progress on the medical education front. So, what we would like to do now is take some of those issues that we have identified and ask our panelists specific questions. So, Alokji, if I may start with you. UP has done some incredible work over the last few years in terms of increasing the number of colleges as we just discussed. How have you dealt with the challenges of the inputs that are required to make these colleges operational and effective, specifically in the form of teaching faculty? We just saw some data from AIIMS Rishikesh. This is when AIIMS is top of the line, right? But AIIMS Rishikesh which was started about ten years ago continues to have about a 35% vacancy rate. What is UP thinking, what have been the ways in which you have or are handling this and what are some of the ongoing challenges in terms of making these colleges that have been introduced successfully?

**Alok Kumar:**

Thank you, Sandhya, so much. At the outset let me compliment Amrita and Kushboo for presenting some very deep insights into the medical education scenario. How it pans out at least in so far as doctors are concerned. As you said still data is sketchy, not fully clean and therefore there will be need... and you know because of the specializations are so many... what is there in MBBS and MBBS today is apart from general duty medical officer they don't do anything. Unlike the MBBS that we used to know from the past, where they could do surgeries, they could do deliveries, they could do almost everything. And very few people needed to be the specialists. Today the MBBS is largely used as a general duty medical officer or in some non-PG Jrs where they need supervision. They can't do it independently. The critical thing is how many specialists we have got and what we want to do with them. So, with those qualifications let me try and answer some of the issues in so far as UP is concerned. I think if you look at the evolution of medical colleges in UP... the first college in UP was the King George's medical college 1910. Then we slept for about 40 years. Then between 1950 and 1970 we established six medical colleges which were concentrated in large urban centers of UP, Agra, Gorakhpur, Jhansi, Meerut, Prayagraj. These six medical colleges came up between 1950 and 1970. Then we again went off to sleep. And UP was very, very reluctant to allow private sector to operate in education and that is not only in the medical field but it was secular across engineering and

that is why you see a large influx of UP and Bihar students going and studying in Maharashtra, Tamil Nadu, Karnataka, which were more advanced states which permitted private colleges to operate. Then I think somewhere along the line the state was unwilling to invest and therefore the private sectors and eventually people realized that if UP students are paying money, capitation money, they might as well pay to UP parties rather than to Maharashtra or Tamil Nadu parties or Karnataka parties. So, then they allowed a whole host of private medical colleges and then you see between 1990 and 2010 there is a certain spurt in the private sector investment and these were basically there was demand but the government never kept up with the supply. So, there was somebody who needed to provide and therefore these private colleges came up. How good, how good quality, that's a separate question. Then after 2010 the government started waking up and the reason why the government started waking up was because there was a lot of hue and cry. Because these people charge capitation, there was no control, there was no system of admission, nepotism, recommendations in terms of admission and that is why... Because there were lots of aspirant students. The students and the parents really forced the political system to respond. They said that – see the private colleges, there is little you can do. At that time there was no need, therefore you please invest. And 2010 we started investing. 2010 to 2017 from seven we moved to 12 medical colleges, we had two government of India medical colleges. One in JNU and one in Banaras, BHU, which were traditional old medical colleges run by government of India through the university system. And then two AIIMS were also established. One at Raebareli and one at Gorakhpur. So, from seven we went to 16 in terms of government colleges up till 2017. And then this scheme came along where you allowed district hospitals to be upgraded as medical colleges. And then from 16 we went to 35 in a matter of five years, 2017 to 2022. In the next two years we will go from 35 to 49. So, we had seen a doubling of the number of medical colleges, government owned medical colleges and a tripling in the last five years and tripling in the next two or three years. Because the construction is going on. We should be operationalizing them. This is the government. The private was 15 at 2017 doubled to 30. And now we are trying to see... our policy is at least one government college per district. We don't care whether it is private or public. But the idea is that tertiary care facility should be available in every district. And the size of UP district is not a small thing. Typically, a 30 lakh population. So, that is and larger districts will have 50 lakh which is almost the size of countries if you look at by European and other standards. So, I think by any metrics I think the desirable goal should be at least one medical college per district. So, we have now 75 districts. 59 of them are now covered with a medical college. There are some districts which will have multiple medical colleges but there is at least one medical college in 59 of those. The remaining 16 we are now looking at private sector partnerships. And UP is the first state to have a separate policy on this. I am happy to announce four have been allotted and as sir said the heart of it is hospitals. So, anybody who ran a 300 bedded hospital or a 400 bedded hospital or 200 bedded hospital we are trying to get those parties to invest in creating a medical college and the state government has created enabling policies in terms of assisting these parties to establish and giving some kind of back- ended subsidies in some situations and **YBT** gap funding through open bidding in some other situations. So, four out of those 16 districts have settled. Two will be applying for permission this year. Two will be applying in the next year. For the six other districts the bidding is going on as I speak. 16<sup>th</sup> august is the last date for the bids. The remaining six we have applied for in principle approval to government of India. But my sense is that by 2027 we should have all the 75 districts covered and at the time we end up in 27 we should have 98 medical colleges. We were about 30 in 2017. So, within 10

years from 30 to 90. We are saying that doubling in the last five years tripling in the next five years. So, that is where... it is almost an article of faith with the current government that we need to do it. And we are trying to do our best. I think does that answer your question adequately?

**Sandhya Venkateswaran:**

This is very helpful indeed. It is amazing progress. It is very useful. If you could just talk a little bit about how UP is addressing the faculty shortages. And especially in view of the expansion that you just talked about.

**Alok Kumar:**

The expansion only doesn't include these new colleges. So, that is one part of the issue. The expansion also is in terms of expanding the seat capacity in the existing medical colleges. And two things are happening both. For the private sector once the capitation system was taken out of the thing. Now their only hope of survival... and also please understand that the private sector dynamics operate not from the patient revenues. They operate from the student revenues. If you look at the economics of any medical college the contestation is really on the fee of the students. They are not the patient fees or patient revenue subsidizing student education. It is the student education catering to the patient requirements. And that also has to do with the paying capacity, the amount of money we spent overall on the health system. So, the countries you are comparing us with, they spend eight to nine percent of the GDP. We spend 3% and 3 ½ % of our GDP. So, where is the comparison. If you spend on your patients eventually it will reach somehow the medical education sector also. But if you are unwilling to spend on your patients and you leave the patients from the out of pocket which is the dominant mode of financing... Amrita knows more about it than anybody else... then to expect that quality medical education is available. It will not happen by default. It will have to be by design. And unfortunately for the last... from 83 when we said health for all till 2023 now 40 years I have seen, the spending on health has not increased with the way that our rhetoric is there. We are there on the rhetoric side but on the ground if you see, the increase in spending, that has not happened. So, essentially the dynamics is on the basis of the student fee running the medical colleges. Till this time as you had not merit in terms of admission criteria. So, people who could afford they were able to buy the seats. And they were then able to buy the degrees also. Many of them have also turned into universities. So, they are allowing, they are also awarding the degrees. So, they don't even have to appear in some senses appear. So, at the entrance you had no check. At the exit you had no check. So, you had a system where people who wanted to, who had the ability to pay were able to get the degrees. Now after NEET there was a huge change because now the private sector managements were forced to admit students on a merit basis. There was a cut off which you said below a certain cutoff you will not allow admission. And also, the fees is now... what was happening below the table now has to happen over the table because you can't charge students beyond a certain... you are now forced to take admission through seniority in the common entrance examination. Now with the latest NMC reforms you also have a common exit examination. So, some of these business models will now be questioned. So, that is the dynamic. The government is offering mainly free seats. The cost of a doctor in MBBS education is 80000 rupees per year. Apart from the hostel fees which would be something. But it is very low. So, it is practically free education. So, the government... because of the government focus and investment on medical colleges, you see an increase in the optics and also, I will tell you,

for the PG seats, you have a situation where the government of India is incentivizing. So, any PG seat that I add in my existing medical colleges they give me 1.5 crore per seat for increasing and for creating more infrastructure. For UG it is 1.2 crore per seat. So, there is an incentive. It is running sir. I have taken almost 600 crores from government of India on account of increase in UG and PG seats. The other thing was simply lack of focus. In some senses, in last two years I have been able to double the number of PG seats with the same faculty strength in my existing medical colleges. Simply because nobody was focusing. I was not... the principals were not focused, the department was not focused, it was with the same revenue you could do more.

**Sandhya Venkateswaran:**

Alok what you are saying is two things. If I hear correctly. One is how to get more out of the existing resources, that was your later point and the first is that there is an underinvestment and greater investments are required in order to address the structural barriers of incentives to teachers. And if that happens then we are able to increase the number of teaching faculty. That is my takeaway from what you said. Lovely. Thank you. Dr Guleria, we did talk in the presentation about the output from colleges being low in terms of the need to increase the seat capacity, amrita gave the example of Vietnam. We talked about the need to increase the output from colleges in terms of seats. What do you see as the key constraint today both for public and private colleges and how might these be addressed? How might we increase the scale basically of every college? And related to that I am tempted to ask the question that specifically in the context of PG seats, given that there is a significant demand of specialists in the country, at the same time as we saw some PG seats are going vacant. Non-clinical ones we think. How does one actually address that? How do we increase the seats that have a greater demand?

**Randeep Guleria:**

First of all, a great working paper. Congratulations. But I think the issue that you have raised is how do we increase our capacity without increasing the infrastructure. Which is very difficult to happen. So, if you really want to increase the number of seats in a given institution you will have to invest a little bit more on infrastructure. A lot of colleges now as the seats go up are actually finding a lot of problems in terms of accommodating if I put it that way students in terms of the clinical material, in terms of classroom size and if you want to increase your scale you will have to develop the infrastructure also in a similar manner. Also, I think here you will... this is something that we learned from covid also... you will have to look at innovations in teaching. See, medical education is also changing dramatically. What we had let us say 20 or 30 years ago in terms of a classic blackboard teaching or power point presentation, has now become more of an interactive session. Flipped classrooms where you have more student interactions rather than having a blackboard teaching. Students really don't come for classes like that. Because they feel this is something they can get on the net. It is full of lectures from better faculty that they can hear on YouTube. So, how do we get that interest back and how do you look at other issues which are communication skills, in terms of ethics and other things. So, in my mind when we start looking at increasing the numbers, it is the infrastructure and how do you develop a curriculum which is valid for the doctors of the future. Because this is something that we need to look at and we need to invest both in terms of technology and infrastructure. It is possible in the similar environment if you look at how we can do it using new technology. We had online classes during covid. If you combine that with bedside teaching and that is the biggest constraint that I think. You see, teaching doctors to become good



clinicians needs that they have to interact with the patient. They have to be able to be present there. And medicine has changed so much that when we would spend a lot of time in examining a patient, picking up signs, our training has now moved us to an area where we spend more time looking at the investigations. How do we really balance that out? We would spend half hour examining a patient looking at subtle neurological signs. Now everyone just wants to look at the MRI. So, we need to really have good quality doctors in trying to balance that out. And that is where the challenge lies when you increase the numbers. Because then you have a huge number of people coming in but you don't have the infrastructure to really provide that type of clinical teaching that you should as far as the students are concerned. So, I do agree that you need to have a larger number of students coming in but we need to balance it out with a good quality of training. And it can be done if you start integrating some degree of technology for that matter. For example, even if you look at basic science, if you say you should have all your anatomy on cadavers, it is not going to be possible as you increase the numbers. But you have very good simulation cadavers that is available where you could actually have a simulation lab which could actually look at the human body from the muscles, from the arteries, from the bones point of view and you could give a good teaching to students rather than having a huge number of cadavers which was a classical teaching. So, we have to find a way of how do we innovate to be able to accommodate more people and therefore be able to increase it. We won't be able to do it by just following the age-old method that bigger classrooms and bigger hospitals with more students coming in. We will have to innovate.

**Sandhya Venkateswaran:**

One question or to say one observation. Does this suggest if you are talking of innovations in let us say pedagogy and the way teaching happens, expansion may not necessarily require an expansion of teaching faculty? I am just wondering. Since that is a bit of a binding constraint right now. Are we saying that expanding seats would automatically mean the requirement of more teaching faculty which is already a problem? But what I am interpreting from what you said is that if we are innovative and use more technology and other processes then that is not necessary, that doesn't have to happen.

**Randeep Guleria:**

So, if you are talking of increasing the number of seats and I see that only that as a solution because if we say we are going to have that many number of teachers as we used to have in the past, it is going to be more and more difficult. So, let us look at the basic questions. Why are less number of people coming in as teachers in medical colleges. Two or three reasons for that. One is we haven't given that much importance to teaching as we should have as far as medical education is concerned especially over the last two three decades. 30-40 years ago, teachers were gurus and they were really revered and that was how things were. Now teachers don't get that much of respect and things have changed dramatically because society has changed, values have changed and we have moved more into a different type of environment and we must accept that and see how we can reinvent our teachers so that they are given that respect and the incentive to teach. It is happening in schools. You have more people going to coaching classes than they go to classes to attend in schools. It happens for PGs. Most students are going to all these coaching classes rather than attending the PG classes in medical colleges. Why are students not coming for internship? They are all going to coaching classes to prepare for their PG exam. So, we need to address the root cause of why this is happening. And how can we

change that into good quality teachers, give the respect to teachers, an incentivize as far as teaching is concerned.

**Sandhya Venkateswaran:**

The need for innovations that you mentioned, would you say that the situation is similar currently in public and private colleges? Or would you say the private colleges are a little ahead of the game in terms of innovations?

**Randeep Guleria:**

As Alok mentioned there are private colleges which are at a different level. There are some private colleges... and I think that point he made was very important... how does a private college get its revenues. If a private college is running its revenue from only on college and not on the hospital, it is going to have a tough time and therefore it is something that is not going to work out. But if you have colleges where they have a good hospital and there are some colleges in the south where the hospital is doing as well as a medical college. Then they will innovate and they will look at new methods. That is what we have seen in certain hospitals in the south where they are doing better innovations than the government sector. They are going more and above what the norms are. There are some colleges which will just follow the NMC norms and say that is it. The others which will realize that no, we need to be better in medical education, let us have a full scale simulation lab, let us develop new things. This is something we should encourage. and give incentive for this. That, why should we follow the basic norms. Why don't you do something new so that you are able to innovate. I personally feel we should also start looking at the curriculum in a different manner. Students demand different things, they demand now elective courses. Why can't we have elective in MBBS. Let us say bio medical engineering. Why can't we have elective in humanities or let us say traditional medicine. So, I personally feel there is a whole churning that we need to go through if you really need to look at all of these issues.

**Alok Kumar:**

Can I just supplement one thing that is coming out from experience? So, we have in district colleges, both belonging to government, we had one where we had an existing hospital, district hospital being upgraded and run as a medical college. And there were districts where we created medical colleges and hospitals absolutely fresh with district hospital being left as it is. And if I compare these two, it is coming up in the same period of time. And maybe three four years because after 2017 once this game changing decision of upgrading district hospital to medical colleges took place, if I compare these two, the performance, the teaching, is far better in the district hospital upgraded medical colleges than those which have come with perhaps greater investment but where the hospitals have come up afresh. Because hospitals to build up a patient base, to build up the reputation, it takes a lot of time. So, I am just saying because the same government is running, the same systems are applicable, but these colleges because they had good patient bases were able to take off much better and much faster, than those which had fresh hospitals built along with it.

**Randeep Guleria:**

I will just supplement that. That is also as far as the teaching is concerned. If you have a very good running hospital and then you have a medical college, the training is much better. I have

seen hospitals where the hospital and the medical college came together, the medical college picked up because it is easy to run the medical college. The hospital didn't pick up and the first few batches passed out without even having seen a labor room. Forget conducting a delivery. So, we need to really be conscious of the fact that you should have a very good running hospital if you really want to have a medical college of some standard.

**Abhishek: (audience)**

(Unclear audio) ... by that same argument should we try and increase seats in the existing medical colleges than try to create one in every district. Because are you looking at medical colleges from the tertiary care perspective or from medical college perspective? \_\_ spread the resources and anyway people will travel to state capital and not \_\_ for tertiary care.

**Sandhya Venkateswaran:**

Abhishek, actually do you want to do this now or we are going to have a Q&A session. Can we come back to it? Sorry. So, amrita is going to discuss a little more in detail about incentivizing private colleges etc. I was going to say something, anyway I lost my thought. So, we will come back to that. Sanjay, I want to take up the complicated slide that we had with three maps which talked about the difference between production and availability of doctors. So, there are states that are producing more than the number of doctors eventually available there and there are those that are the other way around. How can something like this be addressed? So, for example, states like Tamil Nadu have a larger number of doctors. It could be argued than is required as per stated norms. Yet they are attracting more doctors. How can this skew be balanced? Can they in a sense, the question is perhaps a naïve question, can they become exporters of doctors rather than net importers of doctors?

**Sanjay Zodpey:**

Thank you, Sandhya. Great analytical work I would say, thank you. We first need to understand when we talk about production and availability of resources on the field, there is always a time lag. We have seen that we have scaled up both the institutions and numbers in last decade. And the effect of that would be seen in the next decade actually. Because it is a duration of four and half years and internship and then they spend couple of years for preparing for PG exams and then so it takes time. Actually, it is a duration. So, we need to understand that when we are talking about the production capacity at this point in time and the availability of doctors that also needs to be looked at. So, that is one. Second is that there are two scenarios that you also mentioned that there are some states where you have high production capacity but the doctor's density probably is on the lower side. Could be responsible for like outward migration because when you talk about the production capacity sometimes students from other states who are coming, they go back. So, like students from UP and Bihar in Maharashtra for that matter, Karnataka... in previous decade we had seen that students come in. Then after graduation they go back to their states. So, even if you have a high production capacity the students that you are training, they come from different states and they go back. Second is that the outward migration also happens depending on the policy. If you see the salary of doctors, MBBS doctors for that matter, across the states is also variable. There are some states we have gone with more incentive schemes for doctors, walk-in interviews, of course, through NHM and RHM, last two decades we have seen. So, the policies not only in terms of salary but recruitment and transfer postings and even avenues for promotions, that also actually attracts. Production is one thing

that you study somewhere actually. But I wanted to work. Then I have to also see that where the greener pastures are there. That is also true. The third point could be, it also relates to... for education I may go to anywhere. But for spending my life I would like to see that from family perspective, living in urban areas, so the states who are having more urbanization probably, socio economic indicators, so these could be all parameters probably would be...

**Sandhya Venkateswaran:**

It is a much longer term and broader initiative that is required in terms of building not only medical infrastructure but also personal infrastructure that is an incentive for people to go back. But something that we were trying to look at while we were doing this, does the balance between the public medical colleges and private medical colleges make a difference? Because the sense was that students who are coming to a state into a private medical college will likely leave that state and go back elsewhere. But people from states who are studying in the public medical colleges are more likely to stay there more. Alok is saying no. And we wondered the solution to this was increase the number of public colleges in the states.

**Sanjay Zodpey:**

That may happen to some extent. Basically, because still, you know native, but I would say that other factors also which we talk about. Because for education you can go to... there are medical schools in rural areas also like Sevagram medical college. One of the oldest medical colleges in the rural areas that people used to come. But how many of them really worked in the Wardha district from Sevagram? Most of them have moved out. Even not in the very region. They came from all over India and then went back. So, you always see the greener pastures as long as the spending 30 years or 40 years practice in life and all those matters and things to do matter actually.

**Sandhya Venkateswaran:**

So, that is not the simplistic silver bullet complex.

**Alok Kumar:**

If you do a survey of all those doctors who have migrated to UK. And find out how many of them are publicly trained and how many of them are privately trained and you will get the answer.

**Amrita Agarwal:**

This question Alok is to you. You know, UP has a large private medical education sector. What has been your experience in terms of engaging and regulating private sector and partnering with them. What has worked well and what has not worked well?

**Alok Kumar:**

Very interesting. So, first of all let me disabuse you of the notion that I am regulating that. The crux of the matter is how do you bring... and I think what I would partly agree with or quite in agreement with Dr Guleria... is that we need to bring a new national mission on how do we integrate technology in teaching. So, I think the model that we have evolved over a period of year, the teacher intensive model that we have been able to evolve, the teacher and the patient intensive model, in some senses will continue because those are required. But does everything

require that? How much of it can be shifted to simulation based learning? Is it possible? That is a function of money. For instance, the anatomy point that he was making and we can take birth delivery or any other thing. Again, the question is all these cost money. A good skills lab in a medical college requires 10 to 14 crores rupees. How many of the private medical colleges will be able to afford it? Will the government assist them in putting those labs? So, either we do a make in India where we bring down the cost of these which make it affordable for the management. Because the management will invest only because they are recovering that money from the students. So, if you ask them to look at AI, audio, virtual reality, all these kinds of setups, they would require to invest money. Why would they invest money? Because they can get away with influencing the regulator rather than putting in the money and hard cash in creating all those skill labs and so on and so forth. So, I think there is the time now has come where we need to do a... and there is nobody who is looking into the evolution of medical education. Who is looking at this job? The ministry is looking at... you gave the example of AIIMS. They are busy staffing their own AIIMS. They are expanding at such a rapid rate. Or they are busy in running programs like NHM and other programs which they are running. The state governments are likewise. ICMR is largely busy in doing all kinds of research but there is no medical education research in some senses. So, I think now the time has come with the national government... and it has to be a national effort because it is the same for all the states. And no state even though UP is a large state I am trying to do it in my little way, but I feel a lot of constraints. It requires a whole mission on modernising medical education. Given the faculty shortage is not going to go away, these figures what you see is typical in all government colleges, also I would argue all private colleges. There are some trades for instance, radiology, you don't get a radiologist. Even in medical colleges I am saying I am failing to get a radiologist. Because the private sector is spaying them far more than what we pay as medical teachers. So, the question is teachers are necessary, so you can't do away with them. But can we supplement those and as Dr Paul pointed out that time is limited. They have to do patient care, they have to do teaching and they also have to do research. I mean, for their earning their promotions they need to publish papers. And publish papers in a good \_\_. That also that also takes time. So, you have to assist these teachers through technology. But as far as I know, no state in the country, even the government of India is looking at this problem in a structured way. So, unless you do something to enable these teachers to be more productive and more efficient with the use of their time, that I think is a mission that the time for it has come.

**Amrita Agarwal:**

Thank you, very powerful. Dr Guleria, there has been a discussion that it is important for hospitals which are large vibrant hospitals setting with large patient base for them to think about getting involved with medical education. When you look at the private sector and since you spent time with the government and now you are with the private sector, you can see the contrast. There are private hospitals in a spectrum. Those who are very heavily involved with medical education and are trying to innovate. Those who are doing a lip service, trying to do some minimum number of seats in DNB or whatever. And those who are not bothered because for them their main fees and income is the patient, inpatient or out patient. The fees from students will not really make a difference to their P&L. What you see as the challenges for them to really engage more with medical education and get involved with more production of quality doctors?

**Dr Randeep Guleria:**

If you are looking at increasing the number of doctors you will have to get the private sector involved. That goes without saying. The issue is how do we get them involved in medical education? Because like you rightly said a large number of large private hospitals don't see it fruitful to get into medical education. The revenue is coming basically from patients care. We need to develop a model where we can incentivise it and make it useful for them to invest in medical education. I personally feel that we need to push it to the new level because if you want any institute, any hospital to go to the next level, it has to incorporate medical education and research as part of its ethos. What makes Harvard and Mayo different from other hospitals in the US? It is because they have incorporated medical education and research as a part of their culture and ethos. We need to see how do we do that in the corporate sector, in the private sector. And how do we encourage them or make them understand the importance of this. We have gone down a way where we looked at only short-term revenue generation. If you need to look at a long-term mechanism of seeing how can we encourage these hospitals because they have a huge number of patients. They have state of the art equipment. All of them have invested a lot in state-of-the-art equipment, in the number of patients, complicated cases they do much more than what is being done in the government sector in some areas in some states. But teaching is something they are not willing to do and research is another thing they are not willing to do. I think if we are able to do that, we need to develop models of how do we encourage them to do it, how do we incentivise them to do that, how do we give them a little bit of a nudge and how do we make it easier for them to do business in this area. So, lot of colleges feel that, corporate hospitals feel that setting up a medical college... because it is something that we are trying to do in the hospital that I am in... is actually a quite a task based on what the norms are. All the norms now with the new regulations coming in have eased a lot. But still there is a feeling that you need to follow the norms are really strict. Because if you have a good tertiary hospital where the patient load is good, it is a vibrant hospital, you should encourage it to just start, not only PG courses, but even undergraduate courses with some degree of incentive driven. Unless we do that, we are losing a large number of good areas where student education can be done because that entire material and equipment and infrastructure is already in existence. We are not using it for training and research.

**Amrita Agarwal:**

Very insightful. We do see in some countries where the government provides grants for research across public and private. Can that be an incentive for private sectors to say that we will create a research ecosystem which will help them attract better doctors and better students?

**Randeep Guleria:**

My take on that is a little different. Yes, we should have incentives. Government does give, ICMR, DST, DBT gives grants if you write a research project. But you should encourage them so that they do it much more. I also feel that we need to go a little ahead and start seeing how they could interact with industry. We have been very sort of limited in terms of industry partnership. There are now huge avenues opening up for looking at research with industry partnership. Why should it be only the government? Why can't we say that these hospitals should look at research with industry partnership and look at innovations, start-ups, new drug development, new device development. That will really truly push the make in India concept. That is just there. It just needs to be sort of integrated into a proper manner.

**Amrita Agarwal:**

Very insightful. Israel is one country which seems to have done that quite a bit in the medical space as well. Where they have taken the research into the commercialisation space. Very helpful. Dr Zodpey, we have discussed lot of problems and lot of things which we could be doing. Any insights, thoughts from you on the best practices from other countries and abroad? What else is happening out there? What else could we be considering and really thinking about from the Indian context on the challenges we have been discussing?

**Sanjay Zodpey:**

Thank you, Amrita. Our model has been traditionally, the healthcare model, is doctor centric. We have seen like for example, countries like Thailand. Task shifting is so important, empowering nursing professionals or nurse practitioners for that matter and shifting some of the responsibilities of the doctor. Because we have one limited number of doctors available. So, how we can empower our nursing professionals to take the responsibility. And covid 19 has really demonstrated that our nursing professionals were at the forefront actually dealing with the pandemic. So, that is an example from Thailand for that matter. The physician assistants, the allied health professionals in United States have been used for task shifting purposes. So, that is model of physician assistants and allied health professionals is also available to look at it from the task shifting point of view. To some extent Bangladesh and even Thailand also while recruiting students into the programs, health professional programs, including medical education had given preferences to the rural background so that they can go back to the rural areas with an idea of understanding that the nursing students or the medical students coming from the rural areas will go back. So, the admission criteria so that the inequity of distribution of practicing doctors in rural and urban areas can be addressed. The efficiency of scale model like for example China is too extreme I would feel. So, Mr. Paul also mentioned about the heart of medical education is actually around the bed, around the hospital actually to some extent, but having said that, your data 2011 we had 122 seats to now 151 seats or 150 plus. Definitely there is a scope that we can further go to 175 or up to 200. That is possible. Not 700 and 800 like China model because then you have to retrain them basically. You have a degree with 800 students sitting into the classroom. But China model tells us that we have to think about it that how that from 152 we can go to 160, 170, maybe up to 200 also. That is something. The Romania had a problem of doctors migrating to other eastern European countries. And what they looked at in the reasons for that and the living conditions and providing facilities for the children education, those kinds of measures were also taken up. Which we also did actually to some extent through NRHM and NHM in India also. So, there is some learning internationally that we can definitely look at it. Challenges are equivocal across the globe if you see. Thank you.

**Amrita Agarwal:**

Thank you, Dr Zodpey.

**Sandhya Venkateswaran:**

This is so interesting and so useful. I wish we had more time that we could go on, but sadly time is limited. So, what we are going to do is just open it out for a couple of questions and then we request Dr Paul to give his closing remarks. Abhishek you had a question then. I am sorry. If you could just summarise your question, I remember it was to Alok.

**Abhishek (audience):**

It is a question of minimum essential scale. I think a lot of the conversation has been about limited resources, whether it is faculty, the importance of having the clinical kind of expertise and the ability for students to get that opportunity. Therefore, should the focus be more on taking our existing medical colleges to the next level in terms of the number of seats rather than trying to saturate all districts. What is the balance there? And also, how do we view medical colleges. Are we viewing them primarily from the tertiary care lens? Or from a medical education lens? What is the balance there of? That was my first question.

**Alok Kumar:**

So, I think the answer to that question would depend on what are the objectives that you are trying to fulfill. If the objectives that you are trying to fulfill is only production of doctors irrespective of the geographical skew, yes, it is more efficient to scale up existing institutions. But beyond a point again, you said that there is a limit to which because of bedside teaching because that is how you can train the students well. If the objective is also to provide tertiary care to citizens within a pre-specified radius so that everybody doesn't need to flock and it is an expense because coming to a state headquarters or a national capital A) is dislocating for them, the care giver or the person who accompanies the patient also loses wages etc. staying costs in the bigger cities etc. So, the answer to that question depends on this. One word about the regulatory culture... (Cut in video for a second?)

**Sandhya Venkateswaran:**

Thank you Alok. We had a lot of hands up and I am wondering what is the best way to do this. Could we take like three questions and then we would just request the panelists to respond to them.

**Dananjay Vaidyanathan (audience):**

Hi, this is Dananjay Vaidyanathan. It was very concerning to see that the growth in the number of private sector seats have drastically gone down. And I think we are talking a little bit about the factors behind it. I wanted to understand from Alokji and Amrita, specifically what are you doing right in UP to attract these people to run this arguably lousy business? Right? The private sector thinks that there are better ways of deploying capital. Indian capital is going to Caribbean and opening medical schools, that is more attractive. So, what are you doing right, the next level of detail will help the country? Then Amrita, if you have seen example from other states which have done this, like Tamil Nadu obviously they are able to attract. The business must be working, why the private colleges there.

**Vinod (audience):**

I don't have a question. I am going to make a comment which I think will be useful. It is not the number of medical colleges you have, it is the quality of output. And I will give you an example. A few years ago, I met an American lady who was writing a book. She asked me where are your children. I said my daughter is in Puna. She is studying medicine. She said armed forces medical college? I said how do you know? She says my husband is the head of nephrology in John Hopkins university in USA. Anybody passing out of armed forces medical college can come straight there. He has already got 6 persons. I asked Madhuri Kanitkar recently. Dr \_\_\_. I said Madhuri what is the reason. Why is it only them? Why not other medical colleges? She said, Vinod, if you come to AFMC, every morning at nine o'clock the professor



who has to teach will be there. 365 days. Every student has to attend. You go to these other colleges, that commitment is not there. The professor may not turn up. People may not turn up. I am leaving a point, you have to take the quality of commitment in these colleges rather than number of colleges. Thank you.

**Sandhya Venkateswaran:**

The lady in the back. I request people to be really brief in the interest of time.

**Audience:**

I own 11 global patents related to devices and making surgery safer. I really think our country, this has been a great conversation hearing for me, I just walked in. But I really think where we really need to club our partnership is with innovations and industry. I really thought that these were points which were very well put forth. I am also on the board of the American association for hysteroscopic surgery. Having said that I think we need to focus that because revenue generation is hugely large if we are able to focus on innovations.

**Sandhya Venkateswaran:**

May I request just questions if people have questions. Rest we can take it up during lunch please. I am so sorry.

**Asha Gupta (audience):**

I am Asha Gupta from university of Delhi. My question is an extension of what she asked just now. How can we raise additional revenues for having more medical colleges and supporting medical education in India? And I was wondering whether we can use the fund meant for social responsibilities, can we take advantage of that and divert that fund for medical education purposes, one. Secondly, I am a political scientist. So, I just wanted to know in US recently in a judgement, supreme court has ruled out giving special protection affirmative action to blacks in Michigan and Harvard university. No longer now they cannot count race as one of the factors. Whereas in India constitutionally we still have reservation. So, I read somewhere in AIIMS for example a student was denied, you cannot use, students coming from such and such hostel cannot use carrom board. So, it is still stigma. Whereas in US people prefer black doctors so that black community can gain from being closer to them. In India it is other way. There are reports politicians do not want to consult a doctor under reserve category.

**Sandhya Venkateswaran:**

So, ok. How is this being handled is your question? Fair point. I think, I am just going to read out one question which has come from the participants online. This question is from Leela Varque and she says besides the number of beds please comment on the critical top three areas of a functioning hospital which could be eligible for a medical college. She said I asked because the district hospital in many districts has number of beds but has not grown in capacity and how well is this being monitored? Sanjay, could we start with you? Whichever of these questions you would like to respond to.

**Sanjay Zodpey:**

About the district hospitals and beds in the district hospitals. In fact, the national board of examination has come out with a program of recognizing the district hospitals. And using

district hospitals for postgraduate medical education, diplomas and degrees also and that has increased in last five seven years. Tremendous increase. We are working in eight states including UP actually and all states have been proactive of using their district hospitals for postgraduate medical education. And around 1200 national board of examination DNB seats are added actually in last few years. I think that is an example of how we are using the beds for that purpose.

**Sandhya Venkateswaran:**

Thank you. Dr Guleria.

**Randeep Guleria:**

I think, again coming back to the same point that although you have the required number of beds, do you have dedicated teaching faculty? So, even if you talk to district hospitals you need to have dedicated teaching faculty who are able to do that. And many areas where the DNB program is run the doctors are busy with patients and therefore lot of the academic part, the teaching part actually gets sort of neglected. This doesn't happen in a medical college per se. but in a lot of DNB programs especially in a large hospital the training is not what it should be. So, I think we need to really look at that. If you looking at sort of upscaling district hospitals you need to have good teaching facility. You should also have investment in newer technology which is coming in. If you have a district hospital where you are going to have teaching, so you must invest in new methods of not only teaching but in terms of what is available in terms of patient care. So, if you have a well-equipped ICU, are you doing what is now should be basic training rather than just having the age old equipment and not being able to train people on what is the latest.

**Sandhya Venkateswaran:**

Thank you. Alokji?

**Alok Kumar:**

There is one question on concern about the slow growth in the private medical colleges. I think, I am not too concerned about it. Even though we have done well about it I am not too concerned about it. As long as we are able to increase the supply which I think you have seen, we have done reasonably well in the last decade and this is a great push by the government. I think we need to commend the central government and the leadership here because they really have given it a push. And that has resulted in this huge expansion. As was pointed out I think the concern, the concern is numbers definitely. But the concern is also quality. Because you could potentially multiply the number of colleges but unless you also do it with quality. So, the challenge is twofold. It is the number dimension or the quantity dimension, but also the quality dimension. I think two or three things need to happen together. One is the issue of how do we leverage the good functioning hospitals whether in the public sector or the private sector for training. How do you inculcate the culture of training? And if you look at large parts of US and I am certainly aware even in UK, the hospitals and the people who run those hospitals have a very good system of training students or interns who come from these colleges. Unfortunately, this is the trust that we have not been able to develop with both our public sector as well as private sector. So, typically speaking, a college will be there and you will be assigned on rotations to let us say eye surgeon or a Gynae or somebody who will be doing private practice. But they will be very

happily doing it and once they go there their internship will be really of the quality that should be that is there. So, we have not somehow been able to develop this. I don't know how we will be able to develop but it is definitely a thought, we need to structure our thoughts around it. The second part is that given the fact that the insistence on a full time faculty etc. if we can supplement it with part time faculty. Because there are lot of practicing doctors let us say in Gorakhpur or... but they will not give up their practices to be full time engaged there. It is not lucrative enough for them. But they can and do spare a part of the time. But a centralized regulation at the level of the national level may not be able to do that micro monitoring. So, is there a need or can we think about creating capacities at the state levels to do these kinds of micromanagement on which the central regulator can place trust. So, we need to think something of that at the state level. India is just too large and diverse to have one central regulator for the entire sector. So, can we think about doing that. The third thing I am saying is, again, I will reiterate the point which I made. This technology, how do we integrate technology into medical teaching, both in the public and private sector. I think a national effort is required. To say that the growth is slowed down, it is ok. How does it matter as long as the seats are increasing, I am ok. Whether it is the black cat or the white cat, as long as they kill the mice, I am ok. But the question is are they effective in catching the cats. That is the problem. So, these three things could go some way in addressing this problem.

**Amrita Agarwal:**

I fully agree on it. It doesn't matter where the seats come from. And also, on quality. What I have seen across different states and this whole question on private sector also, then the analogy from education like engineering colleges and other sectors as well. What matters to the private sector... and there are others who are more well versed with this... is predictability. Which is what are the norms going to be three years, five years or ten years down the lane. See, the average breakeven period is ten to twelve years. You don't do it for short term. So, when you look at the good quality private sector, I am not saying all private sector is similar, you need to have some predictability of policies and framework. And local state capacity to the point which Alok was mentioning of governance in their local context which can partner effectively with the private sector, with good quality private sector to enable them and to understand and partner with them. I think those things are very important. If the norms keep changing, if there is not local partnership and the focus which in the UP context was mentioned about, those things will be challenging from the private sector point of view.

**Sandhya Venkateswaran:**

Thanks Amrita. Thanks to our panelists for the responses. Dr Paul, may I now request you to share your thoughts.

**Vinod Paul:**

Thank you very much indeed. It's been a very fascinating session because we haven't sat like this for long. So, it is a very useful and having experience on the panel... Alok's work, Dr Guleria's work and Sanjay's analysis and the report. It is truly igniting thoughts for looking into future. So, thank you very much for doing it. What I will do in the interest of time is to broadly look at two issues. and responding to... not responding, reflecting on the discussions that has happened. So, let me quickly talk about undergraduate education and the points that have been raised. I think one fundamental thing that we can all go home with is surely to say

that quantity is important and quality is important. This whole tussle about where and how to make it happen is a huge challenge. We don't want to have high quality doctors just in cities or district headquarters and we don't want to have poor quality doctors everywhere. So, there is a balance that has to be done. There is a role for the government state and center and the regulators and society as a whole and the sector as a whole. It is a churning. It is a difficult issue as we have heard. On the undergraduate I would like to highlight that NEET was a big reform and NMC is a big reform. NEXT is a big one that is coming. Fee structuring under NMC act, the act was done by him and his team. The first version and the core version I would say. So, these are huge, huge reforms by themselves. I also want to touch upon a favorite reform that our team did and that relates to the district residency program. If you haven't heard of it, I would like to tell you about it in three or four sentences. Under this scheme mandated by regulation, all postgraduates of general specialties in the second year will rotate at district hospitals or equivalent in terms of patient load, multispecialty, core specialties for a period of three months. So, what does it do? I am getting training in pediatrics, I am in a medical college typically secondary tertiary care system and then you can say more sophisticated system. Well evolved. From here I go and work in a secondary level closer to people. I learn those problems and those challenges. So, that is one part. Second, in doing so house job level, that means one year specialty, one and half year specialty or just under two years specialty depending on when the rotation happens in the second year for your batch, you are strengthening the services of the district hospital. I hope Alokji that is happening and how to get the best out of it would be one of the action points. I want you to spread this great word. Third, the hidden agenda you can say was the following and is the following. When a quarter batch, three monthly rotations, so as a batch of let us say 50000 post graduates, removing DNB 12000 post graduate trainees of that batch are away to district hospital. Then I can create as many seats because my medical college can accommodate teaching for them. So, 25% seats can actually be enhanced and we are encouraging the states now to take that action from the next batch. I want you to tell us whether the scheme is working and how to improve it and how the stakeholders can help in that regard. Because it is several parties. Medical education department, the department of health which not necessarily may be all under one system. They are the ones who are hosting them. Medical education department is facilitating, college is coming in in terms of providing the connect and so on. I like us to work to... if the ideas are good, can this scheme be done better. It is one point I wanted to make. A ratio of almost one per thousand is achieved which is a minimum ratio. India should not think about minimum. It's been such a long pain for us to reach one per thousand but now I think we are entering the relatively exponential curve. Therefore, one thing that we should go home with is to say what is our next benchmark. Here the benchmarks are typically two to three. Simply two to three. That's it. Some have four. When can we have two per thousand? One per thousand is minimal. That is for Nigeria or whatever. WHO thinks of those nations. Not India. Not India of 2047 anyway. Ok. So, we should look at the trajectory for two per thousand and then I guess 2.5, 2.8 or 3 per thousand. I would like to see this happening two per thousand by 2035 and I think we are on that road. We don't have to make 2 lakhs seats. Even below that one can work in that direction. I was trying to do some more recent math just now. So, 2035 I think we should surely aim for two per thousand. Then three per thousand by 2047. Then we are like a developed nation. Keeping in mind also the task shifting, task sharing, allied health professionals, counselors and so on. So, we have to go forward in that direction. We do need the quantity. We don't need 4 lakh seats. But we perhaps need a few more thousand seats for us to take that trajectory because that should be defined now. And start

building on that. The next point in undergraduate education is, let me touch upon the faculty. Several issues. Several challenges. Not easy. I gave you the reason for the fundamental calculation of the number of faculty that you need. You all can sit down and tell us what is... where a full time faculty can be shrunk. We will be happy to convene a meeting with NMC. Just tell us this number of beds this is not required. Because this is what exactly we did about four years ago. Three and half or three years ago. Less than three years ago actually. So, you tell us. This is going into running the 300 bed hospital itself. Additional faculty... may be here and there a 10% up or down... but let us all sit down and say, we don't need. We are happy to change. I want to be very happy to be a catalyst to convince NMC. Because it is a different body, I can't say they will do it. But we will go along with that. Please keep in mind that you do need faculty for the pre-clinical, they are also doctors. They also have some experience to be counted. And of course, Para. So those are called additionalities and the rest is all hospital driven. Please tell us where you know, this can be done. Also, I think there are some ideas informally we keep sharing, the structure, the professor versus these less years... that can all be played out. If you generate a discussion, we are happy to sit through because if we make it 8 years instead of 7 for professors there is no harm. Heaven won't fall. There is a flexibility out there. We can work this out. For example, in times we were together in BMC, we insisted on some aspects of quality from teachers which you also should know. One of the reforms that happened was that we wanted these teachers to have undergone medical education course and research course as a mandated for their promotion and some other editions. So that they are responsive and responsible. I want to touch upon this issue of visiting faculty. So, you do need core for running the hospital, 24X7 hospital and that should be or that is one starting point for faculty / teacher / consultant / specialist calculation. I do believe that there is a scope, significant scope for visiting faculty. Because what we will do like this would be minimum, really minimum, we are happy to make it real minimum and additional faculty as part-time faculty is a great idea. Great idea because it brings in quality, it brings in more facilitation. Why do you have to teach only at the average level? Why are we not teaching at a higher level? So, that brings in the quality part. So, essentiality part through the full time. Let's change that if that can be done. And you can study that. At what point is the tipping point of quality for hospital and teaching. And then we have additional to stress on the quality and more vibrant teaching and higher level teaching. Not average quality. 10X quality that can be brought in. Now, on this we created a regulation which allowed... we said let's say start somewhere. We said up to 25% additional visiting faculty can be taken as part-time. They could be retired people, they could be NRIs, they could be army, they could be private full-time practitioners. This existed between 2019 till 2021 I think or 2022. When the NMC cut out everything except the NRI. I am trying to figure out whether it was by design or by default. But it was such a sad thing and this has to be reversed. I brought it in writing to the attention of NMC. We should in fact, now I am saying that every medical college should have a permanent and some essential visiting. That is what I wrote and I hope you can find pace on that and brought to the attention of the honorable health minister also. We just detected that this how it is happening. But let me tell you the reality. When this regulation was in vogue and this was also a response to people who said I am a great gastroenterologist, I am greater surgeon, I want to teach. So, the regulation existed. Yes. You come and teach. But nobody came. They give speeches but none of them came to teach. None of them told that they will be willing to come on their own and teach in a medical college within 2 kms radius. So, I am not sure whether it should happen and why do you want to be permanent. You are not going to come and do OPD there. This is a win-win situation. You do your job, if

you are passionate about coming and teaching at 8 in the night. But I am disappointed, to my knowledge no one came. All possible, because it lasted very short period. Still, it is a short period, but the traction wasn't provided. But I am saying those who had the aura and in big cities, wanted to teach. They could have created the demand right away. Any case more enlightened medical colleges are always aware of who they want and all. I am not talking about every medical college. But this never happened. So, please introspect. There are times when there is a rhetoric that they want to teach. We will come. We said come and teach, you don't have to do clinical care or surgery. You come for these number of days and teach. We kept options for remunerations too if you look at the regulations. Unfortunately, NMC has gone on a back foot which is very disappointing. It is not acceptable and we will set it right hopefully very soon. On the UG, the issues about faculty, there are several... if you look at the qualifications and that can be changed. But also, would you... we are fighting against at least in part sense... against the business dynamics. Suppose we were to pay more than the privates. Can it happen? Think. Secondly 30% vacancies, even at AIIMS and perhaps even more in central government hospitals where there is everything going for you in the city etc. Part of it is also the delays that occur in terms of recruitment. The recruitment cycles are so painful. I am aware of the UPSC cycle. You start nine months, then another one, it just doesn't move. It should be revolving, it should be moving fast. Then you take ad hoc and temporary, that person contributes for nine months, one year and then this person will be said you go away because you are not selected. You get frustrated. So, there are also other issues. The short point that I am making is vacancies are not only... only lack of availability. Now technically Karnataka has a lot of supply chains let's say. But the vacancies exist there also. So, the recruitment processes and conditions, why can't those be liberal? Why can't we have more liberal... why can't government pay... these are questions to be thought on. Why not two times or three times. Then it can be equated to other sectors. We have to think like that too, why can't we be generous and so on. I would like to spend a little time on the post graduate side. Now, if you go towards let's say three per thousand doctors... Today it is 14, so 14 multiplied by 3, would be about 40. And out of this if you are like OECD at that time... or let us say take double, let us not go to three times. Double means 30 lakhs. 30 lakh doctors. So, OECD is 70% are specialists. Which means about 20 lakhs have to be specialist. and the rest 8 or 9 lakhs will be general. Today we have just the opposite. So, the short point is how do we go... and I think today estimate would be 4 lakh specialists let us say. From 4 lakh how do we become 20 lakhs. So, my problem is 5X in a converse way. Typically for every specialty or average specialty we have one specialist where we need five even today. And that is the biggest pain. Because we will have the pipeline for UGs even if the private sector doesn't add anymore medical colleges. But I want and I will be pitching for that because the quality can come from there. We can even go forward making the existing thing better. The UG pipeline and in between the PG pipeline. That pipeline is set. But then the openings for post-graduation have to be multiplied many, many fold. Now, let me give you some examples here from the data that my team tracks. General surgeons we are about one lakh, so these numbers are changing by the day and by the month. So, let us say one lakh say a month ago. Our ratio per lakh is 8.8 and our pipeline is 4546 DNB and NMC. In the lower middle income countries, the ratio is not 8.8, but 22 LMIC. High income countries 35, four times. The same 4 times or 3 times, even in surgery. If we were to have the current pipeline only, not increasing, then we will take 36 years to become LMIC and 57 years to become high middle income country. Challenge is... and no attrition and no deaths by the way. This cannot account for all that. She can do better analysis. Anesthetist, 45000 ratio 3.4, LMIC is double.

For us to reach double is 27 years. The high income countries are 10 which means something like several times, 30 years. Pediatricians, 60000, to reach LMIC with the current pipeline 33 years. 33 years, LMIC. And high income 65 years. Psychiatrists, high income, 128 years. LMIC 20 years because psychiatrists tend to become many, many more when you move to the high income. Short point I am making is please spread the word that PG is a huge challenge and a priority. There has to be a shift. There has to be a clear discussion. Now that the UG pipeline and therefore PG and super specialty pipeline in a way is moving, quality and other issues are there we face. We talked about some of them. So, this is a critical issue sir for all of us. Now, PG training happens on two tracks. One the NMC system, we create a medical college, third year onwards, it used to be fifth year onwards, we made it 3<sup>rd</sup> year, you can start having PG. You start PG in some specialties. Then you increase a little more. You increase a little more. It is something which is stable but moves step by step and it asks for more resources as you start going up. It will work because now you have undergrad system evolving into PG but because a very massive expansion took place in nine years from 387 medical colleges to 706, 85% increase, for them to mature as PG system is going to take a little more time. It is just a reality. But it will work, it will happen. But them to become super specialties will be another decade, another eight years. Just keep this in mind. So, we can start increasing but this increase is going to be slow and we must do it. We must do it, we must do it. We must also go for government institutions which can be converted into PG institutions such as vibrant municipal hospital, maternity hospitals, etc. They can be NMC, PG institutions because that is allowed or ESI hospitals straight into PG. Don't have to go via UG in the NMC system. But nobody invokes that by the way. Nobody invokes that. The system which gives hope is the DNB system. Now, DNB system works on the premise that PG training is by apprenticeship. This is the UK model or European model or American model. That's it. You don't need a medical college in which you learn. You will be learning under a mentor called a consultant, doesn't even attract a professorial designation. At the end of certain period, you are watched how you are doing it, keep your log books as ways of monitoring and quality assurance and at the end of it you give a great exam. If your competencies are good, you will get through. That's the way it is modeled, it is not perfect it can improve both in terms of monitoring and quality assurance. But there is a system that we have. How many seats we have from that system? 14000 as of today, out of the 66000 or so PG seats 14000 are contributed by the DNB system. Which also has diplomas, PNBs, fellows... and I am putting it all together. Why I have hope is because of the following reasons. One, that the district hospital where we may have a medical college but not yet ready for PG, one or two departments can start DNB right away. District hospital which has no medical college, you can start as you heard as at least diplomas in crucial areas. But the treasure is in the private sector. The treasure is in the private. Even now 68% of DNB seats are in the private sector. And we are grateful to the private sector for this. But then there is so much more scope theoretically that we can harness and that can make a difference here. And I want you to add your voice to this. Even as you expect better quality from DNB. And hold them accountable. And we will work for that. Now I will give you some numbers here and then I will start winding up. PMJ has 12000 private hospitals. These must be modest size to big size. They may not be the mega size. It's okay. Total private sector hospitals are around 30000. So PMJ let us take 12000. Even if half of them say 6000 contribute two seats each in future what do you get? You get 12000 seats. Two seats in some department. If we take this a little further and say if 10000 or 15000 hospitals start taking part and they contribute four seats, that is doubling the seats. We must talk on this topic. Private sector has some reasons, there will be another day. Siddharth

is sitting there. He has heard this quite a few times. I would like to tell you there is no traction happening there. They are moving on their own pace. They have capacity to do this, but they do only this much. But the same thing applies to ESI system where they can offer 300 seats next year, but they will only come with two seats or even minus a few seats. That is the way it is. I plead that we create public opinion around it or an academic opinion around it because that can put us again on the exponential curve. For PG if they have to be steps to be taken, they should be taken. We should talk more about this. We should find a way how to handle this. Some minor points but they are important. One, we created a BOG system where we said on coming to the existing hospitals not trying to become medical colleges, this is a big issue. Can this be solved. Alok, can we think of a scheme, you have crafted so many schemes. Can trust hospitals come in? You see, all these hospitals, the big ones are very happy because they have so much of demand. They don't even join Ayushman Bharat. Because they get away with this. Because they have demand. They are fine. But then trust hospitals, other hospitals can they come forward in certain way? We can try to create a scheme. And regulation allowed three parties to run a medical college. The hospital, somebody who does the college, somebody who does the residential. You can come together as private entities and you can develop. But not even one demand has come even though when this scheme was created there were some takers, Tata, this, that, who wanted to come. But didn't happen. So, we do create schemes in response to the ideas that we hear. Some work, some don't work. Please help us craft those schemes which you think would work. But surely well-functioning medical colleges... well-functioning private hospitals should take part in UG. They will bring in quality and vibrance. But I plead with them to surely, maximally contribute to the PG pool whichever way you want. Tell us what is that you will take and why this is not happening. Please understand that best hospitals in the world that we are all familiar with have a residency layer. They don't work on consultants. A lot of private system works on consultants. Heavily paid and then there is nothing. And in the night after five o'clock Ayush doctors, FMG trainees, others run the show. Be aware of it. You may not know it, but I want to tell you. Only stable residents would be the DNB residents. And they are so miserly on it. It is all consultant heavy. And consultants do need sleep. So, it will improve their own quality, it is not seen but I would like to talk about this. If you look inside you will get to know. Everything is coming out in the clause. We don't watch quality and outcomes, there is no regulation, so it is not known. Only hear say. So, my plea is that it will improve the quality of your own hospitals, you will be global hospitals. Global hospitals have a strong layer of residents and trainee residents. As some stated, the best hospitals have training simultaneously. You can be a Mayo clinic tomorrow. The big chains in particular. So, this is where India's opportunity is and we are moving rather disappointingly. We are moving somewhat, I must say even in DNB system from 5000 seats eight years ago we are 14000. More than doubled. They are working very hard. Part of it of course, is government. But still private sector is contributing. There is scope here. Just think about how we can work here. It takes a long time for creating a PG and a college. Even after that there will be issues of quality. There will be issues with specialty training. I would like to tell this.

**Alok Kumar:**

If you can exempt them from NEET during selection? There are major problems.

**Vinod Paul:**

From DNB?



**Alok Kumar:**

Yes.

**Vinod Paul:**

But there is benefit for DNB right from NEET?

**Alok Kumar:**

What is happening is, there are many MBBS doctors. They want to do specialization. They are working now in our system. If you ask them at the age of 40 or 45 years to write...

**Vinod Paul:**

We will reserve seats for them. You sponsor them. There is a system in DNB sponsoring for this.

**Alok Kumar:**

You are doing it sir, but our health department what it does? They don't give more than 10 doctors a year.

**Vinod Paul:**

That problem is there. But it is there. State can sponsor DNB candidates. It is given. DNB program can run radiology, from you and from you and you can join hands and do this.

**Alok Kumar:**

In private sector there is Apollo, Fortis. Why can't we give them the right to select their own residents. Nobody is forcing a Mayo clinic to take on a particular resident.

**Vinod Paul:**

We can sit and talk about it. There are corruptions, payments. You only changed it. But we can sit and talk about it.

**Alok Kumar:**

Many of the practicing doctors would like to do super specialization. Don't make them sit through with the 20 year old and 30 year old guys who can mug this.

**Vinod Paul:**

We can discuss this. We should. I want to pitch one last thing. Perhaps the last thing. That the future for general care, GP care is MD family medicine. I would like to take full responsibility in this meeting and say that in this current MBBS training program, even with all the modern training methods, we are unable to give them the skills so we can say you take care of the treatment for the first line and second line in diabetes or you take care of deliveries which a little more than normal. This is because this modern medicine you need this and that. This is the way the happen to do. There can be another model. I am not talking about it. That two year model and its competencies I am not discussing that. In US and UK and in many places, general practice and family medicine, MBBS, or graduation level is having it. In UK GP there is a MBBS course of five and half or six years. After that another 5 years. So, after 11 years he gets

to GP. Don't expect from us that in just five and half year training, the NEET training and other coaching that happens, we will be able to give you a doctor who can treat your mother or sister. This cannot happen. That is the reason for retraining and refresher training. For hypertension another course. This is also a reality. I want to tell this here. The way forward is, MBBS should be tough and in a way default mode. Even Sanjay suggested before. MD should be towards family medicine. We should bring family medicine at the specialty level. The 30-70 I was talking about that will be general and should become like MD family medicine. The specialists behind this they get angry. But then it is fragmented. Let me distinguish family medicine because this comes up and people ask how to differentiate. Internal medicine is not family medicine because I am only looking after adult? If you want to work with children you have to spend 6 months. Even if you are not doing deliveries, you can learn it in 3-4 months. If you deal with old age, it is a different curriculum. Then they ask what is the difference between family medicine and community medicine. The difference is community medicine deals with public health. Have you ever seen a PSM doctor practicing? Does anyone go to him? No. there are so many topics where there is no awareness, there should be a discourse on having a fully loaded family medicine. If you all feel this can be all given in five years then ok. I will withdraw and we can say done. You can get your treatments done for you mothers from them. If not, then we need to have discussions on moving forward in that direction. There has to speed in that direction. Now there are only 13 seats. Only 13 family medicine seats. Seven medical colleges have this program and they don't use it. 13 medical seats. Please think on this. I will leave this thought. Above all only one word and I will hand over to you. Two words. One, every bed that we have is not only a clinical care bed but it is also a health professional training bed. They are all together. Whether it is private sector or district hospital, there can be no distinction. We have to work hard like I said. Lastly, trust with the society and the patients should not be compromised. It should be built and we should move forward keeping that overarching light in our minds.

**Randeep Guleria:**

Just a suggestion on the family medicine side. Can we then look at a program where we stay away from NEET and those who want to continue after MBBS to do family medicine need not give the NEET exam. They do a three year course of rotation in the same college in Gynae, pediatrics and ENT and they get a degree of family medicine. They don't have to give NEET. So, all those who don't get through NEET, just say that I would like to continue in the same college, spend three more years but get rotated and give them a... and they become GP. You will get training also and it is something which is beyond the...

**Vinod Paul:**

Continue in dual degree. The original NEET gives you this pathway by default. By the way Dr Sarin BoG has suggested something almost like this. Of you read their rocket model and where they had visualized that MBBS moves into family medicine, that is a default mode. And you do MD into subjects, you do PhD and you do one more thing. Public health side. You are part of that committee, I think. So, yeah, lets ignite discussion around that. Policy is about new ideas, thinking. We are there to be catalysts. Everyone has to do their part.

**Audience:**

I wonder if on the DNB side while somebody is also doing an MBBS, because ultimately DNB in the industry side is very far away from academia. Some sort of an orientation, maybe a couple of weeks or months, I don't know what the time duration is. Because ultimately you need at an MBBS level visibility into upstream in terms of how the professional development opportunities are. And nothing like spending some time on the real in the industry platforms and hospitals and getting some sort of counselling from industry in terms of possible career choice. Some thing we can discuss, but it is a very interesting idea. Going to academics is easy. But going to the industry is a far, far cry. It is not easy.

**Sandhya Venkateswaran:**

Obviously, we have just... it is not even the tip of the iceberg. It is the tip of the tip of the iceberg that what we tried to do. And then you Dr Paul and also the other panelists for culling out what is essential from what we presented and then expanding it to identify many, many other issues and putting some level of priority. Clearly there is a lot of work to be done. But I just want to say thank you so much, for your time and all of your thinking. Amrita is going to have the last word on the key takeaways from them. Then I would request you all to join us for lunch.

**Amrita Agarwal:**

Thank you, Sandhya. So, I am just going to try and summarize what are the key takeaways almost (internal discussion among panelists) ... just on the exciting ideas. Six big exciting ideas which I think I am taking away from this conversation. One is the whole private hospital and how can they really engage especially on specialists and including family medicine. Which is how do we really engage...

**Vinod Paul:**

Sorry to interrupt. It is a two action point. We have not been able to find out. Sir said that we will give them loans, we will give VGF, it also has opex up to 80%. Why people are not coming forward? You got schemes created from us. But nobody is taking it. How many years have passed? He has been facilitating it and then 4 came. This scheme is 4 or 5 years old.

**Alok Kumar:**

Private medical colleges treat patients as cost centers. And students as revenue centers. These guys treat patients as revenue center and students as cost center. That is the problem. That is the point.

**(Unclear audio from audience)**

**Amrita Agarwal:**

This is a follow up discussion. But this is one...

**Vinod Paul:**

You have the potential to do ten times the numbers that you are doing. That's it. You have to come forward on that. Please let me speak. Listen carefully. There is a particular network of hospitals. No names. 10000 beds. 60 odd hospitals. They have 800 seats. When you sit down and find out number of consultants, number of beds, they have a capacity to do 3000 for India.

Leave 3000, at least 2000. Or at least double. Doesn't happen. That is the problem. They don't come forward. What do you need? Two consultants and 20 beds to \_ two seats every year. There are limitations I understand on both sides. In this you can have the states intervening. You can give some incentives. There is no doubt. The post graduate specialists will increase in good speed. Expectations are high. The income will increase. We are aiming at 10 times increase by 2047. The demand will increase tremendously. At that time where we will go for them? You cannot bring from outside. The treasure is lying in the private hospitals to contribute to DNB and to an extent in the government hospitals within district hospital system and beyond. The beyonds are army, they can contribute 300 seats. ESI 300. All India 100s. like that if you think, municipalities, maybe a few thousand seats. We have to connect it. Tell us what you want and what we need to do. We will do it.

**Amrita Agarwal:**

Absolutely this is an extremely important action agenda going forward. The second one is really this whole thing about quality. And cost and supply. How do we find a tipping point and that is a good articulation Dr Paul? What is the tipping point and how do you look at innovation, how do we look at that and technology to really enhance quality and cost so it doesn't become a tradeoff, which is where we are stuck right now? That is a second big agenda. (Unclear response) okay. Interesting. The third one is really the whole incentives for teachers especially. How do we really think about what will motivate and incentivize teachers really across government and private sector? It is not only about relaxation of norms but also incentivization. The fourth one is also on local and state capacity and ability to partner engage with the government... governance and the private sector and the local government colleges. So, the local state capacity and regulation ability, strengthening of that and what does this really mean. While there is NMC which is providing the guard rails, what is the local state capacity to engage with the local conditions. Fifth one is research but less commercialization to the point you were saying. We have to and this is linked to quality. How do we enhance research, evidence based thinking and how do we link it to commercialization which would make the whole medical education even more vibrant which is something which has been seen in Israel and other countries? And the last one I am taking away is, there is so many questions which we have. Where is the data? We have piecemeal data, each of us is discussing, we are putting together what we observe, our experiences, our small facts. But I think there is much more need for data, evidence around all of this. So, this is common knowledge for everybody. Right now, everybody has a different piece of the puzzle. How do we really put a common piece to the puzzle and this is really a public good which government and non-profit in fact should come together to provide.

**Sandhya Venkateswaran:**

So, on that note thank you all so much and may I request all of you to join us for lunch which is just outside.