FGD 2 - 20240307

Interviewer: As a pediatrician what are the major problems that you face in newborn children?
Participant 7: Immediately after birth most of the time or about 10% of the babies will be birth asphyxia cases, meconium aspiration and most of the cases will be of transient arrhythmias. And on the 2nd or 3rd day usually we get septicemia cases. Which is common and hypoglycemia nowadays we get post cesarean infection and mother having pain in the abdomen. These are routine common cases we carry out. Especially we are more concerned with birth asphyxia cases.
Interviewer: So, the basic problem according to you is birth asphyxia?
Participant 6: Yes, birth asphyxia.
Interviewer: As a pediatrician, how much do you feel that it has got impact in the community about the birth asphyxia?
Participant 7: It is very, very bad effect. If we don't attend the birth asphyxia within the 'golden minute', if the baby doesn't cry with in the golden minute, the baby will become a lifeless and to the family as a cerebral Palsy child and the baby will not have a future and even the parents also will suffer, not only the baby even the parents with suffer and it will be a burden to the community also. This is if we don't attend the birth asphyxia within the 'golden minute'. So birth asphyxia has a very bad impact on the whole community and to the country.
Interviewer: You tell me No. 6 you have worked for 30 years. According to you, what were the challenges regarding birth asphyxia? Over the last 31 years how you have been facing that problem, how it was earlier, how it is now. Can you tell me about it to me?
Participant 6: Earlier conditions were worse. Now there is improvement. In that, now there are more hospital deliveries. Earlier home delivery is used to be more. Where trained dais used to conduct the deliveries. If birth asphyxia happens at the time of home deliveries, they were unaware of what to do for that. But still according to them they used to tap the feet of the babies and batting the back of the baby and by doing that they used to make the baby cry after 5 minutes instead of 1 minute, otherwise they used to make arrangements of a vehicle and used to refer the baby to hospitals. I have seen many situations like this. But now hospital deliveries have increased and gradually the birth asphyxia cases are coming down. But still we see at least one birth asphyxia baby in 10 deliveries. I have seen such cases occurring in PHC, CHC and general hospital and district hospitals. Now the higher risk pregnancies are identified well in advance and are taken for cesarean section. And in PHC CHC if the delivery is identified as difficult they are referred to here for delivery. Here also there use to be birth asphyxia cases after normal deliveries. Now there is some improvement.
Interviewer: According to you, it is the nursing staffs who conduct delivery in PHCs and CHCs. What do the nursing staffs feel about the knowledge and skill about that? How it used to be earlier and how it is now?
Participant 6: There is a lot of improvement. There are so many trainings like Dakshata training, SBA (Skilled Birth Attendant) training in the government setup. Since there are repeated trainings there is constant improvement. Now they do early diagnosis and if it is not possible for them they refer the delivering woman.
Interviewer: No. 5 according to you, what were the problems, how were they earlier, how are they now, what is the level of knowledge, is there improvement in the skill of resuscitation, what do you feel about all that?

Participant 5: The trainings are being given by the government and also on behalf of KLE about the birth asphyxia immediately after delivery. There the knowledge of all the staff has improved. And all the staff nurses are trying to resuscitate the baby within the 'golden minute'.
Interviewer: What was the difficulty for all of you? 16 years back when you joined the service? Did you feel any difficulty at that time? Number 6 tell me.
Participant 6: Yes, there were problems; there were no warmers in the PHC and CHCs. The instruments like Ambu bag and other things were not supplied correctly. Now they have all been supplied, and we are being trained also. Now we are taking the baby immediately to the warmer and placing the Ambu bag on the baby and resuscitating the baby within one minute and making the baby to breathe. Now we have become experts in that.
Interviewer: Participant 5 you were telling something. Any other problems or challenges were there?
Participant 5: The challenge is there since earlier. After delivery because of birth Asphyxia or meconium staining, if the baby did not cry immediately, earlier we did not know what to do. Now we know.
Interviewer: No.4 what were the problems then and how it is now?
Participant 4: There was one study called HBB and under that we were not given the device, we used to do resuscitation but we are not knowing how far effective the resuscitation used to be. We were given all the training, but we were not knowing how correctly we were doing the resuscitation. Now after this AIR device is given to us, it says that we are not doing the resuscitation correctly.
Interviewer: About the resuscitation, what were the barriers, what were the challenges and how much knowledge was there about that and what was the level of skill about that, and whether there was improvement over the period of time in the government sector?
Participants: There is improvement. Because of repeated trainings, we get more knowledge about it, when we joined the service, we were not knowing about it. We knew that the baby should cry within the golden minute. But what we used to do was we used to try by giving oxygen and doing bag and mask ventilation. There were no Ambu bag available when I joined the service, only we used to take the baby to higher hospital and used to admit the baby. We were not having much knowledge about what to do if the baby did not cry. Only after giving repeated trainings to us that knowledge is improved with us. Now we have the confidence that we can handle this situation when the delivery occurs in our hospital.
Interviewer: Now No. 3 tell me, over a period of time as per your experience, what were the challenges and problems earlier and now? How has your knowledge improved or whether it is still less? What is your feeling?
Participants 3: The knowledge is improved now, after getting the training. Earlier if there was birth asphyxia or meconium stained and those babies did not cry within the 'golden minute'. We used to try by holding the baby with legs up and patting on the back.
Interviewer: What all you use to do by lifting the baby legs up?
Participant 3: We used to refer only, when we were working in the PHC. Now after I came to the general hospital, we only do resuscitation.
Interviewer: You said that when you were in PHC, you used to refer to the babies. Were there no facilities for resuscitation?
Participant 3: There was a facility, but our thinking was it should be seen by a pediatrician. Earlier we did not have training about resuscitation. Now we have resuscitation training and we are on our own doing the resuscitation.

Interviewer: What you used to do else if the baby did not cry? Earlier
Participant 3: That's all.
Interviewer: No. 2, you tell me what you use to do?
Participant 2: Earlier is something happened to the baby, we had the concept that only a pediatrician should see that baby. But now it is not like that. After we took the training, if something happens to the baby we only handle it, we also have the ability. They have given training to all. Earlier in the PHCs we used to do the batting on the back etc. but we are not doing that now. Now after having the training we have the confidence that we can handle the baby if it does not cry immediately after the birth.
Interviewer: Were there any problems to do resuscitation earlier in the PHC or in the general hospital?
Participant 2: We did not have enough knowledge to handle the baby. Now after getting this training we came to know how to handle the baby.
Interviewer: Were there any training given to you like this in the government setup?
Participant 6: Yes, they used to give training like NBS training, neonatal resuscitation training, skill lab training, etc. separately about this.
Interviewer: When did they start giving you that training?
Participate 6: Since 2012 this training was started to be given under IMNCR training.
Interviewer: No 3 can you tell me something?
Participant 3: Recently a training was given.
Interviewer: No.2?
Participant 2: It is 14 years since I have joined the service. That time we had not received any training. That time I had joined a PHC and I had taken the HBB training there D and in that I had learnt resuscitation before that….
Interviewer: Before 10 years what training you received?
Participant 4: Regularly we used to train some or the other staff. I used to give training that time like NSSK training, SBA training, MNCI training. In that lot of staff nurses, PHC medical officers got benefitted with these trainings within the past six years.
Interviewer: No.1 what is your opinion?
Participant 1: I have got training in NSSk, NBSU and HBB Training and definitely during the last 10 years and skill lab training also….. If the baby has birth asphyxia how to manage it. Before that immediately the after the birth, whether the baby cried or did not cry. We used to do suctioning to all the babies. We used to do mouth suctioning compulsorily. But according to the present concept there is no need to do suctioning to all the babies. We have been told not to do suctioning for a crying baby and to do suctioning only if the baby doesn't cry. That time we had foot operated suction apparatus, if there was no electricity we also used to use mouth sucker. Now there are electrically operated suctioning machines. And now we are using bag and mask for the babies and we know which size of mask to be used for which baby. Earlier we had no knowledge of this, and also we did not have a special tray for that. Now we know which instruments to be kept ready for a baby having birth asphyxia. Ambu bag of proper size, shoulder support, suctioning pipe, suctioning tubes etc… We keep everything ready for use.
Interviewer: How was the instruments facility at that time? No.2 Instruments for resuscitation.
Participant 2: We did not have penguin suckers etc. at that time. Now, after the KLE project came here we have that penguin sucker, Ambu bag and other things were there, but they were not much effective.
Interviewer: What do you No.3 about the instruments?

Participant 3: Now all the instruments are there correctly compared to early. That time we were not having mask, mucous suckers like penguin. Therefore because of fear we were not doing resuscitation to the babies. Now we have the penguin sucker and it has been of use to us.
Interviewer: Tell me No.4 were there all the instruments like warmer etc..?
Participant 4: We were having foot operated suction and we used to do suction with that only. Penguin etc. we're not there at that time. Later on we got the electrical suction machine. But now we are not using that. We are using penguin sucker only. Earlier we did not have penguin sucker.
Interviewer: No. 5?
Participant 5: In our hospital also, earlier there was a foot operated suction machine. After that this penguin sucker was provided by the project.
Participant 6: Earlier a mucous sucker was provided to us which contained a plastic box and two plastic tubes, one pipe was supposed to be kept into the baby's mouth and the other pipe into one pipe and we used to suck the mucous with the help of that apparatus. It was being supplied at that time. After that gradually there were changes. Suction apparatus which was foot operated was supplied. After that there was some more improvement and electrical suction machine was provided. Now the Ambu bag are provided to all the PHCs, CHCs and general hospital.
Interviewer: Were warmer there?
Participant 6: No, there were no warmers. After 2012 we got warmers before that they were not there.
Interviewer: Other things like Ambu bag were there?
Participant 6: Yes, they were there.
Interviewer: Did all the nursing staff used those Ambu bag or were they referring the cases?
Participant 6: They were not much expert to use them. Where there were doctors who used to give support, there the staff nurses were using them. Otherwise they used to refer the baby to pediatricians.
Interviewer: I will come back to No.1 participant. Now for the last 8-9 months you have started using the AIR device. Did this AIR device helped you to overcome all the hurdles or the challenges which were there earlier?
Participant 1: Before the AIR device arrived we were not knowing whether we were doing the resuscitation effectively or not. There used to be leakage, how much pressure we were applying was not known to us. Our only objective was to make the baby cry as early as possible. We did not know whether we were doing bag and mask forcefully or whether the air was going into or not, we were not looking into that. We used to do bag and mask only when we were trying to make the baby cry. Now, after AIR device came to our hospital, we have the knowledge how much efficiently we are doing the bag and mask ventilation, how much pressure we are applying to the baby and if the baby doesn't cry how long we need to continue the bag and mask ventilation and in middle we need to make the mouth clean and if doesn't succeed again we need to start the suction. Like that everything has been explained to us.
Interviewer: Do you feel that the challenges which were there earlier have come down? After you have been trained?
Participant1: Yes, they have come down.
Interviewer: No.2 what is your opinion?
Participant 2: Earlier there was no time limit. We were just doing it continuously. Now, after the AIR device has come to us, we have to do resuscitate after making the mouth wide open, we need to see the chest rising, they were there earlier also, But now we are doing all those steps effectively according to the time, it is more effective than that.

Interviewer: What do you say No.3?
Participant 3: This AIR device informs us in how much time we are doing effective resuscitation. The AIR device has helped us in assessing the pressure, air leakage and position and all that.
Interviewer: What do you say No.4?
Participant 4: With the help of AIR device, we know how quickly we are starting the resuscitation and how effectively we are giving ventilation to the baby. Earlier we used to do bag and mask ventilation to the baby without knowing how much effective it was. The device itself tells us whether we are doing the resuscitation correct or whether we are doing any mistake.
Interviewer: Has it helped you to overcome the earlier challenges?
Participant 4: Yes, it has helped us, because it helps us to correct ourselves.
Interviewer: Now you tell No.5.
Participant 5: Earlier, we were not knowing that mistake we were doing while resuscitating. We used to do resuscitation, but we were not knowing how to do it correctly. After we got this device we can know how much correctly we are doing.
Interviewer: Do you feel that your knowledge and skill have improved?
Participant 5: Yes, there is improvement.
Interviewer: No.6 what do you say?
Participant 6: There is a lot of difference between earlier and now. Earlier if the baby did not cry, we used to be under tension. We used to put any Mask in a hurry either zero number or one number so that we had to make the baby cry by any means, and we will not knowing whether we will doing Harsh ventilation or low ventilation, whether there is leakage or blockage. We were not knowing anything. Even though we were resuscitating. We used to think that nobody should see us doing that. Now since we are practicing the resuscitation we know that we should do like this only and only if we do like this it will be effective resuscitation. There is improvement.
Interviewer: What do you say No. 7?
Participant 7: After this a device has come into us, there a few changes in the resuscitation because of practice. One thing is we start looking at the watch. Earlier we just use to do resuscitation continuously, without knowing for how much duration we have to give, when we have to access, and the rhythm, because earlier we used to do just continuously whereas now, after saying 2 3 1, 2 3 1 we are doing it rhythmically. This rhythm is very important, so that the baby has time to get its response in breathing. And one more thing we used to keep the instruments anywhere one used to like to keep them and therefore we had to ask for Ambu bag because it was not easily accessible to us. But since the AIR study has come here with Mannequins we are routinely practicing. With that practice they are used to keep the tray ready always, beside the baby warmer. So that it is quickly and easily accessible. So few things have definitely changed and helped during resuscitation.
Interviewer: Do you mean, with the AIR study, the challenges which were there earlier have been overcome?
Participants 7: Yes.
Interviewer: Because you were the trainer for newborn resuscitation please tell me, what are the things. You told that there are so many training programs being conducted from 2012. But still in spite of that the knowledge and the skill gained by the nursing staff or the other doctors or the medical officers was improved after that training and was it really helpful or not?
Participant 7: What we have observed is, especially those who are working in the general hospitals where there is facility for newborn ICU, SNCU and their pediatricians, definitely they have picked it up. But the staff nurses who are working in the PHCs may have such places. I have

seen they have kept the warmer beside and not using it. After going there, using it is very important. Attending training is different. Some main push is required. Those training will be really helpful when there is nobody to supervise it.
Interviewer: So according to you, there are many training programs which are not being first or monitored?
Participants 7: Because of their facilities, major facilities, because of Hurry, because of the rules of the government they don't want any neonatal deaths to happen. So, they do early referrals.
Interviewer: Sir, early referral is the best key to escape.
Participants 7: Yes.
Interviewer So according to you, the knowledge is not being kept with the
Participants 7: The knowledge they have, but their confidence initially they need to push it and the initial guidance because they get training and come here but "how right we are doing, how correct we are doing" they are not confident.
Interviewer: So
Participant 7: Now recently in a lot of places with admissions have come in CHCs and in general hospitals. Where definitely the staff is under their guidance where….(Not clearly audible).
Interviewer: Ok to you No. 1 earlier you used to get training after training they used to give it as a knowledge or do they use to teach you a skill. Was it retained by you? Or was it growing in you? What used to happen?
Participant 1: There they used to give books and all and used to tell us to read and to understand. There we used to complete the training and after coming here. After coming here we used to go on different type of works, not only delivery work but also to attend other emergency works and we used to go for all the workshops, and we were not reading after that. Now, the people who gave us this AIR device training, they come to us every month. They come every month and check our work, and they call all the staff and used to ask us to do practice and then they used to go. They came to us for 6 months continuously and did repeatedly revision.
Interviewer: According to your saying and what I have understood, in the government they gave you training and leave you.
Participant 1: Yes
Interviewer: But after giving the AIR device training, they did monitoring?
Participant 1: They do monitor.
Interviewer: So which one is better for you?
Participant 1: I feel this is better, because to awaken us and whether you have forgotten, whether we understand the work correctly or not, they come and see us with very much care and they go. They were not sparing us even when we said that we were on duty and busy in other works. They used to tell "we will wait for you, you come, and you come for ten minutes" they used to tell us like this and used to wait for us even though we were very busy. They used to sit quietly and after we became free, they used to make us practice and then they used to go. Now there is a lot of improvement.
Interviewer: You feel there is a lot of improvement ok No.2 what do you feel? You're old, you used to take training and all, then and the now AIR study, what do you feel?
Participant 2: Earlier, they used to give us training and used to support us. They were not reviewing and they were not redoing our knowledge sir. These people came repeatedly and asked us "what are you doing? Whether you are doing or not?" Or they used to call our sir on the phone and used to ask him about who was not doing and our CMO used to call us and used to ask "why

are you not doing?" Therefore, we continuously did the practice and also now and then trainings were also conducted. By this our knowledge also has improved.
Interviewer: Ok what do you say No. 3?
Participant 3: Earlier they used to give training, but they were not doing monitoring and facilities also were not given. We used to take training; they used to say to us "you sit and read and do practice". But it was not like that here practically. Now, now after the training, monitoring is done continuously. This has helped.
Interviewer: So according to you let any training be given, it should be monitored afterwards
Participant 3: Monitoring should be done. The government has not done any monitoring sir, they used to do training, sending and "you go in the field and do the work and do the practice. Like this they used to tell. But here the practice was not happening according to the training we used to take their sir. After this training about the device, they have done continuous monitoring and it has been very, very helpful.
Interviewer: Has been very helpful, what do you say No.4?
Participant 4: Sir, we used to take training and then we used to forget it, because in the PHC, there was less delivery and in that asphyxia babies….
Interviewer: According to you, because there was less delivery you did not have much practice?
Participant 4: Not happening and asphyxia cases used to come once in two months or once in six months and at that time, whatever knowledge we had, we used to forget it, And in the emergency condition what we should do, and if the baby did not cry, we used to go under mental tension and we were not knowing what to do. After that, after the training we were doing daily practice and kept all our things ready. And we have the confidence that anytime if there is an emergency problem we can handle it. And that much knowledge we are having.
Interviewer: No.5 what do you think?
Participant 5: In the government also training are given and they take pre-test and post-test in the training. At that time we used to be fully active. But in KLE if they give training, they do monitoring and in our hospital also our sir used to enquire us as to whether we were doing daily practice or not. And the people who used to come from KLE, they wait till all of our staff come and make us do the practice. Therefore now we have the knowledge.
Interviewer: Now you have the knowledge you feel so. According to you is it good to do monitoring?
Interviewer: In the government, why they were not doing monitoring? Was there any difficulty?
Participant 5: Because…….. (Laughs).
Participant: Government means it is an ocean. To do monitoring at any place if the go one side the other side gets worse. They trained us and they made us perfect and they took test for us and they made us to understand. But at some places it was utilised and at some places it was not being utilized. Because there are less percentage of deliveries in PHC and CHCs whatever we took in the training we could not practice it. But it used to happen in the general hospital and district hospital, the practice. But now in the project only some areas have been involved and you go there only repeatedly and do the monitoring. But in our government set up all the institutions including from the sub-centre to the district hospital all the institutions are involved. Whenever they come for the visit they used to refresh us. Those of us who were knowing used to open our mouths and those who were not knowing used to keep quite (Laughs). But they also, if any training has happened, any programme officer used to come to PHC after the skill lab training and SBA training used to evaluate. It is going on now also. It does not mean that they go to all the places, at few places whenever they had gone they have done refreshing. But yours is about some particular

PHCs and particular staff nurses are selected and therefore you try to make perfect, the particular work and make it perfect and nice and effective and the staff nurses to be trained and to make it useful you have trained us. That is also good.
Interviewer: Sir, why the government is not able to do the monitoring part of, because you are training them, there are multiple programmes and you are training so many times. But monitoring part is they say that is not good
Participant 7: We need monitoring staff for particular these things for every programme we need to see for every staff, monitoring staff. We are short of human resources, that is the main thing, because they are giving very good training inputs are still I like really, if you go through IMC, training, it is very well written, everything is fine and once they studied, I think to become paediatrician or not, Obstetrician or not they can handle everything. But the thing is lack of human resource, which gives feedback about how they are maintaining their training, whether they are applying during the feedback.
Interviewer: Ok, that is the one drawback of government sector, hands on, you mean hands are less. Now you have looked into the AIR device. So please tell me do you like that device? And what you lik
e about it?
Participant 7: The device is excellent and definitely it well brings very good changes in the future. One thing is it gives how effective ventilation we are giving it shows that.
Interviewer: How it shows that?
Participant 7: Actually, whether it is leaking, whether your seal is proper or not and how rhythm is correct or not. You are giving ventilation like in a proper manner like 'breathing two, three, breath two, three or you are going very fast or very harsh, or your pressure is very forceful or you are applying forcefully pressure. So these indicators are there on the screen, so these indicators will help you to either, there is a blockage or properly you are not holding the baby correctly……. (Background noise) you not applying, slightly the neck is not extended……baby is not cleaned (Background noise). So that you can clean them or you can apply little bit more pressure after that, so seal becomes properly you can sealed it. So that all these things which are there, clearly informed to you. This is a very good thing. Nobody tells you the baby doesn't say "ok I am not getting your air, you are pushing very hard, no this device tells that you are pushing very hard or either. Whatever air you are giving is not going because of the blockage, or you are too fast". So this is indicator, definitely it will help. And with this technique, with this help slowly slowly in perfect with that. So with these things, if we continuously practice practice it, initially even I was like leaking so much of trying initially. But last time slowly slowly slowly it was improving. So any how we are doing it with concealed thing, but after getting the data we are concealing this thing the indicator.
Interviewer: So you also felt that somewhere your techniques are a bit not up to the mark
Participant 2: Yes, yes you will not be ok. After doing so many resuscitations, even we have not applied proper sealing. So, nobody was there to tell. Now this device is telling. Now somebody is there to correct you. And this device definitely it is a game changer.
Interviewer: Ok you like that much about the AIR device. It is a new arm. What do you like about the AIR device? And why do you like it?
Participant 6: It is good, good. It shows us immediately what mistake we are doing, whether we have placed the mask correctly to the baby or not, whether there is a leakage or not, whether there is slow ventilation or harsh ventilation, how much blockage is there. If we do any mistake, we can

make out immediately and with that and having the intention of doing it correctly and doing it correctly, it would be great for the baby, and we also get trained.
Interviewer: It is your feeling.
Participant 6: Yes
Interviewer: No.5 what do you feel? What do you like in that AIR device? What is good in that?
Participant 5: When we are working, that should be someone to say whether we are doing right or wrong. When we are practicing it is not possible for anybody to come daily and tell us. That is told to us by the AIR device.
Interviewer: It says the same opinion of you
Participant 5: Yes
Interviewer: No. 4
Participant 4: It says how immediately we start. And how harsh ventilation, we need to slow down, all that it tells us. Accordingly, it helps us to improve ourselves.
Interviewer: Yes
Participant 4: And there is the seal of the device, we put the seal but we were not knowing how effective that seal was. If we make a mistake in the seal, it immediately gives us a sign. Therefore we improve ourselves.
Interviewer: So it shows you whether you are doing correctly or not?
Participant 4: Yes, it shows.
Interviewer: That you like
Participant 4: Yes sir
Interviewer: What else did you like in that?
Participant 4: It helps us to improve.
Interviewer: Ok, No. 3 what do you liked about the device?
Participant 3: Earlier we were afraid of doing the resuscitation. Now with this device by doing daily practice we are shown where we are doing faults that I like most.
Interviewer: What else did you like in that?
Participant 3: ...……is good (speaks in very low volume, not clear)
Interviewer: In all your opinion. All of you have agreed with that device. It tells you about how you are resuscitating, how there is a leak, what all there is to be monitored, that itself used to tell you. Do all of you agree to that?
All participants: Yes.
Interviewer: Apart from this, what was there in it with you like you tell number 2?
Participant 2: We used to do ventilation earlier, but time was not that much important. It was not like this much had to be done within that time. Within that time whether we are doing harsh ventilation, and other mistakes we do, we come to know with this device now.
Interviewer: No.1 what do you think? What do you like while doing?
Participant 1: While doing if there is leakage and if we do not come to know exactly what is wrong, it shows a red mark, immediately we come to know it. And again, if we do it by repositioning it will be ok.
Interviewer: You all mean that it has helped you to improve your skills? Correct, no? Now you ladies, you know better which color dress is good for you. Similarly, do you feel anything about its color? How is the device to look at? Immediately after you look at it is there anything you like or disliked?
Participant 3: Nothing
Interviewer: You tell me like as well as dislike.

Participant 3: In that three color since it is black when we are not doing it correctly, the red color appears to us prominently. And when we are doing it correctly the green color is shown correctly in that black color. That one I liked. About the dislike, when we are doing it by holding it, it feels this comfort to us.
Interviewer: Discomfort, what else?
Participant 3: I feel it heavy, while doing. It has to be held either to left side or to the right side. And it is not possible to hold in front of the body because we cannot see the chest rise of the baby. And because of weight, while using a different mask it used to become loose. Sometimes and again we need to fix it fit and do it again, that was we felt a little discomfort for us.
Interviewer: No.2 what did you like, look wise or to handle it, anything you disliked in that?
Participant 2: If it comes red, it means danger sign it means you need to improve your skills. If it comes green, it means you are doing ventilation correctly, that is not a problem. While operating the AIR device, we feel it is a bit heavy. That is all, nothing else.
Interviewer: Nothing else you disliked in that No. 3.
Participant 3: Same things.
Interviewer: Same things?
Participant 3: It seems heavy, colors are all good. The weight has to be a little less.
Participants 6: It can be carried easily. I feel nothing wrong in it. The sign board is correct and because of that. It tells us all the signs. That I liked in it.
Interviewer: What do you feel No.5?
Participant 5: Initially it was a little difficult to do. After that as we went on practicing it became easy.
Interviewer: Are there anything you disliked in that?
Participant 5: Nothing.
Interviewer: No. 6?
Participant 6: When it comes green, we feel that we are doing it correct. And when it comes red it identifies that we have done mistake somewhere. All these days we have done it on the mannequin. After this when we do it on the baby what will happen, we need to see only thing we should get used to it.
Interviewer: You should get used to it?
Participant 6: Yes, get used to it.
Interviewer: Sir, what do you feel? What do you dislike in the device?
Participant 7: It is a little very heavy. It is longer; we can make it in a compact, smaller in size and lighter in weight. So, it will be very useful. Otherwise, functioning wise it is very helpful. Functionally and for what purpose we are using it, it is used for a very good purpose. But because of its heaviness and its length and other things, now technology is very good, we can reduce the weight. That is the only reason.
Interviewer: Ok now all of you said about the dislikes. What changes you would like to be made in the device, can you tell me? Number 6 what changes if done it will be good? Like what sir told just now, the length should be reduced a little and if the weight is reduced a little it will be very good. Similarly, what suggestions you would like to make?
Participant 6: Weight should be reduced and length should be reduced, automatically if it is reduced showing this we will be doing it under tension and accidentally when we are using it, it has to be done on the baby, till now we have used it on the mannequins, that time we did not feel anything if we have to do it on the baby we have to do it carefully. Therefore, if it's weight and length is reduced it would be very good.

Interviewer: Ok do all of you agree to this? Weight is more, length is more, and it has to be reduced. Do you all agree?
All participants: Yes
In chorus
Interviewer: Apart from this would you like to say to change anything else? No.5?
Participant 5: No
Interviewer: No other changes needed No. 4?
Participant 4: None
Interviewer: No. 3?
Participant 3: Nothing.
Interviewer: No. two
Participant 2: No
Participant 7: I just one thing, we have got a lot of technology nowadays. So that instead of signals, I think the device can speak, the device can speak…….
Interviewer: You mean verbal signs?
Participant 7: Like 'your seal is loose, correct it", "you are too fast, correct it", "you are too harsh, so you correct it". Voice uses that thing.
Interviewer: Do you all agree to it?
All participants: Yes (all laugh).
In chorus
Interviewer: Sir, any other suggestions, and any changes you want in the device?
Participant 7: This is one thing I want is a few things.
Interviewer: Ok all of you agree to it.
All participants: Yes
Interviewer: Ok done. Good any other suggestions are there to make changes in the device? You can think, you all use and tell like "if this change is made it would be better" anything like that are there?
(No response from anyone)
Interviewer: After this AIR device training was given, did you face any challenges to use it? To use the device, after the training, to use the AIR device on the mannequin, did you feel any challenges?
Participant: (in audible)
Interviewer: What did you feel?
Participant 2: To try it on the mannequin?
Interviewer: We give you the AIR device, the mannequin and training. After that you start using it on the mannequin with beeping mobiles and all. To use it initially did you face any challenges? Or did you have challenges afterward? Or did you start it doing correctly from the beginning itself?
Participant 1: We did not start using correctly from the beginning……case was improving, we were not applying correct pressure, we used to apply pressure forcefully, we were speaking…. speaking. While telling the numbering, we used to have tension. Timing, timer used to be given and to do resuscitation looking at the timer we use to have tension. Used to do while looking at the timer. For one month it was trouble for us. After that we started doing it perfectly.
Interviewer: Ok No. 2 did you feel anything at the beginning, any challenges or did you face any other problems and how did you solve them?
Participant 2: We used to get red and green signals. Our concentration was we will do it correct, if it came red he used to feel "Ayyo….!, we are doing wrong" and our attention used to go towards

that. If it came green, we used to think that "we are doing correctly". Like this it used to go. And there was no problem. After that we used to do it effectively and gradually day by day we started doing it correctly with the timer.
Interviewer: So initially it use the machine you had difficulty
Participant 2: Yes, a bit difficult.
Interviewer: What difficulty you faced?
Participant 2: Same sir, red and used to come no, sir and we used to think that we were doing wrong, if it came red. How should we make it correct? We used to think like this. After we practiced, gradually the green signal started to come, and we thought that we have improved.
Interviewer: No. 3?
Participant 3: Initially the device was given to us with a cover on it. It was not showing how we were doing. At that time, they used to come weekly and used to give us our results. Looking at those results I used to think that the other results are good and my results are not good and I used to think myself that I am not doing the practice correctly. Then I started doing practice continuously and I got myself improved. Afterwards when they removed the cover and it started showing the colour codes, from that time we started doing the practice looking at those colours. To see whether we were doing it effectively or not, whether there is leakage, harsh ventilation, all that we came to understand. As we came to understand these things our concentrations was turned towards the machine with setting the time and do it within 2 minutes and I used to think I may not be able to complete it within 2 minutes. And afterwards by practicing repeatedly daily I learnt to do it. By doing practice I have got improvement. And we had a fear to do it on the baby but now I have saved 3-4 baby's by doing it on the babies and I am happy about that, and the parents of those babies came to me and appreciated my work.
Interview: Can you tell me any such of your experience? What happened and how it happened? You said you saved some babies.
Participant 3: Preterm sir it was a preterm baby, and it was meconium stained. It had both asphyxia here and was not crying. As I had done repeatedly AIR device, I did this resuscitation of the baby correctly and I made the baby cry. And for pediatricians the option sent the baby to a pediatrician. After 2 days the baby was discharge and they came and meet me.
Interviewer: So, you had confidence?
Participant 3: Yes, I had confidence.
Interviewer: Do you feel that you have improved your skills?
Participant 3: Yes, our skills have improved on the device.
Interviewer: What do you feel that you have done good to the baby?
Participant 3: Yes, I feel so.
Interviewer: Are you happy with that?
Participant 3: Yes, I am happy sir.
Interviewer: No. 4 to use that device on the mannequins did you have any challenges?
Participant 4: Initially we used to be afraid to make the seal. If that mask was light weighted it was not making a proper seal. After repeated practice only I was able to make proper seals and it was easy to hold it.
Interviewer: So initial you had difficulty in fixing or holding it correctly?
Participant 4: To fix it and to seal it was difficulty for me. Because the mask was lightweight it was not possible to make proper seal. After doing a lot of practice I could make a proper seal with it.
Interviewer: No. 5 what challenges were for you initially?

Participant 5: First time there was difficulty for me to do it. There used to be leakage when I used to do it. On some days I used to do practice 2-3 times to become perfect in doing it.
Interviewer: Then you became perfect. So, number 6 what did you feel?
Participant 6: First time it did not work in the right way for the first one month I could not get adjusted to it.
Interviewer: Why did you feel so?
Participant 6: While holding, while positioning and timer mobile, I used to get confused to handle all those and because of that the ventilation did not go correctly. One time it used to come green, one time it used to come red, one time it used to show orange color. Like this it used to happen. Then after repeated practice we did and because of that with the device that effective ventilation started by me.
Interviewer: Started so sir, did you have any challenge in the beginning? You might have seen some of the nursing staff doing mistakes
Participant 7: Initially there were challenges with the staff nurses. In connecting the device and how to initiate and like how to initiate sometimes immediately after connecting the device, the device immediately failed to start. Initially to start it was a little bit difficult. And sometimes the mannequins, water used to be less in it. If the mannequins is very much in floated, ventilation was coming very smoothly, and if there was any looseness in this thing, the sealing was not proper, the air and the……(unclear) was not fully the seal was not getting proper, there was showing blockage. So, what happened, different in time. Slowly it was ok changed the water in the mannequins and slowly we used to get to the software. Initially few days I also got confused with the software.
Interviewer: In the initial phase everybody has this problem of one is software, connection, mannequin these are the basic challenges what you felt did you all face these?
All participants: Yes, they have happened.
Interviewer: Now I will ask number 1 you learn about this AIR device; our people come and give you training. After getting the training, did it seemed easy to learn and use it? Or did you feel it difficult? What did you feel?
Participant 1: In the starting we felt it difficult. Sometimes it was not attaching easily and not easily connected. As we went on practicing it became easy.
Interviewer: After practicing on this AIR device can all people learn it?
Participant 1: Can learn.
Interviewer: You mean all nursing staff, or the doctors can practice?
Participate 1: Yes, they can.
Interviewer: No. 2 what do you think?
Participant 2: In the beginning, I had a problem. We had not much knowledge about it and no brief training. Gradually day by day, with practice on the mannequin going we got the improvement.
Interviewer: Do you feel that everybody can practice it?
All participants: Yes
Interviewer: Is there any difficulty in learning it?
Participant 2: No sir
Interviewer: Do you agree with number 1?
Participant 1: Yes.
Interviewer: All of you, do you agree?
All participants: Yes
Interviewer: You think it is easy to learn what do you feel No. 3?

Participant 3 It has helped to learn. All can learn it.
Interviewer: What do you say No.4?
Participant 4: All can learn it. It is very helpful.
Interviewer: Is it helpful, you don't feel any changes?
Participant 4: Initially there used to be a problem. As we went on practicing there is improvement.
Interviewer: No.5?
Participant 5: In the beginning there were problems but by doing daily practice they were all solved.
Interviewer: No. 6?
Participant 6: If all are trained, it is good, for those who are in the setup.
Interviewer: Is it easy to learn?
Participant 6: It is easy.
Participants 7: It is very easy to learn. If you show them how to do this they can learn this very fast.
Interviewer: So 'D' group person also can learn this.
Participant 7: They can support because we need supports, during resuscitation we call for help, during that time, we need, and even they can do this.
Interviewer: Sir, according to you, once you train this, how long you can expect us to train this for and how long we need to have very vigilant monitoring till they get accustomed.
Participant 7: Every day they do I feel for 15 days to 2 months and regularly, even after if they are interested by reflex, they can do that, like we learnt during our PG course 2 years, 3 years. So during that time what we have learnt, immediately after seeing the baby that reflex will teach you that is there in us, that reflex will come automatically how to do it. Nobody can stop that. If they regularly do that for 3 or 4 months.
Interviewer: So how long you think the training should be.
Participants 7: Minimum three to six months.
Interviewer: Monitoring for 3-6 months tell me about training, the initial training.
Participant 7: Initial training in terms of days or months?
Interviewer: Days, days.
Participant 7: Days… like anyhow they are doing individually at the centers, but very important role is this….
Interviewer: What do you feel, the staff nurses, for how many days the training should be? No.1 we gave this training no, for how many days the training should be and for how many days the monitoring should be? I mean, vigilantly they say monitoring, no? like that.
Participant 1: Training two days or 2 - 3 days is enough and monitoring for one month to one and half month is enough.
Interviewer: What do you say number 2?
Participant 2: It should be 4-5 days for it to be effective monitoring continuously.
Interviewer: For how many months to be done?
Participant 2: 2-3 months.
Interviewer: No. 3?
Participants 3: To learn, we can learn in 2-3 days. Monitoring for 3 months we need. 1 month goes for us to learn.
Interviewer: So according to you after 3 months there should be vigilant monitoring. What do you say No.4?

Participant 4: To learn we need four days and 6 months for monitoring. If it is done like that it would be fine.
Interviewer: Ok what do you say No. 5?
Participants: 3-4 days are required for training. Monitoring for six months.
Interviewer: You need monitoring for six months, and then there will be improvement according to you.
Interviewer: No.6?
Participant 6: 2-3 days training should be there. Monitoring for at least 3 months is needed.
Interviewer: So according to sir, at least for 2-3 months there should be monitoring, that is what you feel, is it not?
All participants: Yes
Interviewer: Ok No.3 told that you saved 4 babies is it correct?
Participant 3: Yes
Interviewer: So did you feel that the AIR device has improved your skill?
Participant 3: Yes, it has improved.
Interviewer: Do you think the confidence, skill and knowledge, all three have improved?
Participant 3: Have improved. Earlier we will not be doing with confidence. Now I am doing with confidence and earlier I was not knowing whether the resuscitation which we used to do was effective or not. Now I can know whether I am doing it effectively or not.
Interviewer: So the way you are doing what we call it as skill has it improved?
Participant 3: Yes, it has improved.
Interviewer: What do you feel about your confidence?
Participant 3: (No response for 3 seconds)
Interviewer: are you confident or still……!!!!
Participant 3: I am
Interviewer: What do you say in No. 2? About AIR divide
Participant 2: There is confidence. Earlier we used to do on the mannequins. Now you are doing it on the baby. Baby's also we have improved. We did earlier referral and the babies have improved. It is very effective. There is improvement. Knowledge has improved. No adverse event happened.
Interviewer: So, what do you think No.1?
Participant 1: I have done bag and mask ventilation and made many birth Asphyxia babies to cry. Whether the doctor is there or not at that time, even though the baby was asphyxiated I can save the baby. And I have that confidence.
Interviewer: Do you feel that your resuscitation skills have improved?
Participant 1: I feel so.
Interviewer: Can you tell any examples? That has happened with in recent months?
Participant 1: One breech delivery had occurred. Bridge presentation and full dilatation was there. If she had come early, we could have done the caesarian section. But she came with full dilatation. The baby had breech presentation and the head was stuck. After the delivery the baby didn't cry. The face had become bluish. We did back and mass ventilation and the baby cried. Even though the baby cried we referred it because the pediatrician was not available at our hospital. We made the baby cry and put the I.V. live and referred it. Now the baby is fine.
Interviewer: Sir one more thing you talked about using the AIR device initial when you started doing, there was some kind of heave. So, did you feel that after doing so many years of pediatric practice, this is what you are missing?

Participants 7: Definitely there is a change.
Interviewer: And after the AIR device, do you think that your skills and confidence level have improved?
Participants 7: Yes, improved because there was nobody to tell us. It is not that we were perfect this device shows "who you are and what you are up to" and definitely the indicator will tell you where you are wrong. And this definitely helped in resuscitation.
Do you think that…….
Participant 7: (Background noice behind for 10 seconds answer unclear) even by and mask ventilation may be required, the same rhythm, the staff and with intubation, after intubation we used to refer the patient. But even though, half an hour also we used to do back and mass ventilation. But after this you got conscious in the mind that ok, technician proper, sealing is there or not, ventilation very harsh, initially you are holding this..push..push.
Interviewer: Very harsh.
Participant 7: And chest movement you do it may happen on one side or two sides. But this definitely, it gives positive effective resuscitation (background people of in loudly continuously)
So as a pediatrician you also felt that your skills were not that good and not up to the mark now it has improved
Participants 7: Yes, overconfidence, but the device shows that ok you have not done thing…… (Unclear) so we have to be student for that.
Interviewer: That is true.
Participant 7: I can't say that I know. But the device shows "yes, you should correct yourself".
Interviewer: No. 6 what do you think? Your resuscitation on this AIR devices do you feel any changes now? Weather your confidence raised?
Participant 6: I have confidence, and I have skill also. Compared to earlier now there is much improvement.
Interviewer: Is there any example of you having saved any baby?
Participants 6: Nothing such event has happened.
Interviewer: of such case comes, do you have the confidence that you can save the baby?
Participant 6: Yes, the confidence has come.
Interviewer: not only about you
Participant 6: For all staff. We have taken seven members here. Along with that we are teaching this to those who are taken additionally saying "do this, do this device" they can do.
Participant 7: Not only the included staff, but other staff also used to come in there with the device like other staff who were posted during their absence, they used to do it.
Interviewer: Ok
Participants: Without knowing the technique even though, to see doing it because that was a kind of fun, they used to practice.
Interviewer: Also, all the nursing staff and remaining D class also? No.5 what do you say?
Participant 5: All staff had complaints, and our knowledge also is improved. There were two or three problems from other staff on duty. But we have saved the babies.
Interviewer: No. 4?
Participant 4: In our place on Tuesday there was a primi delivery and the baby had asphyxia. Then we did bag and mask and all….. Within 5 minutes we made the baby cry and today the baby is discharged, and the baby went home.
Interviewer: Is the baby fine?
Participant 4: Yes, the baby is fine.

Interviewer: to give the resuscitation how do you feel about your confidence now? Compared to earlier?
Participant 4: Confidence is there. 3 months back a similar incident happened. We had done bag and mask to the baby and had referred it. It was kept in the NICU for 8 days and after that the baby was discharged. It is fine. Yesterday, on Tuesday also had a similar case, sir,,,,, Crying was good, feeding was given, we observed it here only by keeping it here only. Then we discharge it.
Interviewer: So your confidence has improved. Tell me one more thing. Now 6 number told not only you, those who were not in the study, they have also practiced. Do you feel that by the coming of this device in your facility, do the resuscitation skills in your facility have improved?
Participant 6: Yes, improved
Interviewer: And did the performance of your facility have improved? In terms of number or of referrals, number of deaths, are there any improvements?
Participant 6: Have referrals have come down, deaths,,,,,, no deaths at all. Referrals once in a while, one or two in a month. That too if the sir says so. Otherwise, we the staff nurse and sir will manage here only. It has helped.
Interviewer: So, what do you think sir, for being a main pediatrician for so much of thick population with more than 100 deliveries per month, do you think after getting this device to your institute or your hospital does it has improved or impacted over the outcome of the newborn babies?
Participant 7: Yes, definitely sir, actually newborn baby first of all in general hospital have these are very less birth asphyxia cases again because of trained staff nurses getting a lot of training and whatever resuscitation they have done till now, individually they have done it. Even before this AIR device they used to call me every time. Now the calling has stopped. They are doing it by themselves confidently. Whatever the birth asphyxia cases and afterwards they say that "sir it was a birth Asphyxia, we did bag and mask ventilation the baby has cried and no problem" otherwise day immediately used to call me. Now the call is not coming. After stabilizing the baby they call. So this is what has changed. Definitely it has improved.
Interviewer: Do you think, because of that the outcomes the baby outcomes
Participate 7: At our place, referrals have come down nowadays during night Times, especially if I am not there. Any not crying baby used to be referred to the local pediatrician. That has also come down. They resuscitate by themselves, and they get call me and they admit the baby for observation. If anything, get deteriorated we keep it for another day and in the morning we see it and monitor here. Definitely it has come down.
Interviewer: So overall performance of this institute has improved?
Participant 7: Yes, yes
Interviewer: No. 5 you are working in a community health center. What do you feel? In your community health center, those who are working have improved their resuscitation skill and outcome of the baby. What do we say about the death of the babies, or the problem of the babies have they come down? What do you feel?
Participant 5: Come down sir, any problem, to face we used to be afraid because of the absence of the pediatrician. Now we are doing as far as possible ourselves. We call the sir also. By the time the sir comes we would have managed whatever was possible from us and whatever was to be done. Almost there are no deaths.
Interviewer: So, No. 3 what do you feel?
Participant 4: In our place, 3 months back a case was referred. After that yesterday one case happened. No other cases have happened. In us also there is improvement.

Interviewer: So, you feel that with the coming of the device there is improvement in your performance.
Participant 4: Yes, I think so.
Interviewer: You tell No. 3
Participant 3: With the coming of the device there is improvement in performance. Earlier we used to refer. Now especially there is no referral and there is no death. Even though there is no pediatrician we are handling ourselves. Only for opinion we called the pediatrician…… (Unclear)
Interviewer: No. 2: What do you feel?
Participant 2: There is improvement sir, there is no pediatrician in our place, only for opinion we call pediatrician. Other things there is no deaths so far.
Interviewer: no one has happened, do you feel that within the past 5-6 months there is improvement
Participant 3: It has improved.
Interviewer: No. 1 what do you say?
Participant 1: Since we have done practice, it has improved. Earlier nobody was knowing. Only those who had taken training, they only had this knowledge. If there was any birth Asphyxia all the staff especially the junior staff used to get panicked and used to tell "call senior staff, call staff nurses" like that we used to run and do bag and mask. Now since all have practiced there is improvement. All have started doing bag and mask and make the baby cry. Otherwise, they do re-trial.
Interviewer: Sir, now the most important aspect of this study. We are doing all this because we want to implement it in the National program, or it should be implemented throughout India. That is the overall objective. So, if you want to train, implement and see that if is done effectively throughout the country on a large scale, what are the different barriers you see and how to face them and how to work it out? Or to implement this device, throughout Karnataka? Or India
Participant 7: In real time?
Interviewer: Yes, in real time.
Participants 7: To the baby? In resuscitation?
Interviewer: To the baby.
Participants 7: In real time, the challenges will be, first of all we need to have good trainers. If they are trained it is different. After training, they are going directly to the labour room. The baby is not crying, the challenges with this thing will come, is keeping the device inside the labour room or outside the labour room when you will get ready when you will set up the software and when you will get ready with the device, weather before the baby is getting born or after the baby has not cried. So, this is very important. Every day you have to keep ready the device running or for high-risk delivery you have to keep the device ready or after that, because it will take time you will have to record the time and keep the device hygienic.
Interviewer: Yeh…… what else you would like to add to this.
Participant 7: Keeping the device hygienic. That challenge will come in the setup, because Ambu bag and all you can keep or you can go for auto cleaning, but this device how to clean it? You have to come with the solution clean the device after every resuscitation because of handling sometimes babys meconium or sometimes liquor will be, you know you have to handle the device, so after resuscitation how you have to make the device clean and how to keep it. I think these two challenges will come. When you are ready the device when you are going to be ready or for each and every delivery you are going to keep the device ready. So that we are expecting, we don't know

what is happening inside. Sometimes FHS will be fine, but the baby doesn't not cry. It happens many times. It shows that there is stress and sometimes baby cries. It depends, so when you will keep the device ready for the resuscitation and one thing is keeping it hygienic.
Interviewer: And how about training to the whole or large region? Any barriers?
Participant 7: No barriers will come I think because the device is very handy and very easy to understand and it is indicated and it is a verbal device. Device can speak, fantastic. It is good.
Interviewer: What do you feel No.6 to give the training all over the country and to implement it to the entire country. Will there be any challenges and how to face them? And how to make improvements?
Participant 6: There may not be any challenges. All should be trained, and we need to keep the device ready for every delivery. And after using it we need to keep it clean. All the staff from group D to the nursing staff should have knowledge about it and it should be cleaned every time and kept ready. This should be the responsibility of everybody and should have awareness about it.
Interviewer: So you feel like that, do you feel that it is easy to train all the staff of the entire country and there will be no challenges for it?
Participant 6: Yes sir.
Interviewer: No. 5 what do you say?
Participant 5: No response they just
Interviewer: We are thinking of this training by giving the mannequins or not. Now we had taken only 5-6 PHC for this training. Will there be any problem expanding this training to the entire our district or our state or to our country?
Participant 5: It can be done.
Interviewer: According to you it can be done. You did not see any problems to do that.
Participant 5: No, no problem.
Participant 4: Where there is delivery setup all persons there should be trained at least. We cannot predict what will happen at any time. Therefore they should have this knowledge. If we have knowledge we can handle the situation.
Interviewer: You mean we should concentrate where the delivery takes place?
Participant 4: Yes
Interviewer: Where there is no delivery happening what to do there?
Participant 4: They also should be trained. More to be given to them.
Interviewer: You mean more focus to be given to where the deliveries are occurring?
Participant 4: Yes
Interviewer: Will there be any challenges to do that?
Participant 4: There will not be any challenge to do training. It can be done and all can learn it.
Interviewer: No.3?
Participant 3: All can be trained. Those who take training should do practice effectively. The training what we give to them, they should make use of it.
Interviewer: Ok
Participant 3: Training can be given at all places.
Interviewer: Do you feel there will be no problem number 2?
Participant 2: Sir, we should not take it as all babies born in normal deliveries will be normal. We should think that they can be complicated. Every delivery we should keep the device correctly. If we make it so we can handle any complications easily. And we should keep all the instruments

clean. All staff can be trained. Effective training should be given where it is necessary. For others we should give training for the sake of knowledge.
Interviewer: So you feel that there is no problem to give this training all over the country. What do you think No.1?
Participant 1: All can take the training. Training can be given all over the country. This knowledge must be given to those who work in the places where more deliveries are taking place. This will help in reducing the deaths in mothers and the babies
Interviewer: And you sir one more thing, as we discussed, in the live babies it is all the cleanliness and all the things we need to look at. And once you see that all these things are done, do you think that there will be an improvement in the clinical care? In that institute hospital or CHC or general hospital?
Participant 7: Definitely, duration and timing and effectiveness of the ventilation……we used to just push it and with this device, it is showing that you are doing wrong or right. Definitely they will collect it and they will look into whether the chest is rising or not and the time will be less. This will take less time and effectiveness. And this device is cost effective.
Interviewer: It's cost effective, so it can be easily implemented in clinical case setup?
Participants 7: Yes
Interviewer: I will ask number 6 this device to be helpful to the delivery and post delivery services, we are giving pre delivery services, giving resuscitation to the newborn baby, then the outcome, what we call as the outcome i.e reducing the newborn deaths, I am doing improvement in all the respects and reducing the death rates is there such possibility?
Participant 6: Yes, it will come down.
Interviewer: How do you say?
Participant 6: As we have taken the training, if there is birth asphyxia to any baby and if we give service to the baby so that it will not have any problem the death rate will come down and the referral rate also will come down and its life also will have improvement. It will be beneficial to the family members also because if we tell them to take the baby to higher hospital it will be a burden for them economically. If we take the training and give effective service to the baby when it is needed it will help the baby including its growth and development.
Interviewer: Ok so what do you say No. 5?
Participant 5: By using it on the baby who is in trouble, it will help.
Interviewer: At so with this do you think that it will better the situation of the hospitals?
Participant 5: Yes, it will do good.
Participant 4: It will help because if we give effective ventilation to the baby, it will have a good life. If we do effective ventilation within the 'golden minute' then only it will not have this and it will have a good life.
Interviewer: Do you feel that the performance of your hospital will improve?
Participant 4: Yes, it will yes sir
Interviewer: No.3 what do you think
Participant 3: It will happen
Interviewer: No. 2?
Participant 2: Will have good performance.
Interviewer: No.1 what do you say?
Participant 1: The baby which does not cry within 1 minute it is as good as dead even though it is alive. Till death it will be mentally handicapped. It will be a burden to the society as well as to the parents, if we give effective ventilation when it is asphyxiated with a bag and mask and if we

try effectively that baby will be a wise baby and it will be helpful to the society and it will be saved with the help of all.
Interviewer: Does your hospitality death rate also will come down?
Participant 1: Yes it will come down.
Interviewer: Infant death rate and
Participant 1: Will come down
Interviewer: Can it be used in the clinical care?
Participant 1: Yes
Interviewer: Do you all agree that it can be implemented in the clinical care? That means on the live baby it can be used. Do all of you agree to this?
Participant 7: The device is fantastic. It is a game changer and life saving for specially new bonds and with this device definitely the but asphyxia and even morbidity due to birth asphyxia will come down with timely intervention with immediate and right resuscitation. This device will give you a way. Earlier also we used to do resuscitation. This will show how to do it, right resuscitation, right you are doing, right only with this definitely it is very good instrument.
Interviewer: What do you say No. 6?
Participant 6: The device is very best. It shows us the mistakes and does everything. By that it will do good to the baby. I feel so.
Interviewer: In your opinion, what do you think about it? Is there any suggestion good or bad? Any experience. Do you like to say anything?
Participant 5: Yes sir, the device is good. All of us have the confidence. It is better to continue it.
Interviewer: What do you say in number 4?
Participant 4: The device is good for us but by using this device mortality will come down. Overall it is good for the society also.
Interviewer: No. 1 what do you say? What is your overall feeling?
Participant 1: The device has been useful to all. Since it has come how to do bag and mask, how to apply pressure and do it, if we apply more pressure and do it, how it will do harm to the lungs of the baby, that we were not knowing we used to apply very much more pressure and used to do it, we have got knowledge about all these things to all the staff.
Interviewer: Ok you are feeling that it has been good by improving the application of pressure.
Participant 1: Yes, I feel so.
Interviewer: No. 2?
Participant 2: This AIR device is a little different, compared to what we were doing earlier. We have got the confidence that if something happens to the baby we can handle alone that situation.
Interviewer: You mean you can do it single handedly?
Participant 2: We can.
Interviewer: No.3?
Participant 3: With study we have got quality improvement sir. It is very good for the society.
Interviewer: Anybody else like to say anything else? About any experience? Anything good or anything bad?
Participants 7: Nothing sir.
Interviewer: Till now you all participated and answered my questions and you gave so many suggestions and information so that we can do improvement in the AIR device. Thank you all for this.

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Interviewer: According to you, after the delivery what are the possible major complications of the baby?
Participant 7: Asphyxia.
Interviewer: How many of such cases you might have seen in your entire service?
Participant 7: In our CHC 30-40 deliveries occur.
Interviewer: Throughout your entire experience, how many? How many deliveries you have conducted?
Participant 7: May be 30-35 deliveries in a day. Among those we used to do some cesarean delivery also about 10-12. In that indicated cases. Fits, asphyxia, fetal distress, we take there for fetal resuscitation. In normal delivery is also that is remaining 20-25 about 2-3 used to be taken for resuscitation.
Interviewer: As madam told, the remaining participants, and you also tell me how many deliveries you have conducted in your service and how many you have come across and among them how many baby's had birth asphyxia problems. Just tell me an approximate number.
Participant 6: I have conducted more than 2500 deliveries, during my entire service.
Interviewer: Approximately how many asphyxiated babies you have seen?
Participant 6: I have seen 50-100 asphyxiated babies.
Interviewer: No. 5? How many deliveries you have conducted and how many you have seen asphyxia babies?
Participant 5: Nearly 1500 deliveries I have conducted. Among them I have seen at least 100.
Interviewer: Birth asphyxia?
Participant 5: Yes.
Participant 4: I have done 200-250 deliveries among them about 10-15.
Interviewer: No. 3?
Participant 3: I have done about a 1000 deliveries. Out of those about 50-100.
Participant 2: I have done about 1000 deliveries. Among them about 20-25.
Interviewer: No. 1?
Participant 1: More than 1500 I have done deliveries. In my earlier place there used to be more deliveries. But here there are not as much deliveries is occurring as in that place. More than 2000 and more than 200 asphyxia cases used to occur.
Interviewer: According to your saying, if there are a hundred deliveries, there will be about 10 cases of birth asphyxia. Do you all agree to it?
All participants: Yes.
Participant 7: Approximately, the calculation comes to that level.
Interviewer: Participant 7 says that if you do the calculation it comes to 10 in 100. Do all of you agree to it?
All participants: Yes…….
Interviewer: Do you believe that it is a serious problem when 10 babies in a hundred have birth asphyxia?
All participants: Yes. We feel so.
Interviewer: To combat this problem we give education, we give knowledge and we also give skills from the government side. In our area, where we are working, how the knowledge is being given, how does skill is being given, how the training are given, whether there is benefit from those, whether that knowledge is there or not, how do you feel?

Participant 1: About project?
Interviewer: It is not about the project, overall about your work.
Participant: Over all, there are intermittent trainings from the government. They used to call doctors and staff nurses for training, about resuscitation, breastfeeding for the babies, IMNCI (Integrated Management of Neonatal and Childhood Illness) training, about childhood illness, infections. For all about this trainings intermittent trainings are there. But the advance resuscitation is different from all these, this is newer for us. We have not yet undergone this type of training in our government set up.
Interviewer: You say that there are trainings in the government setup. But how far they give the knowledge and how far you gain the knowledge and to what extent you implement it?
Participant 7: Yes, yes we are gaining the knowledge and we are implementing it also.
Interviewer: As a doctor you can say like that. What about the others like the nursing staff?
Participant 7: They are also the same. In the gynecology side, in the OBG side also there they are undergoing DAKSHATA training and LAKSHYA training, all trainings are there (They are accreditation bodies for health centres). In that also they are making them updated in recent techniques and all. Definitely, they are applying them here in labour room or in newborn resuscitation. Definitely it is good for doctor also.
Interviewer: Earlier to this, I mean about 10 years ago or 7 years ago, how was the system? How was the knowledge of nursing staff? Capacity….
Participant 7: Now it is better and advanced. Newer technology are coming trainings also they are giving; they are also getting updated in knowledge and skills.
Interviewer: No.6 told me that you have worked for more than 20 years. In your 20 years of experience what can you say about your knowledge and training?
Participant 6: I have joined the service in the year 2008. I started working in labour room 2 years after that i.e. in the year 2010. I used to work with my senior staff nurses. Still I have in front of my eyes about a scenario, I was conducting a delivery with one of our senior staff nurses. After the delivery some babies were not crying immediately after birth, they were not breathing. At that time we were not knowing anything about newborn baby resuscitation and there were not training regarding that in the government setup. In such situation we used to refer the baby to a private pediatrician. It used to take approximately about 10 minutes for the baby to be taken there. After that when we use to come to the word and start writing delivery notes, we used to get a call saying "you have referred a baby, but the baby died". This used to be the scenario in the maximum number of cases. In the year 2013, in KLE there was a project started called HBB that was the first time I attended such training. Till that time, we had not got any training in the government set up. When I took the training there, the skill training was very good in that, plus along with that they stressed more on hands on training rather than theoretical training as is done in our government set up. In government set up also hands on training is there but the ratio of hands-on training is very less.
Interviewer: You mean in the government setup; trainings are given but hands on trainings are less?
Participant 6: Yes sir, but recently it has improved in the government setup, for example now they have started a skill lab training. Skill lab for medical officers. Skill lab for nursing staff. There only focus given on hands-on training. But what we have learnt there, it is very important to apply it in our hospital when we come here from there. It could be about newborn resuscitation; it is very important to apply whatever we have learnt there. But there is nobody is there to monitor that. There is no monitoring system to look into how much we have done, and we are lacking in that.
Interviewer: Was the knowledge being retained with you or not?

Participant 6: If we start applying it, it starts slowly coming down but we were not practicing it daily. What we learnt in the training, if we did practice it after coming here, then only we will be able to do it. There were no materials to do the practice. For example mannequins, we were not having mannequins to practice daily. We had to apply it directly on the live baby whenever we used to get an asphyxiated baby. It was a new experience for us. We had to push it to the new born baby. Sometimes it used to cry and sometimes it was not.
Interviewer: No.5 what do you say? About training and experience?
Participant 5: In the government, they give us the training, but we are applying it very less. After training we do not apply it enough, there is not much focus on that. We have to work and all this we have to work only on that, because every day we are updating ourselves, every day we have to give the records. And for that we are using it routinely day by day.
Interviewer: What is your experience, what is your problem in doing resuscitation? You have almost 11 to 12 years' experience?
Participant 5: It is 12 years, I did directly BSc nursing. Therefore I have less knowledge about the hospital. When I came here, I was not knowing much about conducting deliveries. My seniors taught me about conducting deliveries. At that time instead of doing resuscitation, we used to refer the baby immediately. So there was no chance to do resuscitation and there was no materials also to do this resuscitation. In 2011 there was not much focus on it.
Interviewer: When you were given the first training about HBB (Helping Baby Breath) in the government setup? i.e. about resuscitation?
Participant 5: Training about resuscitation was, when we got HBB training.
Interviewer: Apart from HBB. At what other time it was given?
Participant 5: About the baby IMNCI and FNCI training were given. But after coming here we applied it less.
Interviewer: So you could not apply it?
Participant 5: No sir, we could not apply it.
Interviewer: Do you remember that knowledge?
Participant 5: (Laughs loudly……) we did it in 2012. I don't have much knowledge about it.
Interviewer: After that, any training? Did you get any training after that?
Participant 5: We got it sir, but after coming from the training we did not apply it in our labour room.
Interviewer: They gave you the knowledge, but it is not retained in your mind?
Participant 5: Yes it did not retained. Experience about it will be less.
Interviewer: No. 6?
Participant 6: Recently the LAKSHYA program was done. In LAKSHYA program or NQS program or LAKSHYA program, So many quality program have come. In those programs standard protocols are made ready. That has been very helpful to our government hospitals recently. For example PPH management, there is an algorithm for it, and that only has to be followed. Earlier what we used to do was, the doctors has to come and advise and then we have to use the drug, and we had to give care to the patient. Like this we had to wait. Recently what the government has done is, for the PPH management, there are some steps laid down which has to be followed. Not only here all over India the same protocol has to be followed. And even for resuscitation, similar protocol has to be followed. And eclampsia management, there is also a protocol to be followed. And for AMTCL, for that also the same steps have to be advised.
Interviewer: Giving injection and medicine is different, but resuscitation is different?
Participant 6: Yes.

Interviewer: Do you agree for this?
All participants: (In chorus) Yes.
Interviewer: All that knowledge is given and it is displayed on the wall. Does that knowledge displayed on the board really helps you?
Participant 6: As we follow those steps daily, then it will be of help to us. And we will remember it also in our mind. If we continue and follow them we can save the babies 100% and the mother also.
Interviewer: Guidelines have come recently?
Participant 6: Yes they have come recently from 2017 onwards.
Interviewer: No.2 you were telling something?
Participant 2: We practice resuscitation on mannequins, but when we do it on the baby we are under tension, that we should save the baby. While doing it on the baby, the Mask when placed on the baby, it slips and we are afraid that we may cause some harm or injury to the baby. And we will be at a loss what to do at that time. We will not be knowing what to do. But from now on, because there are indicators for leakage and blockage we will come to know what to do next in such situation.
Interviewer: But, I am asking you about your earlier training and earlier knowledge, have you learnt anything from it or is there any difficulty in doing resuscitation. I am asking you about that
Participant 2: We were only two staff nurses. In the labour room in the casualty, and two of us used to be in the labour room. Out of those to one has to take care of the mother and the other one had to take care of the newborn baby. There we used to have problems. We used to go from this side to that side in doing our work. There are many problems due to this. And to do resuscitation one more staff nurse is needed to handle the baby. And there is the problem to look after mothers also, therefore we need more staff nurses.
Interviewer: No.3 what do you say?
Participant 3: Earlier when we were doing delivery AMBU bag etc…because there were no equipment's we used to refer the babies. Now all the things are available. Therefore we are doing resuscitation easily.
Interviewer: How many of you agree that there were no equipment's earlier? Almost all of you agree? Yes number 4 is going to tell something.
Participant 4: Earlier, there were less instruments. Now after we told about our problems of lack of instruments many of the instruments are being supplied. And there is much difference between what we learn during the training and what we do here after coming from the training. To do this resuscitation every time there is a new case, and the danger signs are also more. As we go on doing the resuscitation and if there are equipment's which we need, we have the knowledge and all this helps us to do the resuscitation. But for us to get updated, we need refresh trainings frequently and we can carry on our work easily, and for our knowledge and the work we do, that should be effective and quality training.
Interviewer: Was there such a situation earlier?
Participant 4: It was less to some extent. Now after this recent training, we are getting updated and also after coming here we discuss among ourselves, and we can talk to each other and discuss about our problems, we learn from our colleagues, we learn from our friendships. And to implement these programs, such small trainings will help us a lot. Yes, there are changes happening. But we need some more changes.
Interviewer: No.1 you started to tell something?

Participant 1: When I joined in 1998 there was nothing, there was no materials supply and nothing….. Delivery used to occur, we used to see whether the baby was crying or not and used to call the doctor. The doctor used to come and used to say that "it is like this, it is like that" and then we used to refer the baby. And outcome used to come as either a live baby or dead baby. After that we got the NSSK program and after that we got HBB training, and there is some improvement. After this improvement we came to know what to do immediately after the delivery and before calling the doctor, what first step to be done, what next step to be done. Like this we did the baby care. After that there was still more improvement with the AIR study.
Interviewer: I will ask you later about AIR study. From 1999 onwards
Participant 1: There is improvement, first there was nothing because we were not knowing and without our knowledge something might have happened to the babies. But after the HBB study we have saved many babies.
Interviewer: No.4 you tell?
Participant 4: In our hospital rate of death is less when compared to other hospitals. Why to go to other hospital? In our hospital we do our best, if it is not possible for us, we refer the babies and we diagnose the problem easily. At least we do not harm the babies in our hands.
Interviewer: Let us come to AIR device let us start from number 1, after this AIR device came to your facility, all these problems i.e. to resuscitate you told that there used to be no instruments, you did not have confidence and you had the fear that what will happened to the baby, and different types of baby come and it was difficult for you to handle them differently. Those problems were there and you also told about the scarcity of staff. Did all these barriers and problems reduce with the arrival of AIR device? Did it help you in these matters?
Participant 1: Yes it helped us to solve these problems. We used to do (Resuscitation) blindly. Blindly means to resuscitate the baby we used to do the seal. It is different to make a seal of the mask on the live baby and on the mannequins. We used to have difficulty in making the seal, how to get the proper seal, from where the leakage is occurring. What happens if we don't get proper seal, and how to make the air enter, how much pressure to be given. All these problems are solved with the help of AIR device. We just used to do it blindly without knowing how to do it and how much to do. In case if the baby did not cry after 2 minutes, first we need to do harsh breathing for two times, then to do all this we came to know after doing this AIR device.
Interviewer: Earlier you did not have all these information?
Participant 1: We used to do the resuscitation. In this AIR device we can know and will improve ourselves. We can know whether we are doing correctly or not.
Interviewer: No.5?
Participant 5: when we have the practical problem, instead of trying at that time, if we update ourselves with this AIR device, which you have given to us, it is better. Instead of giving the service when the patient comes if we practice it daily during our duty hours on the mannequins we get ourselves updated. That will make our efforts of resuscitation easy at the time of delivery. Therefore we used to get ourselves updated daily. Earlier we used to get the training. After coming from the training, we used to try it only when a delivery case comes to us. And there used to be no time to know whether we are doing it correctly or not. We were not knowing our mistakes. What we are doing now is, along with our busy work, we are getting ourselves updated by doing daily practice on the device, and we are able to know what mistakes we are doing during resuscitation. We now know what happens if we do like this and what happens if we do like that, so that we can avoid the mistakes which can occur in future.
Interviewer: Can you tell No.3?

Participant 3: Earlier, after delivery we used to wait for the doctor, we used to do everything only after the doctor comes. We were not knowing what to do till the doctor comes. We used to think that "the doctor comes and does everything". Now after we took this training, and after all the things and equipment's are available, even when we call the doctor and by the time the doctor arrives we start giving resuscitation. We start resuscitation on the baby. And observe whether the baby's chest is moving. Even if there is nobody to help us. Just now you asked us a question about the difference between then and now. Even if nobody comes to our help, if we are perfect in the AIR device, we do not wait for anybody to come, we can apply the device on the baby. We do it correctly. By the time the doctor comes I can resuscitate the baby. That much confidence I am having now.
Interviewer: Earlier
Participant 3: We were not having
Interviewer: You did not have support?
Participant 3: We did not have support and we used to wait for them, let these come. Now it is not like that. We have all the equipment now. Earlier we had the knowledge, but we were not having the equipment. Now we have the knowledge and equipment. Even when we call the doctor for help, by the time the doctor comes we would have done at least 50% of the baby's resuscitation. That confidence we are having now.
Interviewer: Madam you are telling something?
Participant 7: Since the AIR device has come in us. It is helpful for the self-assessment. Whatever we were doing earlier, we thought that "I am right, I am doing right. Whatever training I have taken, I am doing right". But nobody was there to tell me "you are doing wrong". This device is for self-assessment. It only tells us "you are doing wrong, leakage is there, blockage is there, the rate is high". It is very helpful in doing things the right way.
Interviewer: You mean it helps in self-assessment
Participant 7: Yes, it helps in self-assessment.
Interviewer: Are your old problem been solved with this?
Participant 7: Definitely, previously we were doing, but we were not knowing whether we were right or wrong. I was thinking "I am right". But my right could be wrong (laughs). Now the device is telling me "you are going wrong way" and I am correcting myself there only. When I come to know that why the baby is not crying, because leakage is there. But that time I used to think my resuscitation was successful. But now on the spot the devices telling "you are not going to succeed go back and see you have the blockage" so this device is very intelligent like a teacher. It teachers us like a teacher. It helps us to self-assess. Whenever we can change ourselves, we can correct ourselves. Because afterwards we come to know that "I was wrong that time, it is ok. We did not resuscitate proper way.
Interviewer: What do you feel somewhere in the corner of your mind, guilty consciousness about the old times?
Participant 7: Definitely sir (laughs) because time is very less here, we have to act very promptly. After the result, we go back and think "why it has not happened, why it has not succeeded?" Here, use the time to correct yourself and going the right way.
Interviewer: Do you feel that something might have gone wrong?
Participant 7: Definitely, might have been. Maybe because there was nobody to tell you no? That leakage is there, blockage is there, like that. We can do self-assessment and we can correct ourselves. Time is there for that.

Participant 6: After this AIR device has arrived. It tells us the accuracy of our skill. It helps us a lot. Whether we are doing it correctly or not. As madam said, it is self-monitoring actually, and it acts like a teacher also. It tells us "you do it like this only, there is a blockage, rate is very high, rate is very low, and volume is not up to enough quantity". It helps us to maintain the accuracy up to the optimum mark. It also helps us to retain our skills at the same level.
Interviewer: No. 5 what do you say? Is there improvement over the old device?
Participant 5: There is more improvement. With the old HBB device, we were not knowing about how much pressure to be applied. We used to use it only for 1 minute. If the breathing is not there, then we used to continue for another 30 seconds. There are so many changes now compared to the previous device.
Interviewer: Are these changes for the good or for the bad.
Participant 5: These changes are for the good the device is good because……
Interviewer: Yes go on in what way it is good? And in what way it has helped you to overcome the old problems?
Participant 5: It has been good, because we are continuing with the breathing. For two minutes and fifteen seconds. In between we do not change the position and continuation of the breathing activity. Previously we used to over for one minute. We were not seeing whether we had given correct position or not. We used to just start with the bag and mask with more pressure and all. This device helps us for accurate result of the baby.
Interviewer: Anybody else like to say anything?
Participant 1: The AIR device corrected me only first (all other laughs). That means, I am confident and I am correct. Earlier we used to do it, but blindly we used to do it. We will not sure that whether we are correct. Why this air device we can be 100% sure that we are correct. If we are sure then the baby will also surely be saved.
Interviewer: All others, do you agree with this?
All participants: Yes sir.
Participant 5: Outcome is improved.
Interviewer: In what way can anybody tell me an example?
Participant 5: To resuscitate 10 babies, if at least eight babies are saved with this HBB, two babies we have to refer. With this we can save one more baby, because we are continuing with HBB with bag and mask to improve the life of babies.
Interviewer: After the arrival of the AIR device are there any changes?
Participant 5: Yes there are changes.
Interviewer: Can anybody tell me an example how your skill has improved?
Participant 5: In the last December month, one baby was delivered with thick meconium stained, fetal distress was there, I was on night duty. After the delivery the baby had no cry and nothing. As we were told in the training we took the baby to the side and did resuscitate. And we also informed the doctor. Before the doctor came we made the baby cry and referred the by and the baby survived.
Interviewer: So, like this you did one successful resuscitation?
Participant 5: Yes.
Interviewer: Do you think that AIR device supported you in saving the baby?
Participant 5: Yes.
Interviewer: Anybody else would like to say something, how the AIR device helped to solve the old problems?
Ok next question.

Now you all told that you all liked the AIR device, correct?
All participants: Yes
Interviewer: All of you did like the device?
All participants: Yes sir.
Interviewer: In that device, actually what did you like?
Participant 7: The same sir,
Interviewer: Seeing the device, what did you like in it?
Participant 7: Like means, it is good. Whatever it shows and guides me, whatever you are doing is correct or not. It is really good.
Interviewer: One is you like the technique and it is guiding you?
Participant 7: yes.
Interviewer: No. 6 tell me what you like it?
Participant 6: It is like a self-assessment tool. One more thing is it is easy to use. Any nurse midwife can use it. Not only us, any ANM or all can use it. It is very easy to use. Technique also is very easy to use. It is not complex, anybody can use it.
Interviewer: No. 5 what did you like in this device?
Participant 5: It is light-weight, easy to use and…… (5 seconds)
Interviewer: You can tell about colour also.
(All participants laugh)
Participant 7: It shows blockage leakage and all. To identify where we are doing mistake, and to get it corrected, it helps us in that. It has helped us to identify our mistakes and to get them corrected. Like correcting ourselves and to improve our skill. And there are three parameters and it tells you with parameters you are going wrong, that particularly it says, not over all you are wrong like that and which parameters you need to improve.
Interviewer: What parameters are they?
Participant 7: Leakage, blockage and speed at which rate you are going.
Interviewer: Those parameters it says
Participant 7: It says separately about those three parameters. Which component you are lagging in, and that component we can improve by correcting myself.
Interviewer: You tell No.5
Participant 5: Whatever parameters we are going wrong, immediately we can change it, to improve it in the next to me and we can practice it.
Interviewer: No. 3
Participant 3: While we are doing resuscitation practice, it show what mistake we are committing. Immediately we can improve it. There are colours in that.
Interviewer: Are there colours in that?
Participant 3: Yes. There are green, red.
Interviewer: What colours are there?
Participant 3: Green, red and orange which we are….
Interviewer: What do you mean by green?
Participant 3: Position is correct.
Interviewer: What is the meaning of green colour?
Participant 3: Green means correct, red means danger.
Interviewer: What is meant by orange?
Participant 3: Orange means you need to improve, little bit to come into green colour.
Interviewer: Which one is better?

Participate 3: Green is better.
Interviewer: after green, which colour comes?
Participant 3: Green means we are giving it in a proper position. All those parameters, the correct way we are doing.
Interviewer: You mean there are green, red and orange colours. With the help of those Colors you can improve your skill.
Interviewer: No. 2 what do you like in the device?
Participant 2: The device is very big one.
Interviewer: No. 1 tell me what did you like?
Participant 1: If we are doing any mistake it identifies. It shows the colour, suddenly if changes if there is any mistake, accordingly change the process to better it.
Interviewer: All of you told about the likes, now let me start with number one what is there in it which you disliked?
Participant 1: It is heavy.
Interviewer: others tell me other than this topic, that is heavy.. One is heavy what else?
Participant 1: It is a little discomfort to handle because of heaviness.
Interviewer: Madam No. 7?
Participant 7: It needs charging (Laughs). At that time of resuscitation if it is not charged the time will go, you should be ready for that.
Interviewer: One is heavy weight and the second is charging all of you agree for this?
All participants: Yes.
Interviewer: No. 6?
Participant 6: It can't be used for a live baby, resuscitation of a live baby. That is my dislike.
Interviewer: According to you, it cannot be used for a live baby. It is only for training purpose?
Participant 6: Yes it is only for training purpose.
Interviewer: What else you did not like in that device?
Participant 6: Initially in our facility. For 4 months it was blocked. Whatever correction we used to do, we were not knowing about it. In the last two months they were opened and then we came to know that how much we had done and to what percentage we had done correctly.
Interviewer: What do you feel actually?
Participant 6: As we used to practice earlier we did the practice. We went on practicing. We did not know whether we were improving or not. We just went on practicing the device blindly. We did not know whether we were improving or we were doing less. How was our skill? At what level our skill was. We were not knowing anything.
Interviewer: This happened in your hospital or somewhere else also?
Participant 6: I am telling about our facility only. I don't know about the other facilities.
Interviewer: How many mistakes you used to do and after opening it how many improvement you achieved?
Participant 6: I have improved.
Interviewer: How much was previously?
Participant 6: I used to achieve 70-80 percent of accuracy. After coming here recently I scored up to 99 and 100 percent.
Interviewer: No. 4?
Participant 4: As you told I scored hundred.
Interviewer: Earlier, how much mistakes you did?
Participant 4: There were 5-6 mistakes. Now there is improvement.

Interviewer: Around 60% failures used to be there. Who else had the experience?
Participant 5: I had the mistake of pressure and leakage. Many times I did mistakes.
Interviewer: Pressure and?
Participant 5: Pressure and leakage.
Interviewer: Pressure and leakage, they were important components.
All participants: Yes.
Participant 5: That only improved and practically it is important on the patient.
Participant 3: She does outside duty more. And does less labour room duty. She has not done practice. Therefore, she is making mistakes. If we do daily practice it improves.
Interviewer: But if we see percentage wise earlier, there used to be more mistakes. After the system was opened, they improved, is it right?
All participants: Yes.
Participant 5: Earlier it was not visible to us. After it was open after 4 months, we could see where we were making mistakes. When once we came to know where we were making mistakes, it was easy for us to get corrected. Like this we corrected our mistakes we improved.
Interviewer: No. 2?
Participant 2: I did 70-80 percent, there were many mistakes for the first two month. When I started doing after seeing it I score 99 percent.
Interviewer: What else is there that you did not like in the machine?
Participant 7: It needs repeat training. Immediately you give the device and ask it to do it. It is difficult. We are doing it for the last 6 months, now we are experts. Without machine also we know how much I have to give to get the good resuscitation. It makes training in the initial stage repeat training.
Interviewer: So that is the part of the training. Is there anything that you disliked? Anything about the machine? Why I am doing this is because we can change it if you don't like anything in the device?
Participant 7:..No response.
Interviewer: Some of you told me that you did not like the machine. What changes do you suggest in that?
Participant 1: It should be lightweight.
Interviewer: Do you all agree to this? Raise your hands?
All participant: Yes.
Interviewer: Yes, all of you raised hands, you all agree to it?
All participants: Yes.
Participant 7: Size is also big.
Interviewer: Participant 7 says size is big. It has to be made a little smaller, how many of you agree to it?
All participants: Yes, we agree.
Participants 7: Charging point a bit (Laughs) battery charging to be more. Once charged it has to work more. Participant battery capacity to be more.
Interviewer: How many of you agree to this?
All participants: Yes sir.
Interviewer: What else? Number 6 do you suggest any changes?
Participant 6: No sir
Interviewer: No.5? No. 4?
(No response)

Interviewer: No. 3?
(No response)
Interviewer: No. 2?
(No response)
Interviewer: No. 1?
Participant 1: Same suggestion. It is better, it should be small in size.
Interviewer: Small size, lightweight and charging. From these anything else?
Participant 3: The mannequins becomes lose while doing resuscitation because of less water in the mannequins. The water is adequate in the mannequins our resuscitation can be correctly done. If the water is less in mannequins even if we try so much, the resuscitation will not be correct.
Interviewer: What else? Any suggestions for change and modification? If you suggest, we can come up with a new version of the machine?
Participants: (No response)
Interviewer: Where there any challenges in using the AIR device from the beginning i.e. at the time of training till now, were there any challenges, any difficulties? And how do you overcome them?
Participant 1: Doing the resuscitation on a live baby is a challenge. Doing it on a mannequin is easy because it does not move. But doing it on a live baby is a challenge, sometimes we will be alone in a labour room, there will be a live baby. We cannot leave the baby alone.
Interviewer: That is there. What is the challenge to learn the device? Tell me only about the device.
Participant 1: We were interested in learning about the AIR device. We were doing more than what we were supposed to do, we were interested in doing it for the sake of saving the baby. We took it as a challenge to learn the device.
Interviewer: Did you feel it as a challenge to learn the AIR device, the mannequins, the Mask?
Participant 1: It was a little difficult to learn, there use to be leak, The Mask was not fitting well, AIR used to leak. We thought whatever we were doing was the right way. But afterwards we came to know that we were doing mistake in 60-70 percentage. We took it as a challenge and got ourselves corrected.
Interviewer: To learn the AIR device and to use the device what were the challenges?
Participant 1: To improve the skill.
Interviewer: Yes, the skill was improved, but to learn a new machine.
Participant 2: Because the device was heavy, while putting pressure on it we used to get pain in the hand. If it was of normal weight, we would not have pain. But because it was heavy our hands used to have pain.
Interviewer: Any other challenge?
Participant 1: Taking the device on one side, not to take it in the front. It was a challenge we should see the resuscitation. We had to take it to aside. It should be done correctly.
Interviewer: The positioning was a kind of challenge to you.
Participant 1: Yes, it was a challenge. We cannot keep it as we like and do it.
Interviewer: Any other challenge you had to face? One of you told that it was heavy and your hand used to get pain while holding it. The second one told that about the positioning of the bag and mask and the mannequin.
Interviewer: What else?
Participant 1: We use to get tired by doing it continuously without causing any leak and not moving this side and that side and continuously focusing on the device only (laughs).

Interviewer: That is also a challenge. Yes
(All participant started laughing).
Interviewer: All of you, do you agree for this?
All participants: Yes.
Participant 1: And afterwards when we look at the result that also used to show less (Again all the participants laugh).
Participant 3: And moreover, we had to repeat it.
Participant 6: When the device was opened, we came to know where we are doing the mistake like leakage, rate etc... For that we had to get train again to get it corrected. After doing it 4 to 5 times we used to get fatigued. We had to do 4-5 times.
Participant 1: I had back pain already at the time of training. At that time it was difficult for me to do resuscitation even for one minute. I took rest for few days after the training and now I can do the practice.
Interviewer: It is also a challenge because of one's personal restrictions like joint pain therefore doing resuscitation in such a condition also is a challenge.
Interviewer: Apart from this, any other challenge? To use the machine?
Party simple in our hospital we are supposed to work not only in the delivery room. We have to work anywhere in the hospital. Even the staff who are working in the delivery room, they are supposed to work at other departments also, like casualty or post-natal ward etc.. If necessary. Sometimes it happens so that we will be so busy in the daily schedule, sometimes therefore, we forget to do the daily practice. Afterwards it comes to our mind “oh I have not done the practice today!” next day when I came to do practice, I used to do the daily practice double time to get ourselves corrected. That time I used to get pain in my hand. At the last I used to come to know after completing that how much practice I did correctly, sometimes it used to come 80% or 90%. Then I used to feel “even if I do so much it is that much only” and I used to feel frustrated and bored.
Interviewer: So you feel mentally bored because of getting not so good results?
All participants: Yes
Interviewer: Any other challenges? No? Ok just now you told that you have multiple duties of work in the hospital. Number for you told like this. In addition, you are supposed to do this daily practice also. Do you feel it as stressful?
Participant 4: At the beginning we feel like it is stressful. But as we go on doing it, we will not feel it as stressful. That also becomes one of our routine works. In the beginning we were a little bit reluctant to do it. But as the days went and we continued to do it, it became one of our routine work as we sign in the attendance register or like a biometric. Only we need to do time adjustment or time management for it. Only in the initial days it was a little difficult for us.
Interviewer: You mean it was a little difficult to get adjusted and do you feel it as a workload?
Participant 4: No nothing like that.
Participant 3: If we do it as soon as we come to the hospital in the morning, it is ok. If we forget to do it early, then at 10 or 11 in the morning our OPD work starts daily. At that time it is difficult to do it in the busy work. Like this we used to miss the daily practice because of our busy work. But when we got interested in doing the practice we thought “let us do it first, as soon as we come to the hospital in the morning and let us finish it and then go inside the hospital”. Like this we all started doing it first and after completing daily practice we started going to OPD or IPD or other departments.
Interviewer: Then it became routine for you?

Participant 3: Yes, it became routine.
Interviewer: According to what you told, I feel that doesn't depends on once mindset and interest?
All participants: Yes sir.
Participant 7: We should have no stress as well as interest. It if there is a delivery case or casualty case they will not do. And if they do, they will definitely show yes. They should be calm and interested and leisure time.
Interviewer: so number seven says it is not a job which can be done in a hurry.
(All other participants laugh)
Participant 4: Should be there physically as well as mentally. Then only it will be correctly done.
Participant 3: Therefore we will be fresh in the early morning. There will not be any headache in us at that time. Therefore if we do it when we are fresh in the mind it will be correctly done in the morning.
Interviewer: This idea is, when it comes to training what will you do in real life?
Participant 3: If it is in real life, we will be in the labour room in such a situation there is the baby and the mother. If we have to do resuscitation, we should do it. Mother will be ok and for the baby we do resuscitation there itself we do 100% correctly.
Interviewer: Do you feel any other challenges in learning or using the AIR device? Did any old staff said anything negative about it?
Participant 7: Nothing of that kind happened in our hospital.
Interviewer: In other places? Anywhere else?
Participant 7: The old is there only all the old staff.
All participants: Laugh
Participant 2: When she has 25 years' service, but she does before me always (all participants laugh)
Interviewer: So according to you it does not matter, old age.
Participant 6: Does not matter.
Participant 7: She does not look so. Even though she is having 25 years of service, she is very well with all others and she should be updated.
Participant 4: As she gets corrected herself we also get ourselves connected. When we were doing she used to tell us "no, when it has to be done, it should be done". Then we use to feel "when she is doing it, why not us? You also should do it".
Participant 1: All our staff are interested, they take part in everything with interest. We all save babies.
Interviewer: My question was whether the old staff hesitate to do the daily practice. (All participants laugh) saying "why we need it?" there is nothing like that. Did you hear anything like this anywhere? Reluctance?
All participants: No nothing like that
Interviewer: So there is no challenge of age of experience.
All participants: No challenge sir.
Interviewer: Did the AIR device seemed easy for you to learn?
Participant 1: Initially it did look like easy. I thought "what is this? We have already? Learnt and already we are saving the babies then why this new training has come?" they explain to me that this is an air device and there should correct the seal, airway should be correct and then pressure should be correct. After that I understood that we might be doing some mistakes and we should correct ourselves we should learn.
Interviewer: What do you think about learning the AIR device?

Participant 1: It is easy now.
Interviewer: earlier was a bit difficult. What was the difficulty?
Participant 2: Used to have blockage. We were not knowing how to do it.
Interviewer: No. 3 you tell me was there any difficulty?
Participant 3: Earlier we use to just do whether it was effective or not me where not knowing. Whether the chest moment was there or not, baby was breathing or not, we were not knowing the result. We went just doing it blindly. We used to do resuscitation till the doctor used to come when the doctor was not there we ourselves used to do it and refer the baby. After learning it here, we have got some kind of confidence and we know that the baby chest is moving baby is breathing and we know "yes this much I have given it is enough for the baby, we have that much of confidence.
Interviewer: You tell me number 4 about the AIR device, learning the device, getting the knowledge about it, how do you feel? Is it easy or easy difficult?
Participant 4: when the knowledge was given to us it looked easy when we heard it. But when we tried to do it, it was a little difficult. Initially everything is difficult till we learn it and do it, and when we get used to it, it doesn't look difficult. And when we are working with the patient, some things we feel difficult to do. But when we do it nice and good, the happiness it gives to us we feel that the mission comes to us for our help.
Interviewer: You mean even though it was difficult for you to learn, you were happy with the result it cave number 5?
Participant 5: For the last one year I have taken field work. Since that time this project is being implemented I have done mistakes in that many times, because I was not used to practice this machine. Even now also I don't go much there and practice. But a few days back I had been to another hospital for the training as I was not trained here. There also I did mistake. I scored up to 70-80 percent. Then the sir taught me very nicely saying "you have to do this way". Next time again the training was here only that I scored 98%.
Interview that time did you feel it was difficult to learn?
Participant 5: Because I have not given there to do daily practice. And I have now come to field work and I cannot do practice there.
Interviewer: Why could you not practice? Was it because of your personal reason?
Participant 5: Because my duty was here no sir. There was no personal reason. Therefore I could not go to the hospital. And I have done mistakes and got 80% result. The sir saw it and told me about pressure I used to give more pressure. Then I showed them the changes. Then recently I scored 98% and I showed him the result. I did it correctly, previously I was not doing enough daily practice.
Interviewer: Did you not feel attracted towards learning did you not feel like "I should learn it"?
Participant 5: I have done practice in HBB. But for this AIR device I have not gone much inside the labour room. After I came here, I worked on the outside duty only. So I have not done much practice on the baby.
Participant 6: for me also, there was not much of labour room duty initially, I used to work in the OT (operation theatre) for about 2 years. Sometimes their use to be continuous work in the OT and at that time it was not possible for me to do daily practice. Whenever I used to get leisure time I used to come and do the practice. Initially I could not give myself enough time for the practice. And in addition to that I was posted for some training in Bangalore 2-3 times. Add that time also my practice was less. Then madam told me "see your practice has come down" and she asked me

to do the practice. After that I started doing regular practice, and at least twice weekly I used to do the practice.
Interviewer: Madam what is your experience about the training and continuation of practice?
Participant 7: For any device in the initial stage it is a bit difficult to do practice, unless you get accustomed to it. And it shows that you are improving your skills. That gives us the happiness also. And we get attracted and interested in that. That happened to me initially. I used to get 70-80 then I asked myself why not hundred? As I got used to it I achieved near 100% and I got more interested in it.
Interviewer: Initially when you were getting 70, 80% did you have dislike towards the device?
Participant 7: I thought I have to improve, my technique is going wrong. The device is saying to me that I was wrong. I have to improve, definitely, because, how we are doing the practice, it is getting improvement as we go near to 90-95 , we got more interested and I thought I can do it.
Interviewer: As an OBGYN you have seen all these years, so many babies at birth by doing this practice do you feel that there is improvement in you?
Participant 7: Definitely I feel so. Even now, I speak on behalf of all, even without the device we have got a judgment about how much pressure we have to apply. How to avoid the leakage, which position we need to use for the baby. How to avoid the blockage, we have done it so many times that, now we have got a judgment with this rate I am correct.
Interviewer: with the use of AIR device do you feel personally that you are still and knowledge have improved?
Participant 1: Yes, there is improvement.
Interviewer: Can you tell me an example?
Participant 1: one case we have done one baby we resuscitated.
Interviewer: You are still now compared to earlier can you make out?
Participant 1: Yes.
Interviewer: For example about cooking biryani initially you may not be knowing. First time, second time and third time you do mistake, four time you get confidence and you put all the ingredients even with closed eyes. Similarly with experience.
Participant 7: With judgement we do it and with speed we rise. We get confidence that with this pressure, with this position of the baby there should not be any leakage or block it, how much the neck of the baby should be extended. By doing practice daily we come to know all these things. Previously we were not knowing that, now we have got that confidence and we have improved a lot in that technique.
Participant 6: Sir, when I was doing resuscitation on the live baby there used to be some leakage. I used to feel like that. And also along with that I used to feel that the rate was less. I thought it was less than 40. But by practicing on this I improved those two things i.e. rate and leakage.
Interviewer: How do you feel now?
Participant 6: I have improved.
Interviewer: What do you think about your confidence? To what extent it has increased?
Participant 6: It was 80-90 percent now I have reduced up to 99 and 100 percent.
Interviewer: No. 5 What do you feel now? About the resuscitation after this a device being used?
Participant 5: I have improved a lot. The quality of the service to the baby has improved.
Interviewer: What changes you are saying now?
Participant 5: A little
Interviewer: How do you feel about your confidence level?
Participant 5: Confidence level is changed.

Interviewer: What percentage it has changed?
Participant 5: Earlier we had doubt that whether the baby would improve or not. we used to think that at least we should try and do it and complete it. Like that we used to do. Now we know that it will change and the baby will improve. That way we have some confidence now.
Interviewer: so earlier you used to do it because you were supposed to do it, now?
Participant 5: Now the baby will improve. Now we are feeling that the baby will have breathing. After practicing continuously, we are sure that by this device we will improve the baby, till the pediatrician comes and we will save the life of the baby.
Interviewer: No. 4 what do you feel?
Participant 4: By doing this practice our confidence level has increased and we will have the judgment while doing our duty. Our judgment is so high now that we are now confident that we can save the baby till the sir comes.
Interviewer: You feel that you have that capacity?
Participant 4: Yes sir.
Interviewer: No. 5 what changes you feel now?
Participant 5: Earlier when we were doing deliveries. We used to do it and used to get resuscitation. But we were not sure whether it was effective or not. After referring the baby, we used to ask the doctor or any other person about what happened to the baby. But now we resuscitate the baby before the sir comes and we get to know whether the baby is saved and are confident about that.
Interviewer: How do you feel about your confidence in your mind now?
Participant 3: I can handle the baby alone.
Interviewer: You told that earlier, you wanted another person to help for resuscitation?
Participant 3: Earlier I used to feel like that. Now I am confident that I can do it alone, without anybody's help.
Interviewer: No.2 what do you feel now?
Participant 2: Earlier before calling the pediatrician, we were scared that what would happen to the baby. We used to do resuscitation before the pediatrician used to come, but we were not having the confidence. It was fixed in our mind that the baby should be referred. Now there is improvement in our skin and knowledge and we have the guarantee that we will save the baby. That change in improvement is there.
Interviewer: So you had in your mind that the baby should be referred
Participant 2: Yes, first thought was to refer the baby. When we use to see that the baby had no cry, we were in doubt that whether the baby will survive or not.
Interviewer: You had a kind of fear in your mind?
Participant 2: Yes we had fear in our mind.
Interviewer: How much that fear has come down?
Participant 2: 100% it has come down, the fear.
Interviewer: Now can you do it alone?
Participant 2: I can handle alone.
Interviewer: No. 1?
Participant 1: After we got the training, I have become perfect. Perfect means we have improved very much compared to earlier, and we have got competency also, how to do, what to do to save the baby. Before the doctor comes we do half of the work and save the baby and then refer the baby, refer means just to prevent further complications and to have pediatrician's suggestion when the pediatrician is not there in our hospital.

Interviewer: if you have saved the baby, but because of the attenders of the baby you refer, is it so? So that miss behave with you
Participant 3: Yes, we refer, there are some precious babies. The attender will be very conscious and concerned about the baby. We would have done all that had to be done 99%. For that remaining 1% risk we refer the baby. Second reason is that we knew earlier also about the golden minute, it was told to us about it in our earlier trainings also. But now after this device has come, and we have to use them in the golden minute to save the baby. That confidence has come to us.
Participant 6: In the government setup some hospitals are not yet upgraded. Even though they are upgraded sometimes the doctor will not be there or they would have gone outside or somewhere. In such a scenario immediately after delivery the golden minute is very important. Within that one minute the baby has to cry or we have to make it right we need to focus on that and that will help us. The immediate we take with in 1 minute that is very important. Otherwise even if we have all the things and the pediatrician but by the time the pediatrician comes the baby would have died, if we wait for them to come. But if we have this skill, we can save the baby 100%. We do not let the baby to die in front of us. We have that capacity and confidence with us now.
Interviewer: No. 5 was telling something?
Participant 5: The reason for why we refer is, after doing all this, the baby has to be kept under observation. The next step of care is also important. That care is not possible here, because our duties get changed and the attenders also may not take good care of the baby. This is why we refer the baby.
Interviewer: Madam you are both and OBGYN and an administrator. After the arrival of AIR device, the quality of service or care given to the babies in the golden minute improved? And overall quality of the service in your facility about the labour room will it improve? How do you feel?
Participant 7: Yes, definitely the quality of service has improved.
Interviewer: So you mean the quality of service has improved?
Participant 7: Yes.
Interviewer: With this device is there any improvement in your facility?
Participant 6: Exactly sir, I have worked in labour room for 4 years, there is a lot of help with that. All facilities and all the staff learnt from it and they retain the skill also. If we do it for 6 months and discontinue afterwards again we will lose the skills. It helps us to retain the skill and it also helps us to give quality service.
Interviewer: No 5 what do you think? With the presence of this device in your facility, does the quality of service improve?
Participant 5: it will improve if we continue the same.
Interviewer: What do you say number 4?
Participate 4: There is already improvement. Newborn death rate has come down.
Interviewer: No 3?
Participant 3: With the presence of this device baby's death rate has come down. Earlier death rate used to be high. Baby's used to be referred. Deaths used to occur in our hands also. Deaths used to occur after going to other hospitals also. The hospital deaths also used to be high. If those things are given to us and when we are trained, definitely that death rate will come down. Babies will be saved and there will be improvement in the service.
Interviewer: No 2 would you like to say something?
Participant 2 there is improvement.

Interviewer: When we give this device to your hospital and we have not given this device to some other hospitals. How do you compare your hospital with those hospitals?
Participant 1: It is same sir, as we used to do earlier; when there were no materials to use they may be doing the same old way. We have done improvements in our hospital.
Interviewer: Did you talk to anybody when you meet them? Did any of you and them have exchanged your experience?
Participant 2: My husband is also a staff nurse. He is working in PHC in the neighboring taluk. They don't have this device in their PHC. She says that they are facing difficulty in doing resuscitation and they don't know much about how to do the resuscitation.
Interviewer: So now you have more capacity and power with you then him? (all participants laugh)
Participant 3: The staff in those hospitals are not knowing about what happens to the baby after delivery, whether the baby will cry or not, where to refer the baby. Whereas we have the confidence that we are doing it, even if nobody is there I am there, I can make the baby cry and make it breathe.
Interviewer: You tell No. 2?
Participant 2: My husband is also staff nurse. He also calls me whenever he conducts delivery. Even though the baby is normal and crying he ask me "shall I refer the baby?" because what to do if something happens to the baby? There is nobody here in this hospital to take care of the baby. He thought that the attenders of the baby may create a problem asking "you have not taken proper care of the baby" and if something happens to the baby afterwards, what to do? Therefore he was talking of referring the baby.
Interviewer: So he listens to you and respects your experience.
Participant 2: Yes he listens to me.
Participant 5: Sir, this study should go to PHCs also because there, the number of deliveries are less and the staff there do not have much confidence and because they do not know how to resuscitate, they do not do deliveries also.
Interviewer: No 4 you want to tell?
Participant 4: When we are working in the PHC level, after resuscitation for observation, the baby can be referred to a nearest hospital. In the periphery there are so many difficulties and problems, and they have been given targets like this much deliveries have to be done by them. Some staff work under such pressure and some staff work with their own interest. So while they are doing their duty, if such a difficult situation arises, if they help the baby by resuscitation and if they also get this knowledge and practice, we can prevent many more infant and neonatal deaths. It is better that this research goes to PHCs also.
Interviewer: So all of you say that this instrument and the study should go to PHCs also do you all agree for this?
All participants: Yes sir.
Interviewer: How many PHCs are there in your district and in our state can we take the study to all those PHCs? And what challenges and difficulties may come to take the study there, and how to face those challenges, what all challenges we may have to face regarding this can you tell something madam?
Participant 7: It is impossible to start in all the places at a time. But we can start it from the remote areas that is PHCs and CHCs where pediatric facilities are not available there are no private hospitals also. Therefore it is definitely useful there. If we train the staff nurse there, so that at least they can start the resuscitation to the baby and after that they can refer the baby from the remote area and the baby will be saved.

Interviewer: What challenges we may have to implement in the remote areas?
Participants 7: We have to train the staff nurse.
Interviewer: But to go to remote area to train them?
Participant 3: Yes, you can train them by calling them at a common place. They can come to a center and get trained.
Interviewer: You gave the solution, but what will be the challenges so it is at a long distance and we cannot go there. Therefore it is better to call them at a place for training what else?
Participant 4: Manpower and material, finance. For that the concerned administrative officers should discuss about this, because it is very important. For every mother her baby is important if a mother loses her baby only a mother can understand that pain. Others cannot understand her pain. One should understand the seriousness of the problem. Our country has developed so much and if this is also part of our health system and then seriously it is possible.
Interviewer: One is financial problem, for that the administrative people should support ok? All of you agree for this?
All participants: Yes.
Interviewer: And the third thing is it is important and all should understand the importance of this problem. Only this much or is there any other challenge? Madam you tell, how to address the financial problem?
Participant 7: The person who is handling administrative post, has to take interest.
Interviewer: What other problems may come?
Participant 4: Sir, when it comes to many problems, in our government set up there are some schemes like ARS funds. There is so much of ARS fund collected. That fund can be utilized, by taking this problem as a challenge and discussing this issue and if the materials you have given to us if they are given to those PHCs and if they are given the knowledge, it is possible. For example you have taken it as a separate project and have implemented it here. Similarly we have administrative officer come OBGYN doctors everywhere in our department. They can procure these materials within their capacity, and under their supervision if all the staff nurses work, it will be improved. ARS can be helpful in this regard.
Interviewer: What challenges may come?
Participant 3: To bring the parents, ASHA workers have to be trained. First challenge is the patient should go there, and the patients should have confidence in them.
Interviewer: Can ASHA workers learn this?
Participants 7: No sir.
Participant 3: They are supposed to take patients the patients do not go there thinking that there will be nobody.
Participant for the staff nurse should get confidence first. If they talk to the ASHA workers it will be successful to bring the patients. Now it has been made compulsory to all PHCs to conduct at least 10 deliveries per month. But the staff there have no knowledge, how to conduct the deliveries. There also the labour rooms have to be improved.
Participant 7: It is difficult to train all the staff nurses at the remote areas. The number of staff nurses is more. We can get OBGYN and pediatric specialists and train them first and then let them train all the staff nurses in a large scale.
Interviewer: Do you mean we need to train some persons and inter they should train others?
Participant 7: It is difficult to train each staff nurse. We should have a cluster plan, and each cluster can appoint a gynecologist and a pediatrician and train them first. Afterwards let them train the staff nurses in their cluster.

Participant 5: When any project or program comes it is very important to monitor it. For example let me take ourselves, if we do not do the practice, we knew that somebody will observer us (laughs). Therefore we decided to do the practice otherwise our madam will ask us or it will be seen there as it was online. That if we work here, that will be counted there. Like this in each and every work system, sometimes it is not just enough to tell them to work, somebody has to be there to observe so that it goes on correctly.
Interviewer: Monitoring?
Participant 6: There should be a monitoring system.
Participant 5: If there is a monitoring system, they go on carrying out their work correctly.
Participant 6: There are so many programs in the government sector. But some of them become failure because there is no monitoring system. Nobody does the monitoring to see what is the output. What is the outcome? Whether they are doing it or not. Nobody does the monitoring. If we strengthen the monitoring system this program will be correctly done even if there is monitoring, the problems which are there with the staff, they should be resolved there only.
For example in your study, sometimes the device may not be working. If the device is not working and the staff are not working, there should be somebody to ask. If the device is not working you get it corrected immediately. And if the mannequins are leaking you get it exchanged. Whenever there is any hurdles in our work, if you get it corrected immediately, we carry on the work. In the government set up if some equipment gets a problem, it takes so much time to get it repaired. If there is a gap in the work, we also get kind of frusted. These things do happen.
Interviewer: So monitoring is important, how many of you agree to it?
Participant 6: Yes sir.
Interviewer: In the government setup, monitoring or lack of monitoring is a problem?
Interviewer: Do you all agree to it?
Participant 6: Yes
Interviewer: Anybody else likes to say anything more about this? Which program failed because of no monitoring? And about the resuscitation program.
Participant 6: We did NSSK program, there was a training also in that program. They just give us the training. But after coming here, how we did it, nobody cared about it.
Interviewer: So, you mean there was no benefit out of it according to you?
Participant 6: Yes, yes and those who got the training, after coming to their facility nobody practiced it. Most of the staff did not practice. And there was nobody to do monitoring of it.
Interviewer: Does this AIR study help in improving the clinical care? If it is implemented everywhere after passing all the barriers?
Participant 6 yes yes.
Participant 1 Yes it can be improved.
Interviewer: How do you say?
Participant 7: If we train the staff nurse they will definitely use it, in a proper way. Mortality will be reduced.
Participant 6: Surely it will help in reducing the infant mortality rate. It plays a very important role.
Interviewer: So you mean, clinical care also will be improved?
Participant 6: Yes, yes our skills will be retained, our knowledge will be improved. The new stuff also keep on coming or some many come after getting transferred here. If there are also trained and if their skills l also develops, the clinical care will improve.
Interviewer: No. 5 tell me how the clinical care can be improved?

Participant 5: Improvement is taking place because of the use of this device.
Interviewer: If the training is done throw out the state and throw out the country, what do you think about the improvement in the clinical care?
Participant 5: Sir, IMR is reducing.
Interviewer: Will it reduce further by implementing this AIR device?
Participant 5: Yes.
Interviewer: No. 4 what do you say?
Participant 4: Yes sir it will reduce. Actually, our confidence level has increased, and the quality of the work also is increased. So automatically the outcome is also good. And whatever is the objective of this AIR device it will be acute 100%.
Interviewer: No.2?
Participant 2: By doing this resuscitation with this AIR device for a primi gravida delivery there will be 8-12 hours of time for the delivery to occur. The staff nurse at that time have in their mind that if they are in distress, it has to be referred. Now we have the capacity to manage the baby even if it is in distress. For that we should not hesitate to conduct the delivery. Therefore they refer the delivery case also.
Interviewer: You mean at the primary level care centers also the deliveries can be done and care also can be given.
Participant 2: Due to that the delivery are occurring less. If this study is implemented. We can conduct the delivery with confidence without any complications.
Interviewer: Anybody else likes to say anything more? About your experience, training and the confidence, last remarks?
Participant 2: It is a good study, and we need to have refresh training frequently (all participants laugh).
Interviewer: Do all of you agree to it? You all have refreshment training?
All participant: Yes.
Interviewer: No.2 your last words?
Participant 2: There is a lot of improvement.
Interviewer: what else?
Participant 2: It is better if refresh training is also done.
Interviewer: No.3?
Participant 3: When we are alone while conducting the delivery now we have improved, and we are confident enough to conduct delivery alone. And after the study is completed please do not take these materials back. We will use them. Otherwise what happens is, after the study is over, we will not be having the instruments and we may forget the knowledge and the skill. If they are there we keep on practicing on instruments.
Interviewer: No.4?
Participant 4: Sir, you gave us the training and now you called as personally for this interview. This is the first experience for me in my service that I have been called for the interview. Everybody does the training. But after the training is completed nobody talks about it afterwards. Nobody ask about our personal problems while doing the work, about how it was, was it good or bad. Only in this project we have been asked about these things.
Interviewer: By this we are thinking of improving it still more. That is why we have called you here.
Participant 4: We feel good about this, you have brought this device, and it has been helpful for the patients. If even in future, such devices are brought, it will be of help to give service to the

community. Let your help continue in future and bring new search projects to us and we also will cooperate with you.
Interviewer: No.5 what do you say?
Participant 5: Now there is improvement the device should be continued and refresh trainings are needed, once every 3 months so that we will come to know whether we are doing it correctly or not and monitoring should be there.
Interviewer: No.6 what do you say?
Participant 6: Resuscitation itself is an emergency protocol. Emergency can happen at any time and at anywhere. Therefore such staff who are working in the labour room or in any other department should have knowledge and skill. They should have, must and should have. Everybody should have this knowledge. And to retain our skill we should be practicing continuously, maintaining the consistency is very important.
Participant 7: Thank you very much. I am thankful for having our CHC for this project. We have worked in RAPIDIRON project also and we are there for any future projects, thanks to all of your study personal for coming here and teaching all the skills. And in between you came and assessed our work also. And have given us a chance to improve ourselves. We have improved a lot. Definitely we will do good things, our staff and myself. Thank you very much for the research unit.
Interviewer: Thank you all.

11104_20240120_STAFF NURSE

Moderator: Namaste Madam
Participant: Namaste
Moderator: You must be wondering why you have been called here today.
Participant: Yes.
Moderator: The main reason for calling you here is because you had participated in a study called AIR study.
Participant: Yes, I had participated.
Moderator: In the AIR study, you had used a machine. Can you tell us what exactly you did in the study?
Participant: When the baby is delivered, it may have asphyxia. When it has asphyxia, it was taught to us how oxygen has to be given to the baby.
Moderator: Okay, so the study was about this.
Participant: Yes. In this study, they made us practice for a year.
Moderator: Okay. So, you have practiced for a year now.
Participant: Yes.
Moderator: I will ask you for some information related to the study. How the study started, what were the uses of the study, what were the problems, whether it was of any benefit to you, were you apprehensive about anything etc. I will ask some such questions in the form of a discussion. By asking you this, I will come to know whether there were any benefits of the study, how well the staff nurse or doctor learned the technique, whether they had any problems, how we can improve this further….to learn all this, we are conducting this interview. In this interview, there are no right or wrong answers. You have to express your opinion. You have to also tell if you had any complaints about the study. Because we will learn from this and make improvements in the future. For some time, please keep your mobile in silent mode. There are no right and wrong answers. Please tell everything that you feel, openly. We will learn from this and do things more effectively. If you agree, shall we begin?
Participant: Yes.
Moderator: What do you work as?Participant: I work as a staff nurse.
Moderator: Since how long are you working?
Participant: I have completed 30 years of service.
Moderator: In these 30 years, how many deliveries have you conducted?
Participant: I think at least about 10,000.
Moderator: Okay. In the past or even now, in the PHC, what problems do babies have when they are just delivered? Immediately after birth?
Participant: When we are delivering, the only worry we have is that the baby may be asphyxiated. And at the PHC level, the doctors are not available. We have to handle it ourselves. At such a time, we have a lot of difficulty if the baby is not breathing properly.
Moderator: You said that the doctor is not available. What else is not available?
Participant: The ambulance was not available previously. If we have to convince the patient and refer them, the patients do not want to take the baby and go. And Pediatricians are not available. They are available in other cities. We have to send the baby to a distant place. In the meanwhile, if something happens to the baby on the way, we lose the baby.
Moderator: So, do you feel that asphyxia is a big problem?
Participant: Yes, it is a big problem.

Moderator: They do not want to go to a bigger hospital, they do not want to go where you refer them, the pediatrician is also not available….
Participant: They just do not understand…. that, it is an emergency. They do not understand….
Moderator: Why do you think it is an emergency?
Participant: If the baby does not get oxygen, the heartbeat will stop, isn't it? In such a situation, we cannot do anything.
Moderator: So, asphyxia is like a challenge to you.
Participant: Yes, it is a challenge.
Moderator: During your nursing training, you must have received some training for resuscitation of the babies, isn't it?
Participant: There was no training then. We used to give mouth to mouth resuscitation.
Moderator: You used to resuscitate the babies by giving mouth to mouth resuscitation?
Participant: Yes, if we wanted to save the baby. We have saved many babies by giving mouth to mouth resuscitation. Then HIV came….and other infections came. Then we used to hesitate.
Moderator: What were the other reasons for you to hesitate? One was HIV.
Participant: Infections. The baby used to get infections. We were not sure whether the baby was getting oxygen properly. We used to just blow air into the mouth using our judgement. We did not know with what speed it was going, whether the baby was getting harmed by it, or what the level was. We just wanted the baby to breathe. The baby might also get infection at that time, isn't it? But we used to just resuscitate the baby and send it away. After it started breathing a little. Then after it reached the Pediatrician, they used to say, "The baby has a hematoma. It has convulsions." Such problems used to occur.
Moderator: Did you have complete knowledge about resuscitation?
Participant: Not complete, not at all. I did not have any knowledge.
Moderator: You used to blow air into the mouth and try your best to save the baby…?
Participant: Yes, that is all. Only this was possible in the village. It used to be too late by the time the doctor came in case of an emergency.
Moderator: And over the years, was there a gradual improvement?
Participant: Yes. It happened when KLE involved us in some projects. Even before this, they had trained us once before. About how we should resuscitate the babies.
Moderator: Leave apart the KLE projects. From the Government, how did things improve gradually?
Participant: We used to do suctioning and administer oxygen. That is all. We got the AMBU bag for baby resuscitation only after the KLE project.
Moderator: You did not have an AMBU bag before that?
Participant: No, we did not.
Moderator: What about oxygen?Participant: We had oxygen supply. We had a cylinder and the tube. We used touse it. And we had a small Oxygen face mask.
Moderator: Were you told how much to give and for how long?
Participant: Yes, we were told. 30% to 40% was to be given and if the baby was to be shifted, the oxygen cylinder had to go with the baby.
Moderator: Were you taught any extra skills?
Participant: The baby was held upside down and slapped on the back. That was how it was taught to us and that was what was we used to do. They had told us to stimulate the baby's feet. How many times to do it and how to do it, we did not know. We used to keep hitting the baby till it cried. The back used to become red. That was what we used to do.

Moderator: Did you do anything other than what you mentioned?
Participant: We used to do suction and keep the baby warm. We used to givethe baby to the mother. The baby would definitely not breastfeed. We used to keep the baby as warm as possible and shift the baby as soon as possible. We used to run around to arrange for a vehicle. We used to be all alone to do all this. One ward boy was also available.
Moderator: Did the Government train you in some additional skills?
Participant: No. They did not give us any special training for this. The Pediatric part wasn't ours at all, is what was understood. We had to conduct the delivery and the Pediatric part…. The PHCs started handling deliveries rather late. Previously, all women were referred to hospitals for delivery. Even after the PHCs started handling deliveries, they called us for special training quite recently. It was not there previously. We did the same old procedures for almost 15-20 years. Only in the past ten years….
Moderator: Did you have any other problems other than this?
Participant: Yes, we had problems. If the baby had any problem, we were scolded saying, "When you could not handle it, why did you not refer the patient?" And if the number of deliveries came down, we were scolded for that also. We were in a dilemma whether to handle the patient or not. If the cord was present, if it was preterm, if there was bleeding P/V, if any of these high risk factors were there, or if she was a Primi….We used to get really scared of
taking in these patients.
Moderator: So, all these problems were there previously.
Participant: Yes.
Moderator: And after all this, our KLE project came. And then the AIR study. Please tell me what was there in the AIR study.
Participant: In the AIR study it was told how to receive the baby, within how much time it should cry… How important that one minute is. Within that one minute how the oxygen should reach the baby. And that if oxygen reached the baby, it will not have any problems. And they taught us the methods to make oxygen reach the baby. After that, we have the confidence.
Moderator: What method did they teach you?
Participant: They gave us the AMBU bag for resuscitation. They taught us how to suction. They taught us how to position the baby after delivery. They taught us everything that needs to be done within one minute. We used to get flustered previously; we used to panic as to what needs to be done first. On one hand the patient is bleeding, it is time for the placental delivery, the cord had to be cut…we used to panic as we were alone to do all this. They taught us to do everything in a step-by-step manner. Now we are real experts at it. They taught us to keep the instruments ready, to know which instruments might be required. They taught us all this. After we keep the instruments ready, after the baby arrives, we manage to do everything within a minute. We have no
difficulty at all.
Moderator: Did they give you any machine?
Participant: They gave us an AMBU bag and two masks with it. One for a big baby and one for a small baby. If the baby is small, the big mask will not work because there will be a leak. They gave two masks. If the baby is premature, we use the specific mask. And they gave a suction…. We have a small suction machine. Previously we had a foot suction and then we got the electric suction.
We clean the suction machine because that can also cause infections in the baby. Now once we clean it and keep, it clears everything very speedily. They also told us what clothes the baby should

have, how to keep it warm, how to clean it, how to stimulate it…. They gave us all these things. Then, after telling us all this, they gave us a machine for one year.
Moderator: Yes. What is the name of the machine? Tell us about the machine.
Participant: In the machine we get to know how much oxygen is being delivered and how many breaths we have given the baby. Are we giving it correctly or not…whether oxygen is going in or not…the machine tells us this as soon as we connect it. Previously we used to just go on delivering breaths, as told to us. But now, after the machine has been given, it tells us whether we are doing it correctly or not. Whether the level of oxygen is correct, whether you are giving it in the correct position and whether you are doing it correctly.
How many times you are giving breaths in a minute, whether you are giving it effectively…
Moderator: How can you make out whether you are giving correctly or not?
Participant: It gives a signal.
Moderator: What type of a signal?
Participant: It shows a red line or a green line. In the end it also tells us how many breaths we gave. Whether we gave less or more. The machine also tells about how much oxygen has gone.
Moderator: Was there any benefit because the machine was given?
Participant: There was a lot of benefit because of the machine. Because previously, when we were giving breaths, we used to apply a lot of pressure.
When we are anxious, this happens. We give either less or more. But with the machine that does not happen. When the machine tells us whether we are doing it correctly or not, we immediately change. When the red light comes on, we know that our position is wrong. So, we change our position and correct immediately. In this way, the machine has helped a lot.
Moderator: So, you say that the machine was of help?
Participant: It was of a lot of help.
Moderator: Did your technique improve because of the machine?
Participant: The technique improved a lot.
Moderator: How do you say so?
Participant: A lot. Because time was saved. And the life of the baby was saved because it was done correctly. And Oxygen was also delivered correctly to the baby. These three important things happened. There was no other issue. There is no other issue at all. We used to give breaths even before but now the oxygen is going correctly to the baby and it has worked well and the baby has also improved.
Moderator: You told us about the red and green lights. What do you understand by these lights? What does red mean and what does green mean?
Participant: Red means there is a mistake. That we are not giving it properly. And green means that we are giving it correctly.
Moderator: So, by doing this, have your skills improved?Participant: Yes, they have improved a lot. We can now take in any patient without any worry. And right from delivery of the baby, which we were worried about previously, "Now the mother is fine but will the baby have any problem?" But now we are confident that we can handle the baby. Yes.
Moderator: Any other improvements?
Participant: In very little time, and in very few steps, anyone at all can do it. They have taught us how to save the baby's life by using such a simple method. Previously I used to get scared. I had to send the baby to the hospital. There the pediatrician used to do all sorts of things to the baby which I do not even understand. But now I feel that I have become so skilled, I save the baby's life

in a minute, even better than the pediatrician. That is how I feel. I have gained so much confidence now.
Moderator: Have you been able to save any baby? Have any such cases come to you?
Participant: In this past one year, I have saved two babies. By using this to resuscitate the baby.
Moderator: Can you explain how you did that?
Participant: The woman delivered and the baby had a cord (around the neck). There were two loops. She was a multi, it was her second delivery. I had taken the case and delivered her. The baby became completely greenish in colour. When I saw that, I immediately cut the cord and separated the baby and checked the heart rate. The heart rate was around 80 to 90, the cord pulsations were present. But the baby was not breathing. After suctioning and immediately starting resuscitation with the AMBU bag, the pulse rate increased. After that, after keeping the baby warm for some time, the baby started crying. I referred the baby after this. Within two days the baby was discharged.
Moderator: Before this study came in, in your place of work, was there anything to help you resuscitate the baby?
Participant: No, there was nothing. We had a baby tray. We used to wrap the baby in a cloth. Then there was the suction machine and oxygen. That is all.
Moderator: How were your skills at the time?
Participant: We used to receive the baby, wipe it. Oxygen… if it is not breathing, we used to do suctioning. We used to rub it and if it still did not cry, we used to wrap it warmly, administer oxygen, inform the patient and refer. Sometimes the babies used to die in transit.Moderator: So, these were the only facilities you had previously?
Participant: Yes, that is all. Only these facilities were available. Now that this has come in, the government has given us this training.
Moderator: What training has the Government given you?
Participant: The same. Use of oxygen, the AMBU bag.
Moderator: What did the Government train you in?
Participant: To do suctioning, to do AMBU bagging. That is what they have taught us in SBA training recently. Two years ago.
Moderator: SBA is Skilled Birth Attendant?
Participant: Yes. To resuscitate the baby, to stimulate it, to do AMBU bagging….That is all that was taught. But we became experts because of this machine.
Moderator: Okay. Did you like this machine or not?
Participant: I liked it.
Moderator: What did you like about it? How did it help you, why do you like it?
Participant: Because the machine has a timer, it is very correct. It shows all three at the same time. We need not keep seeing one after the other. It shows all three at the same time. It shows the oxygen level, it shows whether we are giving proper breaths and it shows the position…. whether we are doing things correctly. That is why I like this machine a lot.
Moderator: So, it shows you whether all these three are correct, at the same time.
Participant: Yes, it does.
Moderator: What colour is displayed if it is correct?
Participant: Green colour.
Moderator: And if it is wrong?
Participant: Red colour.
Moderator: What else did you like in this machine?

Participant: Once we adjust it, we need not keep adjusting it every time. Like we have to do other preparations each time, we need not do anything to prepare the machine. It is already ready. We just have to assemble it. We have to assemble it and start using it. So, there is not much effort involved. For someother machines, we have to assemble it, use it and then it starts showing us. For this one, it is not like that. It has already been set and given. That is why there is no problem with this machine and we feel it is systematic. We feel confident when it is there, that we are doing things correctly. We do not need anyone to tell us what to do. Otherwise, some higher-up would come and say, "You are not doing it properly." Here the machine itself tells us, isn't it? It does not matter whether anyone else is there or not. Sometimes the delivery happens during night duty. The doctor may not be there. But the machine makes us feel that someone is there with us, to guide us. "You are doing it correctly." Or, "You are doing it wrong." Immediately….and in front of our own eyes!
Moderator: So, it is like a teacher.
Participant: Yes, like a teacher! The situation at the time is not such that someone can come and tell us, or such that we can go and ask someone else. Everything is available in our own hands. That is why I like the machine very much.
Moderator: You said that when the GREEN signal comes on, you know that you are doing it correctly. In which other way can you come to know that you are doing it correctly?
Participant: (Pause) The baby improves, isn't it?
Moderator: Yes.
Participant: When I do it correctly, the pulse rate increases and the baby becomes pink. That is another way for me to know that I am doing it correctly.
Moderator: What are the things that you do not like in the machine? There must be something that you did not like, isn't it?
Participant: It should have sounded an alarm bell.
Moderator: Okay.
Participant: As soon as there was a mistake, it should have made a "beep- beep" sound.
Moderator: Okay. That is an additional feature you would have liked.
Participant: Yes.
Moderator: But is there anything that you disliked about the machine?Participant: No, the machine is good. But it is a little heavy. So, it gets tilted to one side. But it will become better and lighter machines will come in in the future. That is what I feel.
Moderator: But in this machine….
Participant: There is no other problem. Everything else is fine.
Moderator: Anything that you did not like?
Participant: Nothing else.
Moderator: It is a little heavy?
Participant: Yes. When it is put on the mouth. On one side it feels light and on one side it feels heavy.
Moderator: Okay. Anything else?
Participant: Nothing else.
Moderator: Did you face any challenges while using this machine?
Participant: Initially it was confusing…. "Why is it showing this and what does it mean," etc. Then as I practiced, I got to know how useful this machine is to me. I got to know the number of mistakes I was making when I was not using the machine. The machine started telling me how

many mistakes I might have made in the past. It was telling me correctly. I have realized how useful the machine is to me. I am certainly not making any mistakes now, all because of the machine.

Moderator: Hmm. Did you feel anything else was challenging when you used the machine initially? When you got trained initially. In the beginning of the study.

Participant: Yes, initially, I did not understand how the machine was operating…whether it was showing our mistakes or whether it was…. In the beginning for a few days in I did not understand this at all. Then I understood why it shows what it shows and what it means; and that, "It is correct – I am making a mistake here." I did not know at all, what mistakes I was making.

Moderator: Any other difficulties in the beginning, when you used it?

Participant: Sometimes it would not get fixed at all. And then it used to get fixed but it kept showing red. I kept operating it and it kept showing red. Only later I came to know the number of mistakes I made. In the end I understood when I looked at it. And I understood what I was doing wrong only because of the machine. Then I started doing it in the correct manner. Then I understood what I was doing and started doing it correctly. I understood that I am doing it correctly also because of the machine. The machine is really very important.

Moderator: Did you have any other challenges in the beginning? Maybe while you were practicing?

Participant: While practicing, the main challenge was with oxygen. I understood how important it is that the baby gets oxygen within a minute only because of the machine. I did not know that at all.

Moderator: Okay, you told us what difficulties you had and also what you did not like about the machine. Now, please tell me how you feel this machine can be improved. Should anything be changed in this machine? You told us some time ago that the machine was heavy. Do you feel that the weight should be reduced?

Participant: If the weight is reduced, it will be lighter. And it should have an alarm.

Moderator: Okay. Anything else?

Participant: I feel it should be attached to the side. Right now, it is fixed to the ambu bag and we hold the mask and use it. It is close to our eyes. It should be close but what I feel is that it should be connected but kept away rather than fixed. The attachment is important but can we not keep it a little away rather than fixed? Like how we keep this mobile phone (shows how it is connected).

Moderator: Okay. Let us see about that. Tell me what else you think.

Participant: That is all.

Moderator: Okay. Now you have learnt all this from the machine. Do you feel that the learning is easy or difficult?

Participant: It is difficult.

Moderator: Why do you say so?

Participant: We have to get to understand it. The ones who do not understand the concept, will not be able to do it.

Moderator: Why do you say so?

Participant: We do this work routinely, isn't it? In our work, we have to realize where we are making mistakes. When the machine is telling us something, we have to understand what it is and change accordingly. If we do not understand and continue doing the same mistakes, there is no use at all, isn't it? The machine has been provided and all the equipment has been provided. If we donot have the knowledge and do not understand what is going on and continue doing what we

do, it is a mistake, isn't it? Then what is the use? But even though it is difficult, it is of great use to us. We should try to understand it.
Moderator: Okay. Do you feel anything else is difficult?
Participant: Nothing else.
Moderator: How long do you think is needed to learn to use the machine?
Participant: I needed about 6 months….in 2 to 3 months I was doing it perfectly. It wasn't so long. But who can comment about others' capacity? How well they learn…. In our place itself there are 2 or 3 such persons. There are always those who understand what is being done and do it properly and those who just do it for the sake of doing it. If you try to understand what is being done, one can learn it in 2 to 3 months. If one is conducting deliveries and is in touch, they should be able to do it perfectly in 2 to 3 months. But now that this has been given for such a long duration, some might take even 6 months.
Moderator: So, because you have conducted so many deliveries, 2 to 3 months was enough for you.
Participant: Yes.
Moderator: What about the ones who have just finished training and are conducting deliveries?
Participant: They will need a year.
Moderator: They will need a year?
Participant: Yes. They will need to learn. It will not get into their head that easily.
Moderator: Okay.
Participant: But considering the way we have been taught, it will certainly get into the head. They have interviewed us so many times and made us practice on the babies so many times. So many times senior 'Sirs' have asked us questions. Considering this, if training is given in this manner, we should be able to learn perfectly in 3 months. If we are called for training only once or twice in a year, we will not improve, we will not learn. We will forget. We need this kind of training. You have called us so many times within a year….
Moderator: How many times did they come to train you?
Participant: See, the exam itself was taken twice. They came to our place thrice. And they visited us every month. How the baby (mannequin)is….whether the baby has air…..whether there is any leakage….They themselves came and checked this. And they used to ask us over the phone. Due to this, as soon as I arrived in the morning, I used to go to the baby and see this myself.
That is the reason I became perfect in doing this. Now, we can answer correctly to anyone who might ask us.
Moderator: You have used the machine for almost a year now. Do you think your baby resuscitation skills have improved due to this or not?
Participant: They have improved.
Moderator: Why do you think so?
Participant: Because I was able to save two babies. The babies got admitted with the pediatrician and came back. Previously babies used to die. They used to have convulsions. They used to be admitted for even a month. The cost was so heavy. The woman used to have a 'normal' delivery and the bill with the pediatrician used to be 50,000 rupees. And till all the medications are over, the baby is fragile, isn't it?
Moderator: Hmmm. Do you feel that your skills have improved now?
Participant: Yes, I do.
Moderator: You have saved two babies….

Participant: Yes. And I have gained a lot of confidence. Because we used to have a lot of problems. I have worked in the PHC for 24 years and I used to be the one who used to conduct deliveries. I was alone. Giving mouth to mouth resuscitation to the baby was a big problem for me. I simply had to conduct the delivery. The village folk would not go anywhere else. They are poor people. They do not have money to spend at the hospital. They used to say that, "If it is to die, let it die." At such a time, I was considered the savior. Then I had to give mouth to mouth. So, I was waiting. I used to think, "Maybe something will come in. Something to help us in this situation." Now we have no problem. We are very bold.
Moderator: So, you feel that your skills have improved.
Participant: Yes.
Moderator: There is a machine available in the place that you work now. How do you feel is the quality of service in your facility now? Has there been an improvement?
Participant: It has improved. The number of babies that we refer has decreased now.
Moderator: Okay. What else has happened?
Participant: We are now confident that we can take on any delivery now. Even if the woman comes at night, we can handle. If needed, we can refer the baby after the 108 ambulance or vehicle arrives. And we get calls from the doctors, the pediatricians, that you have resuscitated the baby well.
Moderator: So, the doctors tell you this?
Participant: Yes. The Pediatrician asks us – "Who delivered the baby? Have you resuscitated the baby before referring?" We tell them that we have done it. Then they say, "It was good that you resuscitated the baby before referring."
Moderator: So, the doctors say this to you. How many doctors said this to you recently?
Participant: Yes. Here in Chikkodi, Dr Salagare (private practitioner who is a pediatrician) is there. He has said so.
Moderator: Okay, so he has told you, "You have done well."
Participant: Yes.
Moderator: For the health worker to be trained in using this device, do you think there is any difficulty? What do you think? Is it easy or difficult?
Participant: It is easy. The difficulty is that they have given these machines to so many villages. So, it is difficult for the providers.
Moderator: But is there any difficulty in training?
Participant: It is difficult, isn't it? They have to travel long distances…. they have to come into the villages. There they have to see that everyone is assembled and then provide the training. The staff has to come from many different places. So, suitable arrangements have to be made. There is some difficulty for the ones providing the training but no difficulty for those who receive the training. They can get trained comfortably. To provide training in the villages, it may be a little difficult.
Moderator: So, there is a little difficulty in providing the training. Is there in any difficulty in following-up?
Participant: There is no difficulty in following-up. Weekly once, one may visit and do it.
Moderator: Anything else about the training?
Participant: The training provided was very good.Moderator: Okay, it was good now. But what about when we want to do it in the future? Can we anticipate any difficulties?
Participant: Now, there will be no difficulties. Everyone knows now that this training is good and they will come forth willingly. The doctors and the nurses have all realized that this training is

very useful. They will be happy to receive it. They will also not trouble you when you are providing it.
Moderator: If we think of introducing this AIR study machine all over India, will we be able to do it or not?
Participant: You will be able to do it.
Moderator: Should we do it or not, in the first place?
Participant: You should.
Moderator: Do you think we can do it easily? Introduce it all over India?
Participant: It is not easy. It will be difficult. But it should be done.
Moderator: What will be the difficulties?
Participant: It will be difficult to make all the arrangements. To go to all the villages. And the staff there is limited. They will have to come, and take the training. But it should still be done.
Moderator: Okay. It should be done. What other difficulties might we have to introduce this to the whole of India and how should we overcome the difficulties?
Participant: The budget is not your problem but the problem is for the Government. The budget is a big problem. Spending is not done where it is supposed to be done….
Moderator: So, that the government may not allot the budget, is one of the problems.
Participant: Yes. And the ones who are using the machine should use it properly. They should care for it. It is so useful. It is no use discarding it in a corner. The way you have trained us to use it, that is the way it should be used. It should be kept near the emergency tray and should be checked on a daily basis. It should be checked every day. It should be kept carefully.
Moderator: Okay. We want that the whole of India should use this machine. What other problems might we face in doing so? You spoke about the budget and that the staff should keep it carefully… What other issues are there?Participant: Vehicles will be needed to go all the way there. Money is needed….and time is needed. The Government should pay attention to this. They should agree that it is important. Like they conduct so many programs everywhere, this should also be a program…. program to save lives. It is such an important program. Wherever deliveries are conducted, this should definitely be available there.
Moderator: Do you think that the different doctors all over might support this?
Participant: Yes, they might.
Moderator: You do not think that that is a challenge?
Participant: No.
Moderator: Do you think all the staff will support this?
Participant: Yes, they will. The ones who conduct deliveries will definitely support this. Because there is a constant problem. Only the ones who conduct deliveries experience it. Here in the cities, doctors conduct deliveries. They have complete training, they would have studied MBBS, they would have practiced as doctors. They have no problems. But the staff nurses would not have received much training. This is not even there in the training books. Only recently it has come into the books. So, at present, this activity has to happen at all places.
Moderator: So, you say that the doctors in the city and the medical colleges have more knowledge whereas knowledge is less at the village level.
Participant: Yes. And also, the equipment may not be available. What is the use of having knowledge when there is no equipment? One bit may be there but the other one may not be available. Even if a doctor with all the knowledge happens to come in there, it is of no use because equipment is not there. The labour room may not be proper…. there may be no labour table when a patient comes in labour. Such things happen. For instance, we need all the equipment to

resuscitate. If that is not there at all, how can we do it? Equipment supply needs to be ensured. The Government should supply.
Moderator: Okay. You have told us your views. Other than this, do you want to say anything about the AIR study, or the AIR study trainers or those doing follow-up or anything? Please tell us whether they have done their job well or even if they have not done something well…. because we want to make improvements on what was done.
Participant: The ones who taught us are very well learned and they taught us very well. If they teach even better, it will be good but at present, they taughtus very well. They spoke in both languages – Kannada and Marathi. Even if someone did not understand, they explained really well. I personally liked the training a lot. This training was not conducted in a big hall with a hundred participants with everyone straining to see what was being displayed on the table. This training was not like that. This was given to each individual person and that is the reasons we became experts in it. It does not happen like this in the Government. What do they do? They call 50 persons, or say 25 or 22. They take it like a classroom session and then they do not call each person to try. Even though you had 4-5 hospitals to cover, you called only two of us at a time for the training. That was very good. The training should be in this manner.
Moderator: So, in your opinion, the Government calls 50 persons and conducts training at once.
Participant: (Laughs) Not like that! They call once the budget is available. Then we all have to go at once. We have to adjust our duties and go. And once the training is over, we have to join back to our duties immediately. How will anything enter our heads? And we are not sharp at the time. They do it at any time of the year. There should be a repeated exposure, isn't it? When the machine itself tells us our mistakes and it has been given to us, we need to look after it very carefully.
Moderator: How often do you think the training should be repeated?
Participant: At least once in 2 to 3 months it should be repeated. Someone should check whether we are doing it right or not, whether the equipment has been maintained properly or not.
Moderator: What do you have to say about the AIR study staff?
Participant: All of them are good. All the staff who were allotted for me were good.
Moderator: By doing this study, did your workload increase?
Participant: No. Because we did it step by step, our time was saved, our skill improved and we also got confidence. Because, this is not new to us. It is what we used to do previously, but it has been taught so beautifully, so that we do it properly. Previously, in a hurry, we used to do anything at all.
Moderator: If we want to make some improvements in this study, what do you say we can do?
Participant: Nothing. Supply the machine everywhere, give AMBU bags, give suctions. Who knows when the Government has funds.Moderator: This is the last question. What do you think about the AIR study?
Participant: Very useful training. If one can save a person's life, it is really been of great use to us. I hope that everyone gets the training and everyone becomes skilled. My service period is almost over. But everyone should take this training and become skilled. They should understand how useful this training is. It is very useful. Like we save a woman's life – the mother's life, in the same way we save the baby's life.
Moderator: Do you wish to add anything? Your opinions or thoughts?
Participant: Our Government may not have the facilities to give us such a training and that is why they may not have provided it. But now that we have received the training through KLE, our Government staff have become very knowledgeable. They have also become confident. That is

why they feel that such training should be provided everywhere. But how is it possible for you to provide it to everyone? But we hope you can. I am very thankful to the team for providing this training and for making us skilled. And I am very thankful for the machine that has been provided to our hospital. The status of the hospital has increased because of this. The number of deliveries has increased, the capacity had increased. I am very thankful for this.

Moderator: Thank you for participating in this discussion and giving us good information.

11101-20240120-Medical Officer Male

Interviewer: Sir, what are you working as in the PHC?
Participant: I am working as a medical officer in primary health centre (PHC).
Interviewer: For how many years you are working in that PHC?
Participant: About 17 years.
Interviewer: Are you taking care of women patients? Or are you looking after only about administration?
Participant: My major responsibility is administrative work. Sorry sir, I spend more time in taking care of the women patients. Administrative work is less for me.
Interviewer: What all care you give to the women? In my opinion I am asking about mother and child health.
Participant: To tell you overall, we take care of women from the time she becomes pregnant till her delivery safely. That includes her monthly checkups. Giving her tonic tablets, calcium tablets, giving T.T. injection doses and also I give instructions to my ASHA workers to visit the mother and take care of her till 42 days after delivery and I also advice the mother to get her baby vaccinated in our PHC. We tell her the dates of vaccination and to bring her child on those days. Especially we take more care of the mother.
Interviewer: Do you conduct delivery in your PHC?
Participant: Yes, we conduct deliveries in our PHC.
Interviewer: You also conduct delivery
Participant: Yes. I also conduct delivery, but now our PHC is 24x7 working for deliveries, there are duty staff nurses who work in shifts of 8 hours, normally they don't call me to conduct delivery, but when there is any complications during delivery they ask for my help.
Interviewer: On an average how many deliveries you conduct or which are conducted under your supervision? In your 17 years of experience.
Participant: About 40-50
Interviewer: How many you have observed?
Interviewer: Deliveries occurred under your observation? Is it in a month or….
Participant: When I was working in another PHC as the lone medical officer there, I used to conduct 3-4 deliveries in a month on my own without any helper. When our 24x7 PHC started usually nursing officers conduct thedeliveries. After I examine the delivering woman initially once, after that they do the following work in delivery. If there is any complication then only they call me, otherwise they don't call me.
Interviewer: Will you be monitoring the delivery?
Participant: Yes. I will be monitoring the process.
Interviewer: According to you, after the delivery, what are the main complications? Which need your immediate attention.
Participant: The problem which occurs suddenly is the baby not crying after delivery.
Interviewer: How many such problems are seen by you?
Participant: I have seen about 2-3 cases in the span of 5-6 months.
Interviewer: When you used to do earlier?
Participant: Earlier the numbers were not this much. But birth asphyxia is a common thing.
Interviewer: Were there any facilitators or barriers for you to address this problem? What were the facilitators in resuscitating the newborn?
Participant: Facilitators means?

Interviewer: It means, to do resuscitation what were the helping factors in your PHC?
Participant: You asked me a last question about my earlier PHC. Some nursing officers used to conduct deliveries by using Pitocin injection (Used to augment the labour). At that time the incidence of birth asphyxia was more. The government had given us the bag and mask, and we used to resuscitate the baby by using bag and mask with whatever knowledge we were having, we used to do bag and mask till the baby starts to cry and after that we used to refer the baby to higher hospital. Now the practice of using Pitocin has come down and even if it is used the full ampule is not used. Only 0.1mg or 0.2mg is used as per the advice of obstetrician.
Interviewer: How was your facility to use the Ambu bag and mask?
Participant: The bag and mask were given to all the PHCs. Only once the training was given to us in the DHO meeting, with the help of that training we used to use the bag and mask. But we were not knowing how much correctly or how much wrongly we were using it. Before this study, we used to do resuscitation, but we were not knowing how much correct we were doing, and we don't know how many baby's died because of our lack of skill andknowledge, and how many babies we could have saved. We don't know about that. But we were doing bag and mask.
Interviewer: You mean you were not having skills?
Participant: Yes, we were not having skills.
Interviewer: Did you have all the instruments? That time.
Participant: That time, of course we didn't have AIR device. We were having only bag and mask and mucus sucker.
Interviewer: Did they taught you how to use them? Did you have training?
Participant: We did not have training at the government level. When we had gone for a meeting. We were told to use one mask for the preterm baby and another mask for the term baby along with the bag. That's all sir.
Interviewer: Only that much?
Participant: Yes, that much.
Interviewer: What about your confidence level at that time?
Participant: We did not feel any confidence level. We used to practice it as "breath one two three, breath one, two, three" and at the same time we used to arrange for the ambulance or if the parents had their own vehicle we used to ask them to take the baby to the higher hospital in their own vehicle to the pediatrician.
Interviewer: That much
Participant: Yes. That much.
Interviewer: You mean to say that you were not skill full.
Participant: Yes sir.
Interviewer: After you got this AIR device, are you able to come out of all these problems?
Participant: We got confidence and how to do it and we came to know whether we are doing it right or wrong and the second thing is that we got the grip over doing it. If we apply this bag and mask to the baby, we got the grip that we do it perfectly. And we also can come to know the rate of doing it and we can come to know whether we should do it faster or slower, now we can feel that also, but earlier it was not so. Whatever we did we thought it was right.
Interviewer: After this AIR device was is given to you, all those problems you had earlier with bag and mask, have they been solved now? Earlier you werenot knowing how to give it (resuscitation). Do you feel that all such problems have been solved with the use of this AIR device?

Participant: I feel that we are doing it perfect. And feel that we are doing it correctly. We have done this bag and mask to only two live babies. During the last 6-7 months. I was observing one baby being resuscitated in those two babies. It was a delivery, conducted when I was in my home and I was called, by the time I came our nursing officer was doing bag and mask to the baby. After doing bag and mask for two minutes the baby was referred. Before I was there another doctor was present at the hospital and he also did bag and mask for a baby, both the babies were saved. It means we are satisfied with what we are doing.
Interviewer: Before this study, you told that there were all the requirements to do resuscitation at your work place. But you told that you did not have the skill to do it. Were there any challenges? And was there any repeat training for you about it?
Participant: We had the training only once by the government.
Interviewer: Did anybody monitor after you got the training?
Participant: No sir, nobody has done monitoring.
Interviewer: What else you feel that you are missing?
Participant: …… (Think for 3 seconds) … earlier, we have seen, due to birth asphyxia death rate was more. Therefore I feel that our method of resuscitation with bag and mask was not effective. I feel so.
Interviewer: In your opinion, the death were more because of birth asphyxia.
Participant: Yes. They were more.
Interviewer: What could be the reason for that?
Participant: Because we were not doing bag and mask resuscitation correctly. Second reason is, we were conducting all the deliveries by administering Pitocin.
Interviewer: What were other reason for birth asphyxia?
Participant: ….. (Thinks for 5 seconds) … other reason were… heavy weight baby, we were conducting deliveries of primi gravida mothers and we used to try to conduct delivery forcefully.
Interviewer: Forcefully means, did you use to apply abdominal pressure?
Participant: Yes, by applying abdominal pressure.
Interviewer: Do you think that could be the reason?Participant: Yes, I think that could be the reason.
Interviewer: Did you use to conduct all the deliveries like that only?
Participant: Almost all deliveries about 7-8 years ago, if the baby did not come out of the uterus, the nurses used to tell to push the abdomen. We also used to tell the same more or less to push the baby and whenever there was cord around the neck of the baby, there used to be chance of birth asphyxia. If it was only one round there was not much of a chance, but if there was 2-3 rounds of the cord the baby was not coming out. Even though the mother was 2nd delivery or multi gravida the baby was not coming out easily. In such circumstances we used to do episiotomy or used to push the baby by applying pressure on the abdomen of the mother. Due to all these reasons the babies used to have birth asphyxia.
Interviewer: Did you have enough support for you in your facility? To work in the PHC? To handle all these things?
Participant: Rather than saying it as support, there were bag and mask in all the PHCs, if I was there at that time I used to do bag and mask resuscitation. There was one senior staff nurse in our PHC who was knowing how to do bag and mask resuscitation. But she was not knowing the correct method of doing it. We used to do resuscitation and we used to apply oxygen. We used to do bag and mask for two minutes and oxygenation for two minutes, to see if the baby cries.
If the baby didn't cry we used to refer it to a pediatrician in a vehicle.

Interviewer: Could you tell me about AIR study? What was all in the AIR study?
Participant: A training about AIR study was given to us at JNMC, research unit. There was a device, it is a good device. There were three parts in the device one was mouth piece part. If we apply it, earlier we were not knowing if their air leak in it, what we did we thought it was correct. But in this device, it was not so. It showed us how much we missed, how much we did correct in the form of percentage. Second was airway, earlier what we used to do was, we used to do baby's head upward by tilting and to do bag and mask resuscitation. I didn't try to see whether the air was going to the baby or not. What we thought was "bag and mask is there, and it has to be done", we were not knowing how much it was correct. But in this device it was there.
Interviewer: One thing you told about how to place the cup (mask). And airway.
Participant: To see that airway was correct. If it was wrong, it used to display red light, to suggest us "Something obstruction is there, you need to reapply it". To place over the baby's mouth. Third one was about how to squeeze the AMBU bag, whether to do it slow or fast.
Interviewer: You told about three points and there used to be red and green colour light, if the red light displays what does it mean?
Participant: Some mistake is happening.
Interviewer: If it comes green?
Participant: Ok, we are in a good position and we are doing it in the correct way.
Interviewer: That seemed good for you. What other good features were there in that device?
Participant: About the device, there is one more point in it, about how effectively we are ventilating the baby with the bag and mask. That was not being observed earlier. Whatever we used to do, it was taken as correct. But now it is like, how late we started to do it, how fast we did it. There is something called golden minute. Whether we reach it or not.
Interviewer: What do you mean by golden minute?
Participant: If the baby did not cry with in one minute. Trying to make the baby cry with in one minute is called as golden minute. Using any method, using bag and mask, if the baby is made to cry with in one minute is called as golden minute. If the baby doesn't cry with in that time, it may have mental complications in future.
Interviewer: According to you the baby should cry within one minute otherwise the baby will have mental problem.
Participant: Yes.
Interviewer: So, the resuscitation has to happen with in one minute and that too effectively.
Participant: Yes.
Interviewer: To do that, does this AIR device helps you?
Participant: It helps us very much. If we resuscitate wrongly in the golden minute, what is its use? One, the second is, we are applying that device and doing bag and mask to the baby, immediately we come to know, with in a second we come to know, if you do not place the bag and mask correctly in the initial seconds, you have placed the mask but the respiration is not happening correctly, we are squeezing the mask fast or squeezing it slowly, it shows us to squeeze it in a rhythm. Therefore we try to make the resuscitation effectively.
Interviewer: According to you within that minute your efficiency is known.Participant: Yes, it is known. It helps us to reach that word called as golden minute.
Interviewer: So, all these things should happen within one minute after birth.
Participant: Yes.
Interviewer: So that period is very important for you.
Participant: Yes.

Interviewer: For this our AIR study has helped you a lot.
Participant: Yes.
Interviewer: Are there any things about the instrument which you did not like? To improvise it in the coming days.
Participant: I am the person who does the practice every day once, after this study started. I had made it as my routine habit. I used to do this bag and mask practice, while coming back from leaving my children to the school. I used to practice it till it comes as 95 percent. If it comes as 85 at the first attempt of my doing practice, I used to think myself that I have gone wrong somewhere and I should repeat it again. And I used to reapply the bag and used to do the practice. Like this I used to do it two or three times in a day. I used to practice it till I achieved 95.
Interviewer: What was there that you disliked?
Participant: As I went on practicing, after 2-3 months, even when I did it so effectively, it was not ready to come above 90. I waited for about 4 days thinking that it could be due to internet problem. But I could not find any fault anywhere. Then I asked my staff nurse "all of you are doing, but I am not able to reach 100%, is it the same problem with you also or it is only my problem?" like this when I discussed with them, they told that "there is some fault because we are also facing the same problem". Then our senior nursing officer told me that "the airway is cut somewhere, that is why we are having this problem". Then I called the research unit and asked them "change the doll, we are doing mistake here, whatever we did in the last 8 days has been a waste of energy. And it is not showing the reading correctly", when the madam and the team came here and changed the bag, we started doing it effectively, usually we do not observe it. Whether the bag is cut or not. Our focus used to be always towards the AIR device and the percentage. After 4 days I asked my staff nurse without any shyness "my bag and mask practice is not 100% effective, at least you are doing it 100% or not?" otherwise they would have thought that "I was doing it wrongly, and why to ask sir and get insulted" and they might have kept quiet. But I asked them frankly. Because the results were coming same I changed it.Interviewer: One dislike was that the mannequin problem. What else you did not like? Is there any fault in the instrument?
Participant: About the charging of instrument, when we charge our mobile phone, it show 100% when it is fully charged. Similar feature should be there in the instrument, to know how much it has been charged, whether it is charged 100% and to remove it from the charging point.
Interviewer: You mean, there was no indicator.
Participant: No. there are indicators red and green only. They told us to put it off when light appears but I was not having that much time to sit there. Therefore, I used to give it to our nursing officer to charge it. If they did not look at the charging because of busy in work, for up to 3 hours even though it was nearby just behind them. They were not attentive towards it. I think if it is overcharged it may get damaged like what happens with our mobile phones. If there is an indicator for charging it will be good so that we can remove it. When enough charging is done.
Interviewer: Two points you told what else? Anything, even look wise.Anything else you can say.
Participant: It is a little heavy sir the device. If I hold it at 45° to me it was comfortable for me. If I make 45° to the baby, I was not able to do it correctly. It means the AMBU bag was coming down. If it is light we can have a better grip. If I leave it used to jump down.
Interviewer: So, it was heavy for you
Participant: A little heavy.
Interviewer: You mean it should be made a little lighter.
Participant: Yes, it should be made light.

Interviewer: Were there any other challenge? Regarding the use of AIR study instrument.
Participant: … (No response, thinking) ...
Interviewer: Any challenges to use the instrument?
Participant: Did not have any challenges…
Interviewer: Not only to you. To anybody else. Did anyone tell you about any challenge? It could be your nursing staff or your friends, or other study staff, any challenges to use the device?
Participant: Initially when we started to use it, our nursing officer told "today I have done 75%, today I have done 80%". It took about 15 days to get a correctgrip for them. That is the main challenge. Immediately one cannot the grip of the device. During our service we never used to do bag and mask daily. Whenever there was birth asphyxia of a baby, then only we used to use it. When we started to do practice on the mannequin, it took me eight days to have the correct grip to handle it. I want it to work immediately after getting the grip and start operating it. After 15 days of practice our nursing officer told me "I have done 100% today". They used to tell me daily about the percentage after their practice on the mannequin with the device. Even our senior nurse used to tell me "sir, today I have reached 100%" she used to feel happy about it.
Interviewer: As you are telling, there is challenge to use the instrument and to reach 100% and it takes time and practice to achieve 100% efficiency.
Participant: It takes some time.
Interviewer: According to you, it cannot happen overnight.
Participant: Not possible
Interviewer: So, it will take some time.
Participant: Yes
Interviewer: Any other challenges you feel? How do you feel if the same instrument is tried upon the live baby?
Participant: I feel there will be no problems. But the device should be a little lighter. For example, we keep the device this way, baby's face will be like this in this position if we do resuscitation, if we leave the hand it loses the balance and goes down. It should not go down. It should stand like this only. For that we used to keep the device this side, if we keep it like this it used to be stand still.
Interviewer: In your opinion, it inconvenient to grip the device.
Participant: Yes. If it is light weight we can easily handle it with our fingers, and we do not need support if another hand beneath and we can do resuscitation holding it with one hand.
Interviewer: So, it is also a challenge.
Participant: Yes, it is another challenge
Interviewer: Apart from these, is there any other challenge?
Participant: Apart from these there is no other challenge.
Interviewer: To make all these improvisation, what changes to be made in the device? According to you? you told already, can you repeat it? According to you what changes are to be done according to you so that it will be easy to use?Participant: First AIR device should be made light weight. Second is there should be an indicator to show the percentage of charge while charging. If it is light weight it will not be difficult to use it on the baby. According to me these two changes have to be done.
Interviewer: Do you like to say anything about the training?
Participant: Before giving the training, the training should be made mandatory for those staff in our PHC whom we think the training should be given. And in the government facilities there

should be monitoring of the staff nurses once in every three months about whether they are doing the practice correctly or not.
Interviewer: Whether learning of this AIR device is easy or tough?
Participant: It is easy to learn.
Interviewer: Using the device easy or what?
Participant: Using it also is easy.
Interviewer: Is it easy to teach others?
Participant: I may look tough to teach others for about 8 days but once it is learnt, there is no big trick in this.
Interviewer: To learn do you need 8 days?
Participant: Yes sir.
Interviewer: During that 8 days what is the reason that you cannot achieve 100% efficiency? What is the difficulty in learning it?
Participant: The grip is missing sometimes, sometimes even if we corrected the grip and did the practice, there used to be some obstruction. I used to have the correct grip and to clear the obstruction I used to push the bag forcefully. For about 4 days I tried to have the correct grip on the mouth piece. I used to concentrate my mental focus at one place and I was not having attention towards the position of the neck of the baby and also I had no attention towards how to push the bag and mask. First 8 day I tried to place it. After learning how to place it, air way was not getting clear. There used to obstruction in the airway. It took another 2-3 day to get the correct grip, clear the air way and to do bag and mask practice, after all that when we were doing everything correct but it happened so that there was fast rate. Pushing slowly, sometimes in a hurry pushing hurriedly. All these things happened. And it took another four day to learn doing bag and mask in one rhythm, how to push etc. Earlier our brain was giving one side, and after about 4 days our brain could manage to concentrate on birth sides. There should be grip, airway should be clear. After about 4 days my brain was stopped, all three should come one way. i.e. the grip the air wayand the way we squeeze the bag. So, my brain started to maintain all these three things correctly.
Interviewer: In this process, how should the trainer and the trainee should co- operate to make it better?
Participant: Rather than training them in a PHC, they should be taken to a place and they should told in detail all the information about this. Why the bag and mask should be done, about the golden minute, earlier what we were doing, there was nobody to assess us or giving us plus marks or minus marks. But now to examine us a machine has come, that is AIR device machine, we should give them one day training outside about how to do it, and there should be a master trainer. And they should observed once in a week or once in a month about whether they are doing correctly or not.
Interviewer: For this you need man power.
Participant: Yes. We need man power.
Interviewer: For how many days you did the practice on this device?
Participant: I have done this practice for six months without fail.
Interviewer: How many days after the study began? Is it one year or?
Participant: No sir, it is about 7-8 months since the study started
Interviewer: After 8 months, you think 8 months before, is there any improvement in your skill after these 8 months?
Participant: Yes, I am having full confidence now. Suppose if a case of birth asphyxia comes to me, I can handle it on my own with correct method.

Interviewer: What else you feel?
Participant: Already we have saved two babies in our PHC. If we had no knowledge of this method we would have lost those two babies. Earlier we were hesitant to do the resuscitation. Now we do not hesitate.
Interviewer: How confident you were earlier, to do resuscitation?
Participant: Same sir, we had no confidence, we used to hesitate. But somehow, we used to do something. Because of two reasons. One is to save the baby and the other is if we did not help the baby to breath the attenders could beat us physically when we come outside, if we try something they feel that "the doctor has tried his best to save the baby, it is our fate that our baby did not survive" like this they used to feel.
Interviewer: What do you feel in your mind?Participant: I was knowing it. That time we were doing that much based on what knowledge we were having I was not knowing how far it was correct or not. But now we are of the view that we should take the challenge and save the baby like that we feel.
Interviewer: You mean, there is improvement in your skills.
Participant: Yes, there is improvement.
Interviewer: Similarly, is there improvement in your facility?
Participant: Actually, I was trying to teach them, because I may not be there at all the time. Suddenly if any baby comes with asphyxia, and if I am not there and the nursing officer also is not there to attend, a group 'D' attender can take care of the baby. Therefore, I was teaching the group 'D' person also.
Interviewer: According to you all the staff should…be trained?
Participant: Yes, all the staff in the facility should be able to do it. It is not much difficult. If we give them all the information and give them training, they can also do it.
Interviewer: According to you, everybody in the health care profession should get this training. Is it?
Participant: Yes. Everyone should get the training. I showed it to our taluka health officer, I told him "come sir, you were also doing bag and mask resuscitation earlier, see this device, we also did earlier, but this machine tells, whether we are doing resuscitation correct or not". I demonstrate to him for a few minutes. He also saw it. Our pharmacist also saw it. My group 'D' attender also saw it. I used to tell our aaya (dai) also to come, stand and see it, they were all standing and observing it.
Interviewer: So, according to you in that golden minute, whoever it may be, all should know to resuscitate the baby.
Participant: Yes. All should know about it.
Interviewer: Every staff member should learn this.
Participant: Yes, they should learn it.
Interviewer: How many of you in this PHC are trained by us?
Participant: 3 staff nurses, 2 doctors and one doctor has been transferred. All of us were trained in this.
Interviewer: With this much do you feel that you have confidence about resuscitation in your facility?
Participant: Yes sir (tells confidently). Very much I can depend on them and go. I am the only doctor now in this facility, and I have to attend meeting also, during the night delivery cases come with full dilatation of the uterine cervix. If birth asphyxia occurs immediately after delivery. It takes at least 10-15 minutes for me to come from my home. By that time the golden minute elapses.

In that situation the nursing officer can make use of that opportunity, she also likes to use the bag and mask ventilation because she thinks "I have learnt it, and I can do it". And I used to tell all our three staff nurses "they have given this for 6 months, the study people. You make use of it correctly, if you do it for these 6 months, you will remember it till you complete your service". I used to tell this to each and every nursing officers.
Interviewer: Did they use to feel it?
Participant: Yes sir, because I used to tell them "you have got still 20-25 years of service ahead. You do it correctly once, then there is no need to lecture you about this in any meeting or training there are questions being asked and you will have knowledge to answer".
Interviewer: According to you, you feel that your facility, and there is a lot of improvement and your confidence is increased.
Participant: Yes, it is increased.
Interviewer: And also you have so much of courage to do it.
Participant: Yes sir. Participant: There was one baby who had birth asphyxia in our hospital. I was called and before I came our nursing officer had done the bag and mask resuscitation and had started giving oxygen. The baby was sent for observation to a pediatrician and I called the pediatrician by phone, he had asked us to send the baby without doing bag and mask, but I told him that "our all people are trained in bag and mask resuscitation, we have done bag and mask for more than two minutes, baby is crying, but still we are referring it and please take further care of it". The baby survived.
Interviewer: The baby didn't have any mental problem (Neurological deficit).
Participant: No, no mental problem. This has happened recently about 4 months back 3 months back.
Interviewer: The baby is alright?
Participant: Yes, the baby is fine. We saved two babies
Interviewer: So, within 2 months you have saved two babies.
Participant: Yes, we have saved two babies.
Interviewer: Is it good that two babies have been saved in this area or is it better that such babies should be saved all over the country?
Participant: If it is done all over the county, our neonatal death rate will come down.
Interviewer: Not only reducing the death rates but so many people will be benefitted, right?
Participant: We save lives, we save the happiness of the mothers. Because many women will be pregnant after so many years and if the same baby dies due to birth asphyxia the mother will be mentally depressed for years. Therefore, we would be giving happiness to the mother, along with saving the life of the baby.
Interviewer: If we want to do this in the entire country what would be the facilitators and what would be the challenges? What would be the facilitators and challenges in the training? And what would be the facilitator and challenges in the implementation? Can it be done? And to do it what support we need to have? What would be the challenges?
Participant: Usually doing such a programme is good. I feel so. If it is done, it would be very good, we can save lives of so many babies. For example, suppose in our state there are 10 deaths happening. Even if 1 or two babies are saved in those 10, I will be very happy. Second thing is, to do it in every institution, for example, whatever training is given at the government level, nobody goes to do the follow-up of that training. They just say "we have given you the training, whether you do it or not, we don't know" and our staff do not care to do the daily practice. They have got plenty of their own work and similarly it is the same situation in the private set up also. There are

some gynecologists and pediatricians working in the rural area, and they should learn how to conduct bag and mask resuscitation with this device and they also should get this training. If they don't learn these practices, they will follow their own method of doing the resuscitation as they had learnt in their master degree.
Interviewer: Is it easy or difficult to do the training in the entire country?
Participant: It is very easy sir, we need some man power to do it. One day training is sufficient to train all those persons who are doing the deliveries. And it should be monitored by someone visiting their work place after the training at least once in a week.
Interviewer: Will there be any problem to implement it?
Participant: To implement it we need to have this machine, we have to supply this AIR device to everyone. I don't know the cost of it, but it has to be supplied. Second thing it has to be observed, because the private doctors think "let it be, they just tell us to do it". But they go back to do their own way ofpractice. They also think "this asphyxia happens rarely once in 6 months or so, why should we practice it daily for that"? We should motivate them to do the practice daily by telling the importance of it or to practice it at least one in two or three days. I have seen so many doctors. I have seen doctors in PHC also, when they come in the morning to the hospital they do consultation in outpatient division till the evening. When their duty finishes at 6 in the evening, they would be tired and go home because they would be tired because of working from morning till evening. And doing the daily practice of the device remains untouched it should come in their mind that they should do it daily at least once.
Interviewer: What should we do in your opinion? For example if a decision is taken to implement it by both of us together how to do the training and monitoring?
Participant: To do monitoring there should be a person at the taluka level. That person should visit once in a week all the sectors. Where deliveries do take place. We should tell the staff to do the practice in front of the monitoring person. The government sectors may do it, but the private sector is difficult to do it.
Interviewer: How to motivate them?
Participant: It is very tough to motivate them.
Interviewer: What can be done?
Participant: They agree for anything. They don't say no to anything. I have observed them in many works and programmes. For example, our government health department asks them to enter the delivery information in the portal of health department. They come and take the training but when delivery occurs in their hospital they do not enter the information into the portal. Only in government hospital immunization is given to the baby soon after birth like 'O' polio, hepatitis etc. We are repeatedly telling them to give those vaccines to the baby after delivery for the last 4-5 years.
Interviewer: Do you believe that this also goes the same way?
Participant: Yes sir, unless you make it mandatory, they do not listen to us.
Interviewer: What would be the other challenges for training and implementation? You told that you need instruments
Participant: Yes.
Interviewer: Will there be any problem to purchase the instruments?
Participant: Lack of funds. The government has to manage funds. Even if they do not have funds, they have to provide the instruments to us. The second thingis to maintain the device and the mobile app a person has to be given. Because, if anybody steals the device how to find it out? There will be security problem of the device.

Interviewer: What else?
Participant: To see whether the staff are doing the daily practice or not. We need to make a chart. Interviewer: So, monitoring is important, purchasing the device is important so all these are the barriers.
Participant: Yes.
Interviewer: Do you think our health personals will learn to operate the device? Will they take training? After training will they continue to practice?
Participant: Our people will take the training. But it will be difficult to say whether they will practice in their routine service. It is easy if they spare at least five minutes towards practicing the device. And the private practitioners are too busy in their practice to do daily practice of the device and they are always busy in their routine life. They have an indifferent mood like "why should I practice it? Let me practice it later on" there is no other reason.
Interviewer: So, their mind set is also important?
Participant: Yes, their mindset is important.
Interviewer: Will there an improvement in the health care if this device training given to the entire country? to the delivery attendants all over the country?
Participant: Yes, it will happen, definitely.
Interviewer: How do you say?
Participant: Our neonatal death rate starts coming down. In our taluka there is a RMP doctor, every year 3-4 maternal deaths occur in his hospital. And the still birth numbers in his hospital are not known they are innumerable. Whatever number he gives is believed as right and if it is found out and raised in the meetings, then only we come to know about those deaths, if they are reported. Recently when a maternal death occurred in his hospital, the government has taken action upon him, his hospital was seized and he was warned that if he does delivery again, he will be arrested. People used to say "if we go to him for delivery, he would complete the delivery with in two hours and discharge the mother and the baby". In your hospital if a delivery case comes, you do not complete it with in an entire day sometimes. People used to say that he was a very good person. He used to give Pitocin injection as soon as the delivering mother comes to his hospital. There used to be many birth asphyxias and manyPPH incidents (post-partum hemorrhage). If we give knowledge and training of this device, many deaths will be prevented.
Interviewer: Any other barriers would be there?
Participant: Barriers means?
Interviewer: Hurdles, difficulties? You told about funds, about practicing and mentality of the doctors.
Participant: Yes sir, there will be problem for daily practice. I have seen with my own eyes, the nursing officers do for some days initially and stop doing it afterwards and when asked they say "today there was more patient load, there was a delivery to be attended. Since morning there was OPD. Therefore, today I have not done, I forget to do". Our medical officer also does the same, in the morning he comes and goes to OPD. By the time the finishes the OPD and
comes out it would be 4:30 in the evening. If a delivery patient comes he used to follow it up. And after the delivery was completed he would go to his home, and the daily practice of the device remains unattended. They should have the mentality that they should do the practice for 5 minutes in the morning first and after that they should go to OPD.
Interviewer: What is your opinion and suggestions about this AIR study and the device overall?
Participant: Sir, the device you have given to us, I have not seen such a device during my service, I thought that what I used to do with bag and mask was the correct method like "I am the king of

my village and what I do is correct", when I continued using it, then I came to know that we have done mistakes. Because of those mistakes many baby's have died. But if we do resuscitation correctly we can achieve something and can save baby's lives we can reduce the death rate, we can make the mother happy. And we can make a family happy.
Interviewer: Any other opinions and experiences?
Participant: It is good sir. A lot of people were not knowing about what we are doing now. Even to our PHC staff. I used to take an example and used to tell them. I told them that may gynecologists and pediatricians do not know how to do bag and mask resuscitation. Even when they applied the device, the device showed them their mistake. When a pediatrician completes his education and comes to the hospital or when a gynecologist completes the education and comes to the hospital, they should do the bag and mask resuscitation 101% correctly, that is my opinion. They should not do any mistake, because they would have come after getting the education and training about it. When they were using the device, the device used to tell them and used to display red light.
I used to feel that they were still behind in using that device. I should not tell you that matter sir, if I am not trained and I am doing mistake it is fair. But whya pediatrician should make mistake? They are going to spend their service and life with children only. Before coming into the hospital, they should be perfect in bag and mask resuscitation, that is my opinion. In the college itself that training should be given perfectly to them. The MD pediatricians should come out of the college after knowing how to do it perfectly.
Interviewer: With this instrument.
Participant: Yes. With this instrument.
Interviewer: This is a suggestion from you. Any other suggestions? For the betterment of the country.
Participant: And the whole society. I had that very much in my mind. There pediatricians have done everything in their college but still whey they are doing mistakes? Why they need training? That is my question. Their entire life is with the children why this is so? If it happens with us it doesn't matter. We will not go near the newborn baby, we have got fear and we need to learn, even the gynecologists should know how to do bag and mask.
Interviewer: Gynecologist and pediatrician.
Participant: Both should have prefectness in that. When they are in the college itself they should learn how to use the device and they should be sent out of the college after making them perfect in practicing the device. That is what I feel.
Interviewer: Anything more you would like to say?
Participant: No sir.
Interviewer: So far you have told in detail about its difficulties, benefits, losses, what changes to be made. All these things you have told clearly. It would be very useful for us. We will take up whatever suggestions you have given and we will try to improve it more. Thank you for your opinions.
Participant: Thank you

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Interviewer: How many years back you completed your Pediatric degree?
Responder: From 2013 till now, it is 11 years.
Interviewer: As a pediatrician you were concerned with the newborn babies and you used to attend them at the time of delivery?
Responder: Yes.
Interviewer: What do you think of this Resuscitation? And who are the people who can do this kind of resuscitation work very effectively?
Responder: Whenever there is a delivery we attend the baby. Most of the time what happens is may be like 50:50. May be doctors may not be available. At that time only the staff has to attend if they know better, then they can do it better. I think so. As far as I am concerned, how we are trained, they are not trained. Maybe they don't know the importance, or what exactly to be done, when to intervene. They are not that much thorough, because sometimes, when they are doing bag and mask, they may push it hard that may cause some adverse effects like pneumothorax. Sometimes they may be doing very less. They don't know exactly how much to do. May be they might have gone through training, but they have forgotten and their skill might have gone down in the meantime. I think personally, whoever is present at the time of the delivery, most of the times, it is 100% staff nurse. Therefore they have to be extensively trained, because there is something called the golden period and if that time is missed, afterwards whatever we do, it's like waste of time. So when there is birth asphyxia, if we don't take proper steps in the initial period, then there is no point in doing anything afterwards. Therefore in the initial time whoever is there at that moment of time, if they are well trained it is good.
Interviewer: What is the barrier for them to get trained? Why it is not happening?
Responder: There are two things, I can say one thing is, there are some people who really don't want to learn and there are some people who want to learn, but they don't know how to maintain their skill. Even it happens with us also, if we go through it again and again, and if we don't understand the importance, we tend to forget the things. For example I am extensively trained in doing intensive work. But since last 8 years I have not done any intensive work here. So we tend to forget the knowledge what we have gained. The same thing happens with the nursing staff. If they are not using it properly, and they consider whatever they are doing is right. There is nothing to judge them, whether they are doing right or wrong. So what happens for us also, we cannot monitor them at every step. Maybe we can have a training session once in 6 months or 3 months, something like that. Every moment we cannot monitor them. So, that is the problem.
Interviewer: You told me that they are already trained. But what is the problem in retaining the training knowledge?
Respondent: previously what used to happen was, apart from this study training means one day workshop and one day theoretical classes that is what we go through training. Some people say 20% of 30% are all really good, they grasp the things, they really understand the importance and they actually retain the skills. But 70% of people, most of the times they are careless and neglect and maybe they retain the skills for 15 days or one month. After that day tend to forget, because don't use it frequently and so they tend to forget. Maybe they are doing, but they are not doing it right, so whatever they have learnt in the training, I will forget. Maybe they are doing, but they are not doing it right. So whatever they have learnt in the training, they will forget.
Interviewer: actually how those trainings are conducted? What kind of training they are?

Responder: In the government setup for every 6 months or a year they call for training at the district training centre. Majority of the staff they call back for training and they are trained, trained and retrained. Even for doctors they call every year this year I was called two times. Once in Bengaluru for 3 days and here in Gokak for 7 days.
Interviewer: was it for resuscitation or?
Responder: It includes everything. Out of that one day is for resuscitation baby resuscitation. In Bengaluru for 3 days it was for resuscitation. They make intervals of 6 months or one year and they call us for training. Earlier it was not there but for the last 2-3 years I am seeing they are intensifying their work.
Interviewer: How was it earlier?
Responder: (Laughs) Before, I have not gone for training even once in 5-6 years. They had not called as also. They might have called other doctors and other staff. But as far as I am concerned there was no training.
Interviewer: When they have not called you, what about the nursing staff?
Responder: No, there are different training sessions, for there are different plans. Maybe they considered that the doctors are trained, so they need not be called like that they consider. Sometimes they do only staff nurse's training frequently. So nowadays they are considering the doctors that they also tend to forget. So now they are calling doctors also, now they are calling. Maybe earlier they used to call but for me I don't know. They might have called and I might have forgotten. I don't know, five years earlier it was.
Interviewer: We spoke to some of the nursing staff; they said in their tenure of 15-20 years, they were called twice.
Responder: No they used to call frequently. At least for nurses they used to call frequently. Because earlier also I have seen, because there was a plan actually for at least once a year. At least once a year they used to call and train them. Maybe some of the staff tends to miss the training. Some people purposely miss the session. They say some reason and miss the session.
Interviewer: Why they tend to miss?
Responder: I don't know. Maybe they did not have seriousness or might be they considered themselves that they know everything or they might think “it is a small thing procedure” resuscitation is a small thing, just press the bag everything starts. So they don't know the importance, what exactly to be done and how exactly to be done. If they do it in a wrong way what will happen, they don't know the importance probably, maybe it is a part of negligence in their part. So I am not sure (laughs).
When all these barriers are there regarding the training, do you think this AIR device can help to overcome this barriers?
Responder: Yes definitely, AIR device is a thing that helps them to self-monitor themselves. There is nobody to criticize you. There is a machine and you are there, nobody else is there, so you are doing and the machine is telling you are doing it in a right way or in a wrong way. And also you can correct yourself. So it is like a self-improving device, and you can definitely improve your skills with that because the main hindrance of doing any work is that somebody may criticize or something may go wrong. Maybe we have 15-20 years of experience, and if they are not doing it in a right way and they think that “in front of others if I do in a wrong way they will think that they will criticize me or they will feel bad about me” or something like that. Then they will stop doing that also. But with this device there is one device, there is a Mannequin, there is the person. Nobody else is there, so they can correct themselves. They can use it, they can monitor themselves, and they can retain their skills. So it is an excellent device.

Interviewer: So you mean because of that their skills and knowledge are improving?
Responder: Yes definitely, what I personally feel is that, before 1 year I used to come very frequently for the resuscitation. Now they are not calling me, because they are managing it efficiently because now they know the theory. They know the practical, what has to be done and when to call a doctor. So they are managing efficiently compared to earlier.
Interviewer: Do you feel that they are improving?
Responder: Yes definitely.
Interviewer: About this AIR device you said it is self-training and self-monitoring. Can you explain me a little bit?
Responder: What I said about self-monitoring it is self-criticizing or self-improving. These are three things like whether there is a leakage, whether there is a high rate, or you are giving a harsh breath. Everything is there in that, they are trained also earlier, about how to do it and then they are doing themselves. So they can see whether they are doing anything wrong and immediately they can correct themselves, during that session itself. So, what I can say is like instead of brain memory it is a muscle memory at the end of their 6 months of their training, just like a batsman in a cricket game is a muscle memory. At the end of the day how exactly to be done, how much to press, because if you press too much you are causing pneumothorax, if you press very less there is no chest rise and everything is recorded in that, everything it tells and immediately they can correct themselves, at least for that there is an immediate help.
Interviewer: So you mean because of that with a device they have improved their skill?
Responder: Yes definitely.
Interviewer: And what about their confidence?
Responder: Yes, definitely high sir. Now they can confidently manage the things. They are saying to themselves. "Earlier we were not having this much, now what example I can say is, we have got skill lab training in our hospital in the last 2-3 months. Compared to other staffs in other institutes. I should not say this; these people are doing it in a better way, because they also have resuscitation in the workshop. One day it is there on that day only there these people are doing extremely well.
Interviewer: So the people who are using the AIR device?
Responder: Yes, compared to those who are not using it. So comparatively they are better. We have got these feedbacks.
Interviewer: You are in the government sector for almost 11 years.
Responder: Yes, government sector for at least 7-8 years. Totally practicing for 11 years.
Interviewer: In that period, looking into the government sector or in your practice, now after you have been working here, people also started using the device. So in the last 5 years and in the last 8 months, do you feel any changes?
Responder: Yes, there is a drastic difference, very good change and many of the babies are getting a big help definitely because exactly at that moment, the thing needs to be done. They are doing it properly now and the cases are, I can say now the complications are less. Those babies who used to tend to complicate, now they are improving a bit. The staff are also very confident now that they say "we are doing it in the right way". They are doing it for a particular amount of time, they are deciding on themselves, whether to go for the next step or we can go with the same steps. Now they can decide.
Interviewer: According to your say, the AIR device has removed the earlier barriers?
Responder: The main barrier was in the brain, like the confidence problem probably that has gone very high and whenever there is confidence they can do it in a little bit better way. Whatever they know the knowledge, they can apply it in a better way. Earlier, even if they had knowledge, they

did not know whether they were doing it in a correct way and they were not confident. They were not doing it in a confident way. Whenever somebody does any work with some confidence, they tend to perform better, now it is a good way.
Interviewer: In your facility in the government setup and also in the periphery are there devices available or do you think some are still missing, something not there for the baby resuscitation?
Responder: Earlier there were, maybe last week or year funds are coming heavily and the devices which are not used or not opened at all. So many devices and so many instruments are coming. Sometimes we feel that it is too much now. Whatever is necessary we are getting more than that. Earlier there was a problem, but now definitely we are getting heavy funds and they are asking us to purchase also. Earlier whatever they used to send that much only we were supposed to use and once the device is gone nothing else is there, there were no funds also. I don't want to criticize it, but such was the time. Now they are sending the instruments, equipment's and after that also they are sending funds also. And if you want to purchase something locally you can go ahead. That barrier is not there now in the government set up. Now it is far better than any private sector hospitals.
Interviewer: You have used the AIR device?
Responder: Yes.
Interviewer: And also monitor the activities?
Responder: Yes.
Interviewer: In that what do you really like in that?
Responder: Hmm…whatever I have mentioned, the rate of the respiration cycle, and the leakage, it will detect immediately and it will tell. And the pressure, it will tell immediately. The moment we go wrong the red light gets on, so immediately it tells that you are going wrong and you have to collect it. That way it is very good.
Interviewer: What else you like in that?
Responder: I can say that these training sessions were very helpful. Very cooperative, they organized really very well and they never bothered anybody. Our senior doctors they were so senior doctor they were so much down to earth that they used to consider each and every person. When the staffs were not having the time they considered that also, they included them also. They themselves came down to here and they did really hard work. It definitely helped. The whole thing was executed.
Interviewer: You liked the training; people were involved in the training.
Responder: People's involvement was also excellent. I have never been involved in any training this much. Everybody was interested right from Data person to any staff; including our staff also everybody was involved. Everybody was interested.
Interviewer: Is there anything that you did not like? And which need to be improvised?
Responder: The device is square and lengthy I think and it has to be changed I think, the structure of the device is little bit cumbersome
Sometimes to use in a hurry burry, practically it is not there right now because with that device, if you go and do practically with any baby it is definitely a problem. It is not helpful because it is definitely cumbersome. The thing is the other way, the Mask is the other way, baby is somewhere, how to see.so, whenever we are doing something, we are doing it ultimately for the baby. So it should benefit the baby and definitely it will benefit the baby, there is no doubt. But the problem is it will affect, whenever you are doing it because the weight goes the other way, the Ambu bag weight goes the other way. So what I feel is instead of going that way, it should be round, round the mask like exactly the mask size or a little bit bigger mask size and it should be round. So that

it will not affective or whatever resuscitation is doing, because sometimes it comes in between the way of the left hand. So it is a bit difficult to use practically with the present device. Only for training sessions is it good, practically I don't think it will be of much convenient.
Interviewer: You want to say that this device cannot be applied for the live baby?
Responder: Yes, it is definitely not.
Interviewer: You are doing resuscitation but to see whether it is efficiently or effectively useful on live baby not possible
Respondent: it is possible to use on live babies, but definitely it is not efficient. Efficient means what I can say; in between it will disturb you. The instrument disturbs you. Actually whenever you are doing there should not be any disturbance. The disturbance will be as much as possible, it should be less. But the device itself disturbs you. So, that way it is practically not there right now, the device structure may be if you change the device structure, which does not interfere with whatever you are doing, then it will definitely help on the live babies also. The present device is what I personally feel about it; it will help only for the training.
Interviewer: You want to say that you want some change you already suggested?
Responder: Yes sir.
Interviewer: What are the major changes you would like to make, if you are asked to do that? We will try to implement it?
Responder: What I will do personally, I will change the structure of the device from the square to the round shape which comes around the top of the ambu bag, just about the mask whenever we fit in and the indicators and everything in a little bit smaller way and the device should be little bit small, not this big. It should be as much as very small and the only thing it should show indicators, maybe there should be one screen, probably the digital screen, it shows everything like whichever thing is going wrong, it should be shown in that. They need not be multiple indicators the device is excellent, but however it is possible that much small it has to be made.
Interviewer: One is compact.
Responder: And the weight of the device is at a little bit higher side and that will affect your resuscitation. The weight has to be reduced. The weight of the device has to be reduced. It is of a little bit higher side weight, should be reduced to maybe 100 grams or 200 grams not more than 200 grams. I feel. If something more than 250 grams it will definitely affect your resuscitation. Maybe probably what I feel is like 100 grams should be ideal, but I don't know whether the device fits into 200 grams.
Interviewer: We will consider that definitely. According to you, less than 100 grams is much better. That is one change, other changes you like to suggest?
Responder: Hmm…..
Interviewer: You said wait should be less, size should be small, fitting should be circle type and only one digital indicator apart from that anything else?
Responder: Already alarm I think it is there, it should be like, I don't think any other changes necessary. Whatever is included is very good I think. I felt only about the shape, weight and the structure weight it has to be fit. Those things duly.
Interviewer: Any comment on the colour?
Responder: Colour is good I think. Black is ok. For me it is ok I think, I don't mind black.
Interviewer: One more thing. Many people came here to train you and other people. You are a paediatrician, it is ok for you. You can train yourself fast. What were the challenges for other people including sometimes you also, to get trained by this AIR device…… any challenges?

Responder: There were no challenges. Whoever come to train us,, they made it so easy that any dumb person on earth can learn. They made it literally so easy and they never hesitated to teach everything like literally from A, B, C, D they literally told about everything. And they made sure to teach in our regional language. So that you can understand better and whichever silly question you have to ask you can ask them that freedom was there. Our staff did that and they were happy (Laughs). They understood everything and grasp better. And there was one staff. I don't want to mention the name like she was so bad, I literally felt very bad about her. She was harassing the trainer so much; literally he took almost 2-3 hours to teach only that person to teach. He made sure to teach her and she learnt also. So that much interesting they taught us.
Interviewer: Training part is good but from their side why they were not trying to learn it very fast, what challenges they felt.
Responder: No initially, maybe sometimes the language could be the problem. Sometimes for them, English is a little bit difficult to understand. For them they made sure to teach them in Kannada. Then they started understanding and some medical terminologies, probably because they have learnt B.Sc or diploma nursing long back. Therefore some medical terminologies they don't understand. Those words also they changed into local language and taught them. Later on they were copying with whatever teaching, so the one staff I mentioned, her grasping power was less. So whatever you tell it used to pass over the head (laughs). Then they made it literally like cooking everything a little neatly each and everything. They chopped a little bit of everything and taught everything.
Sometimes it might be their own knowledge grasping power, any other challenges?
Responder: Other than that there were no challenges. Personally I didn't feel challenge.
Interviewer: Did any of your staff come to you and told you about any other problem?
Responder: No they were happy actually, they were happy to learn every step, they were doing better, even though they were not doing it properly in an organized way, how to prepare, where to go, what has to be done after every individual step. They were doing but they were not doing in a proper organized way, what exactly to be done, when to call the doctor, when to intervene. So they learnt very well, that was not a heavy subject but it was practical, so they learnt. There were no other things.
Interviewer: Can it be used to train anyone?
Responder: Yes, absolutely.
Interviewer: For the staff nurse and doctors?
Responder: Even uneducated persons can be trained with this I can say that.
Interviewer: With confidence?
Responder: Yes.
Interviewer: With this, as a clinician, you are a clinician and staff nurses are there. Does it improve your skills and your people's skill?
Responder: Yes definitely it has helped.
Interviewer: How much percentage it has improvised?
Responder: Drastically it has changed. And took them to almost 90%, maybe they were doing, but they were not doing in a right way. Because of the lengthier duration of the training it has come into their muscles
I said about muscle memory, even if their brain tends to forget their muscles will not forget.
Interviewer: So it has improved the skills of everybody.
Responder: Yes.
Interviewer: Can you tell me any of the success stories which has happened because of this?

Responder: Yeh, yeh I can say that. Maybe they used to call me 2-3 times in a 15 days I can say. Now they are calling me maybe once in a month. Now they are confident and they are managing and many of the babies earlier, I should not say this, they were going into, some of them were going into asphyxia. But now they are not going into that much bad. Now they are confidently resuscitating.
Interviewer: Tell me their skills have improved?
Responder: Yes
Interviewer: And what about knowledge?
Responder: Knowledge also improved definitely. Now when they ask questions I was also there in skill lab training in Gokak, one of our staff was also there and she was independently answering every question that was thrown at her. There is so much knowledge there in them.
So those people who have used this device that knowledge is better?
Responder: Yes, their knowledge is better.
Interviewer: In your facility did it has improved the skill and is the drastic change in the…
Responder: Yes, in what way I can say is that, the cases which were used to get admitted in tertiary centres or where going to private setup for the treatment of complications. Now they are reduced. It is not possible to mention the exact numbers, but overall I can say that the babies getting complications is reduced.
Interviewer: So it has improved the functionality of your facility
Responder: Yes, definitely it has improved the functionality and ultimately the babies are getting benefited because of the resuscitation device.
Interviewer: As a paediatrician you are also attending the training in multiple things. How this AIR device can be used to trade the large area, or all the PHCs in the district or in Karnataka. And if you are planning to do that, what might be the barriers or what might be the facilitators, what challenges we can have, how you want to suggest me that I should do this to overcome those challenges.
Responder: The challenge will be the numbers, if you are going to do it in the entire Karnataka state or India. There are lot of healthcare staff, each one has to be individually trained. So I think it is better like, before training them practically, with workshop kind of a thing, giving them theoretically knowledge through WhatsApp or through mail or whatever social media is available or you just theoretically train them earlier. Show them videos about what exactly they are doing everything. And after that once you start training them, then they will take less time. Already they would be knowing the theoretical part and only they have to do these practical things. So it will take less time, and it will save time to educate mass people, like groups or a lot of people. So that way it will help I think so.
Interviewer: How I should go ahead to train them?
Responder: If you are training only health care staff, you know exactly how many health care staff are there. You can take everybody's number you can make regional heads somebody like in Belagavi and Bagalkot each regional heads and taluka regional heads, so you can train those taluka heads and regional heads and those people have to train lower down people. So they have to do separate groups and separate the radical groups without wasting any extra time because this people are working in a government setups. It is very difficult to take all the staff for training. If you take all the staff for 1 or 2 days, it is impossible practically in some of the hospital. We also face that problem in our hospital because there has to be some stuff to work in the setup. So it is difficult. If you make them like batch wise you can make a batch wise training and theoretical part and demonstration every video has to be sent to them earlier. What is the device, why we are bringing

that, what is the Theory behind this, what benefit you are going to get. Everything you have to inform them and maybe you can take some of the mock. Simple mock test kind of a thing, before going for practical thing and it will be a very easy subject, and then practical sessions can be shortened and then let them take their training on their own like what we did.
Interviewer: you mean to say that they should monitor self? We should train them basically and for a shorter duration?
Responder: Maybe regional heads can in between monitor them. And in between go and check them. That way large scale of people can be trained. Multiple persons have to be involved it is not possible for only KLE people to do and train them. Maybe you can train district heads and they have to go and drink taluka heads and then regional head have to be made. You have to involve at different sets of people, not only doctors, there has to be some persons from the nursing staff. There has to be a person from other maybe you can take some from group D and or something. Whoever is involved in delivery section and baby monitoring section? So multiple people from multiple sectors have to be taken, so there should not be any barriers like brain hierarchy. I can say. Maybe sometimes the staffs feel better to converse with another staff instead of a doctor that has to be done. It will help.
Interviewer: You said that the training duration has to be shortened. So does it affect really or you want to keep it for one day or like that?
Responder: I didn't get that correctly.
Interviewer: You said that training should be precise and to the point.
Responder: No, already it is precise to the point. What I am telling is the article part has to be done earlier, without calling them anywhere only there they can come and do the practical. Like hands on like they can directly start, because here what is happening is, I saw a lot of formalities are there. In that formalities only time is being wasted. That need not be done I think. We understand the practical things, we understand the work stress everybody is having and we understand the amount of work everybody is doing. These formalities need not be there I think. Just wish time and start the training.
Interviewer: Any other barriers you feel when I plan to do it in a very large or country wide?
Responder: I don't think of any other barrier for this (laughs) maybe it is difficult to train all of them in a short duration of time. You have to make different groups with different patches and go step by step so that you can train everybody.
Interviewer: Any other people will I feel somebody is stopping that, something like that can happen?
Responder: No sir. I don't think anybody will stop this, because ultimately it is going to benefit the society. Ultimately it will help to enhance the whatever, we have country wise it will definitely help. Instead of having a baby with cerebral palsy, have to be taken care by multiple people, father is affected, mother is affected. Some help care staff are affected. Many people are involved with one cerebral Palsy baby. So if you can reduce one out of 10 CP babies, that will help to improve the parents who are working and everything will improve, that economy will improve, everybody will be benefited. Ultimately the country will be benefited. I don't think there will be anybody obstructs it. There will not be any opposition for this.
Interviewer: By implementing only this AIR device throughout the country, or in a large area, do you see any benefit on the health sector or clinical care.
Responder: Definitely first thing all the doctors are the staff they will be properly trained and they can retain their knowledge for a longer duration, instead of like we tend to forget something that will be reduced, our skill will be retained for a long time. And the number of complicated cases

will be reduced and the work burden in the district NIC use and Central NIC use will be reduced. So if these cases are reduced they can divert there work to other health cases like septic cases and other things like ventilator cases. We can do in a better way. If they are getting out of 10 cases 4 cases and they will not get much time to take care of the other six babies, who are admitted for some other reasons. So if we can produce this birth asphyxia cases are prenatal depression cases whatever we say it will definitely help.
Interviewer: So you feel that all the clinical care of the country will improve.
Responder: It will improve
Interviewer: So for that there could be any barrier could be there?
Responder: No I don't think any barriers will be there not any political way or not in an economical way. I don't think there will be any barriers. If there is benefiting anybody they will definitely take it up. I am sure.
Interviewer: So you will support that we can use this device for clinical care set up also?
Responder: Yes definitely not the present device may be an improved device.
Interviewer: What is your overall, three things I would like to know as a paediatrician the importance of birth asphyxia and resuscitation?
Responder: Yes sir.
Interviewer: And what is this AIR device in compacting that and what will be the large picture in using this kind of machine learning device? So what do you feel?
Responder: Larger pictures, ultimately everything will be going in a machine way. Earlier we use to do diagnose most of the things clinically. Nowadays everything is going in a machine way, most of the diagnosis we are doing by investigations only. We don't waste time in like, what kind of murmur is there we go for echo and diagnose the disease we use to learn what kind of murmur is there, what is there what is not there we use to invest heavy amount of time in learning that. That used to help earlier to diagnose the cases. Clinically those days these facilities when not there. Nowadays everywhere machineries are there. With time we have improve the machine only. And we have to take use of the machines definitely. And this device is helping us and we have to use it. In a large picture it will definitely improve overall complications of the new born. Sir, so ultimately the burden of such cerebral Palsy cases will be reduced. We are using what Mahatma Gandhi or Subhash Chandra Bose in a cerebral Palsy, maybe we will get them, probably it will help ultimately to improve the country.
Interviewer: Thank you very much for your insights, full thoughts and putting the device in such a way

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Moderator: Good morning, I am Dr Mayuri Kulkarni (Research Officer). I work here at the Research Unit. Thank you for sparing time from your busy schedule and coming here. I will tell you why we have called you here today. It is about the AIR study that we have been doing since the past six months. We started the first training in March and you have now been practicing for 6 months. We want to get information from you about what you liked about it, or what difficulties you faced etc. Your participation in this interview is voluntary. I will ask you some questions. If you do not want to answer any of the questions, you may tell me so…. In order to not miss any of the points that you tell us, we are audio recording this. If you permit, we may start.
Participant: Okay. In which language do I speak?
Moderator: You can speak in Marathi or even English and even use Kannada.
Participant: Some words are difficult to translate into Marathi.
Moderator: Okay. Another thing is that there are no right or wrong answers in this. It is absolutely your perception about the AIR study and other things that we speak about. You need not worry about that. Some of the discussion may not be about your own experiences. It could be what you have heard, or what you have discussed with other staff or with other PHC personnel or during training. Or you might have also discussed about this with other colleagues and doctors. Please share those experiences in this discussion. If there are any issues which are very controversial and you do not want to speak about them, that is okay. But if you feel that there are any such things which are important for scientific advancements, I would request you to please share them here because there are some things which you need to answer as an administrator and some as a clinician and some as a PHC medical officer.
I would like to know some facts about you. How many years are you working since?
Participant: My name is Dr Sachin Sharma. My qualification is MBBS, MD Community Medicine. After MBBS, I worked for one and a half year in BIMS hospital (It is a tertiary care Government teaching hospital). Then after that, I got into postgraduation. After that I joined KLE (It is a tertiary care private teaching hospital) for almost four and a half years. I am in the Government set up for the last three years.
Moderator: Okay. How many deliveries have you attended till now?Participant: I have conducted deliveries myself in my internship. That was more than 100. These I conducted myself. I have attended a lot of Caesarean deliveries and vaginal deliveries with my seniors. Then after a gap of 8 to 9 years, after I joined the PHC (Primary Health Centre), we have 10-12 deliveries per month in the PHC. Sometimes there are even 20. I am present in the PHC, not for all of them but for almost 50% of these deliveries. Majority of the deliveries happen at night and at that time, our availability is a little difficult.
Moderator: Can you give us a rough figure of how many deliveries you might have attended till now?
Participant: Maybe about 200.
Moderator: Are there cases of birth asphyxia?
Participant: Yes.
Moderator: How many such cases have you handled?
Participant: Maybe about 10 to 15 till now. These are cases of "proper" birth asphyxia. About 10 to 15.
Moderator: Have you conducted resuscitation for these cases?

Participant: The techniques for resuscitation were a little different when we were studying MBBS. The way our teachers taught us, "First do suctioning, then rub the back." We were trainees then. We were not that experienced and we did not know the proper techniques. Even then we used to use the Ambu bag. When I came to the PHC, we had some knowledge. We used to attend some basic training workshops, some CMEs etc. We learnt regarding the size of the mask, the proper method, the technique of holding the ambu bag, etc. Then after learning all this, I was able do the proper implementation at the PHC.
Moderator: While doing the resuscitation, what challenges do you face? What are the difficulties?
Participant: Do you mean previously?
Moderator: Yes, previously.
Participant: I will tell you my opinion or perception. After a long gap of 8 to 9 years I came to the PHC. I had no contact with deliveries in my work or postgraduation for that long. Even then, I used the knowledge I had gained during my internship. Regarding the challenges for resuscitation, in the Government set up, there is a huge load of patients. Whether it is as OPD or as emergencies. It is not possible that we are always present when deliveries are taking place. Most often, only normal deliveries are conducted at the PHCs andmost of the times, it is the staff nurse who conducts them. Even in the night, it is the staff nurses who are present. So, we are not available for resuscitation at each time. Even if we are present, the situation is such that we were never given hands on training in the past. I used to still try whatever I could. But in my opinion, 50% of the times, we were not successful in resuscitation. We used to refer if there was any issue.
Moderator: What were the reasons for referring?
Participant: For referral…. first of all, when there is birth asphyxia, at the times that I am not present, it is not like I have complete confidence on the staff nurse. She will conduct deliveries. She is 100% perfect in that. But I am not 100% confident that she is trained in baby resuscitation and will carry it out. If something goes wrong…. We say one thing, "Everything needs to be done in the Golden hour." If it is not taken care of in the Golden hour, we can lose the baby and the Infant mortality rate of India will rise. Due to this, we used to refer to where Pediatricians are available. If regular training is there, we will be confident.
Moderator: So, you say that regular training is not available?
Participant: No, it is not available.
Moderator: What trainings have been conducted and when have they been conducted?
Participant: There are trainings like Newborn Resuscitation care, or other training in the Government sectors….all these trainings are conducted regularly, at least once in 6 months. But these trainings are not hands on. That is the only disadvantage. And unless we do it ourselves …. like how to use the ambu bag, what its parts are…. not everyone has knowledge about this. Maybe I know it but my staff does not know about it. That is the point.
Moderator: Okay, so you say that the training is the most important thing.
Participant: Yes. Training and practice.
Moderator: Okay. These are the main issues because of which there is no confidence.
Participant: Yes. And it is true that not all babies will need resuscitation. Our patient selection is also in the same manner. If all the reports are in order and we are able to handle it, the we do it in the PHC. Otherwise, all high-risk cases come to tertiary care hospitals or other places. Like CPD, or meconium, or if there is less liquor, they get referred. Out of the 10 or 12 we handle, one might, by chance, end up in birth asphyxia. If I use the Ambu bag only once in a month or once in two months, I will definitely not have practice. That is true.

Moderator: Correct. What other challenges do you and your staff face? As it is the staff who attends most of the deliveries. So, are there any other challenges and barriers?
Participant: (Pause) No, there are no other challenges.
Moderator: There are no other?
Participant: Let me talk about what happens in the PHC or CHC (Community Health Centre). There is only one doctor and one staff nurse. She conducts the delivery. We talk about the Golden hour (He means golden minute, it is a slip of tongue) …. the Golden minute, it is only one minute, 60 seconds. Within 60 seconds of the delivery, we need to arrive there. Simultaneously what is also happening is that during OPD hours, there are 10 patients standing in front of me. Some may have an emergency and some may be regular patients. By the time we can go there, one minute is already over. That is one challenge.
Moderator: You mean that the number of staff is less?
Participant: Yes, it is less. That is also a challenge.
Moderator: Okay. Do you feel that by the AIR device being introduced, it has helped you overcome some of the challenges? And how has this happened?
Participant: After the AIR device was introduced…..before your study was started, we underwent a pre-test. Whether I speak about myself or my staff, we were not using proper techniques 99% of the times. You know the advantages of the AIR device. It has three indicators. We look at the rate, whether there is a blockage and whether there is a leak. Only when all three are done correctly, proper resuscitation will take place. Previously we did not have the device. We felt that we were doing things correctly. We thought, "We are using the ambu bag. We are doing proper resuscitation." It was taught to us during CPR training for cardiac arrest. That is technique we were using. But after the AIR device has been provided, due to the indicators, we had a lot of improvement. Including mine. Not only the staff, my skills also improved. Though we knew 50%, now our improvement is up to 100% in resuscitation. And both my staff were not able to figure out for 2 to 3 months where the blockage was, how the air was leaking….Now we know the technique of holding the mask and selecting the proper size mask…For preterm we use the one number mask and for the babies above 2.5 kg we use the different number mask. Not everyone knew this before, not all the staff. I feel that due to the AIR device, there has been a proper training.
Moderator: Okay. Can you please tell me some details about the AIR device? What is the AIR device? And how does it work? Like you just described the blockage and such. Can you speak in more detail?
Participant: About the device?
Moderator: Yes, about the device, about the application.
Participant: The AIR device is an Augmented Infant Resuscitator. That is the long form. As a trial study, it has been introduced in several Government hospitals. To speak about the device, it can be attached to our regular Ambu bag. There are 2 buttons on the AIR device. One is an on-off button and the other is Bluetooth. It runs on batteries. If we put in two batteries, it starts working. It has three indicators – for blockage, leakage and rate. There are indicators – orange, red and green. If it shows green, it means we are using the proper technique in all three parameters. If the rate is 30 to 40, it shows green. For leakage, if we fix it properly over the baby's nose and mouth with a C- technique and there is no leak, it shows green. Otherwise, it shows red. For the blockage also it is the same. It may be at the level of the neck. Or, even if we press it over the nose too hard, it shows blockage. And there is an application for the device. There is an AIR device app available on android. We can download it from Play store. We were given participant IDs. Every time we

were using it, we used to put on the Bluetooth and connect it after selecting the participant ID. After this, as we used the AIR device, it used to automatically get recorded – the rate, blockage, leakage. We used to set an alarm at 120 seconds, 2 minutes.
Moderator: Okay. What facilities are available at your PHC for resuscitation now?
Participant: For resuscitation we have a suction machine, a penguin sucker and an ambu bag.
Moderator: Okay. And what else do you need?
Participant: At the PHC level, we don't need anything else.
Moderator: Okay. If you had to manage cases of birth asphyxia at PHC level itself, what would you need?
Participant: If we had to handle cases of birth asphyxia at this level?
Moderator: Yes. Because sometimes when you refer cases of birth asphyxia, we might lose the babies in transit, isn't it? So, at your level, if we wanted to save the babies, what would you need?
Participant: The first thing is that we will need experienced staff. There is only one staff nurse on duty at a time. Every 8 hours, one staff nurse is on duty. If you compare the same in a CHC or General Hospital or in BIMS or in KLE, at one point of time, there are a minimum of 3 to 4 nurses. So, if we want to handle in our place, we will need one staff nurse, one doctor, one pediatrician and all the equipment.
Moderator: Okay. All the equipment that you are talking about, are they available in your facility or not?
Participant: No.
Moderator: No? But you need all those?
Participant: There is a requirement but they are not supplied at PHC level.
Moderator: Okay. What do you do to update your skills in resuscitation?
Participant: Do you mean before the device or after the device?
Moderator: I would like to hear both.
Participant: I will tell you about before the device. To tell you frankly, I never thought much about it. I never felt that it is a requirement. We were managing in some way. We have Oxygen and we have the ambu bag. When the need arose, we were using them. We never practiced as such. We never took the Ambu bag in the hand and checked whether it is working well, whether its seal is proper or whether it is leaking, whether there are any cuts etc. To tell you truthfully, we never checked all this. After the device has come in, after the project started, it was done daily or almost daily. Even if I was not available, my staff used to do it. When I was available, I used to do it. But due to the daily practice, we had a lot of improvement. We could see that - how we perform today, and how we perform the next day. Even though the indicators were masked, we were confident we were doing it right because we could see the chest rise and other things. We understood about the rate at which we were doing it etc. This happened automatically. So, after the device came in, due to the device and the proper training under Bellad Madam and Dhaded Sir, it was good.
Moderator: There was masking for four months, right?
Participant: Yes, for four months.
Moderator: What difference did you observe when the masking was removed compared to when it was there?
Participant: Nothing at all. We had improved to that level.Moderator: Because the indicators were not visible to you.
Participant: Even though the indicators were not visible, our techniques….or at least my own techniques had improved and by one month I had learnt 100%. There was no difference whether masking was done or not. It made some

difference to my staff even though they also improved a lot. But this device has helped us to such an extent that even without the indicators, even without the device, we can do it correctly with only the Ambu bag.
Moderator: For how long did you practice?
Participant: Shall I tell about myself?
Moderator: Talk about yourself and about your staff.
Participant: To speak about practice, I already have enough theoretical knowledge. But I did not have experience of practically doing it. When this study started, I got to know my level in the pretest. Then after that, I got trained as Master trainer for 3 days. I was entrusted with doing the training in my Taluka. Dhaded Sir, Bellad Madam, Dr Data and another lady were there. They trained me very well. They taught me about what had to be done right from delivery up to 1 minute after delivery. What the position of the mother should be, how the feeding had to be done, how to wrap the baby, how it was to be shifted….this was all taught. During this, I became very confident, that, "I am now trained." Then I conducted training sessions monthly in my Taluka. That staff also got trained properly. Can you tell me the question again?
Moderator: How often did you practice?
Participant: Oh yes! Practice! Our working pattern in the month is – we do not go to work on Saturdays and Sundays - Second Saturdays and Sundays to tell truthfully. So, we work 5 days a week. We work 24 days a month. In these 24 days, we have meetings or trainings for 4 days. Another 2 to 3 days are used for some other work like training or other things. So, for 15 to 18 days, when I was present, I used to practice. Once it so happened that, during these 6 months, I was posted for 21 days to a training in Hubli. Including holidays, I was not there for almost 25 days. Even then, when I returned, my confidence and skills were the same. Which means to say that even though I did not practice for a month, there was no deterioration in my skills. It was just the same.
Moderator: So, you were still equally confident?
Participant: Yes. And I would say it is the byproduct of your training (laughs).
Moderator: Okay. How often did the staff practice?Participant: The staff practiced almost daily. In the initial one month they were not very regular. When Research officer started visiting and checking every month, they became regular. Attendance was marked, isn't it (laughs).
Moderator: Okay. What was the reason for them not practicing initially?
Participant: It was because of their workload. It was not on purpose. It was because of their workload. One is the workload and the second is, they may not remember to do it. The staff nurse does not have only one responsibility. She has to see OPDs (Out-patient Department), she has to look after the injection room, immunization, IV, IPD (In-patient department), labour room, autoclave….so it is not just one job. She has to maintain registers…Due to the workload there was some issue. Even then, I told them that, "As soon as you report for duty in the morning or whenever your shift is, even before you change into your uniform, complete the practice and then start. After this instruction was given, they followed it daily.
Moderator: Did they have interest in it while practicing?
Participant: Yes, they had interest. Leave aside their interest – even our Group D workers used to do it (laughs).
Moderator: Oh great!
Participant: Yes. 2 of our Group D workers are graduates. And why it is important for Group D is because there is no one else available for help. The first step you specify when resuscitation is

required is, "Call for Help." Not everyone there is skilled – the patient's relatives are not skilled. And the doctor may not be available. The staff nurse is alone. At night, one of our Group D staff is always compulsorily available. Hence, I felt that it would be good to teach them too. With my permission and out of their own interest, they have practiced.
Moderator: Did you train them?
Participant: Yes.
Moderator: And have their skills improved too?
Participant: Yes, they have.
Moderator: Okay. Now I want to know, what did you like in the AIR device?
Participant: In the AIR device?
Moderator: Yes. All in all. How is the device? The functions of the device, or the appearance of the device…Participant: Regarding the function of the device, it is very accurate. The accuracy is good. What I dislike, or the only disadvantage is the weight.
Moderator: Tell me about the likes first and then we will go onto the dislikes.
Participant: The first thing is, by looking at the device itself, we get motivated. We feel, "Because the device is there, I can absolutely certainly do it." The indicators on the device are another positive feature. We get to know whether we are doing it correctly or not. Sometimes in a hurry, when the baby is not doing well, in the flustered mood, we might sometimes do the resuscitation rashly. What is it called? Harsh ventilation, low ventilation…. This might happen. But because of the indicators, everyone's confidence level has improved. Another thing is that the device is handy. It is not too complicated to use. The usability is good. And it is not only for doctors. It is for all the staff, including Group D as I described. It is very convenient for even them to use. Then anyone can handle during emergencies.
Moderator: Have you handled any such emergencies?
Participant: No such situations have arisen.
Moderator: When you have used the device?
Participant: The device? How can that be? You have given it for use only on the mannequin, not on the live baby.
Moderator: But even without the device…now that your skills have improved.
Participant: Yes, there was one such case. We used the ambu bag and did suctioning and administered oxygen. This has happened for one or two babies when I was present.
Moderator: Can you describe the scenario?
Participant: It was a case of prolonged labour. She was a Primigravida. We plot the partogram. On the partogram, there is a limit. We plot for about 12 hours. If she does not deliver by then, we call it prolonged labour. In such a case, we have some criteria. If we feel there is CPD or for any reason if there is prolongation of labour, we refer immediately. But sometimes the situation is such that…. On vaginal examination, the cervical dilatation needs to be over 10 centimeters. Sometimes it may be 9 centimeters and then getting delayed. What happens at night is that no vehicle is available. It might take half an hour for the 108-ambulance to arrive. You know how the road conditions are at present. To reach Belgaum, it takes 2 hours. We take a chance, thinking, "What if she delivers on the way? If she delivers in our presence rather than on the way, we might at least be able to save the baby." So, we take a chance. We arethen a 100% sure that this baby will need resuscitation. Because there is obstructed labour, there is a risk of asphyxia. So, we make all the preparations beforehand. That was what happened in that case. We were successful. We saved the baby. After delivery, we kept the baby under observation for about 2 hours and then referred to the Pediatrician.

Moderator: And is the baby healthy now?
Participant: Yes, it is fine.
Moderator: Okay. Now please tell me what you did not like about the AIR device and why? What features should be improved?
Participant: Okay, about dislike….I think your device is 7 to 8 centimeters long. It is a bit too long and it is heavy. We need to attach it in between the mask and the bag for use. Because it is heavy, it shifts around a little. The chances of leakage increase. And because it is long, it causes obstruction, it limits our visibility. If it placed to the side, it is okay. But in a hurry, we cannot be sure how we place the device. If it is towards the chest, it obstructs our view. That is one of the disadvantages. Other than that, there are no other dislikes.
Moderator: Okay. So, you suggest that the size has to be decreased.
Participant: Yes, the size and weight need to be reduced.
Moderator: Anything else?
Participant: Nothing as such. The colour is good (both laugh). Another thing is that, we cover a few tribal areas. In Belagavi district it is not an issue because there is network everywhere. Now satellites have come up and there is network everywhere. Do you know of an area called Islampur (Place name)?
Moderator: Yes.
Participant: There is no proper network there….on and off. Your device works on Wi-Fi. So, see if something can be done such that there is no requirement of Wi-fi. Was the Wi-fi needed only for the study? For the connection?
Moderator: In fact, the study is only to see how you are performing in real time. And to record what you are doing with the help of the Wi-fi. When we do it in real life, in the implementation phase with asphyxiated babies, I think we will need this even then, so that the training techniques can be improved. That is the intention. So, if you are suggesting that we should avoid the use of wi-fi and maybe use Bluetooth connections, it is a very good suggestion.Okay. You have been using the AIR device. Have you had any challenges during use? From the beginning. And they may not be only for you but even for your nursing staff and others.
Participant: We had challenges during use. Nothing major, they were minor. The first thing is that we were all aware that whatever we were doing was being recorded, it was a study. How many times in a day we practiced, it was getting recorded. And we did not know whether we were doing it right or not because of masking. That was a challenge – that, "We should do it right." The other thing is that all staff members were doing it. We used to put on the Bluetooth and put the cap. But some staff could not make out whether it was connected or not. That we got to know later. In the second month we found out that when we first press the ambu bag, the Bluetooth indicator on the mobile phone starts blinking. That we go to know later. For one month, we were not able to understand this. That seemed to be a challenge.
Moderator: Okay, about the connectivity.
Participant: Yes, the connectivity. What we used to think was that because we pressed the Bluetooth button once, it was connected. How were we to know whether it is connected or not till it started blinking?
Moderator: What other challenges did you have? Both your own and for the staff.
Participant: In using the device?
Moderator: Yes. In using the device. In the two-minute practice that was done, what were the problems from the beginning?

Participant: Okay. All steps were not being followed each time. You had provided a chart about newborn resuscitation - What steps to be taken if the baby is crying, what steps if the baby is not crying, what to do if heart beat is present and what to be done if not. What we used to do was, each time we used to disconnect everything after use. The umbilical cord, the device and everything. Sometimes in a hurry what used to happen was, we would not assemble everything. Resuscitation was started even before assembling everything. What you had taught us as the steps after delivery were, to wipe the baby, then shift it, do suctioning, rub it, and then starting Ambu. If not effective, get a person to check the umbilical cord pulsations. All these steps were not followed properly. And about the device, the issue was the connectivity. Sometimes the network was not available. Once the recharge had not been done (laughs). Some such things have happened.
Moderator: Okay. Anything else?Participant: Nothing else.
Moderator: Do you want to suggest any changes? Something that will make the use better and easier. You have already mentioned the size and weight and also that you liked the colour. Now please tell us how we can modify it to make it better. We will see, whether your suggestions are feasible and incorporate them.
Participant: As I said, the first thing is the size. The size could be made handier. If it is 3 to 4 inches only and all the indicators could be fit on that…. All the indictors should be available. That is also important. Two buttons and all three indicators should be there. If that is possible. Like a remote or a mobile phone, there could be two buttons on one side – switch on/off and Bluetooth; and on the other side the indicators could be there. In the middle there could be something for visuals. That is one suggestion. That is all, there are no more suggestions.
Moderator: Do you think that the AIR device is easy to learn?
Participant: If one does it, it is easy. If one learns it, it is easy. It is my belief that if there is something to learn, as long as you do not want to learn it, you will not learn it. That is true.
Moderator: How is it easy and if not, why is not easy?
Participant: Let us assume that there are 10 staff. 10 staff nurses are there. For example, in a Taluka hospital, a general hospital, there are 10-12 staff. Not everyone wishes to do everything. Amongst 10 staff, 8 may be very interested. “We have to do this.” There will be the other two – even you know about this. “Why should I do it? It is not my job. It is the doctor’s job, the pediatrician’s job.” This is also an issue. There could be a lack of interest.
Moderator: But when trained, is it easy to learn?
Participant: Yes, it is easy. When trained, it is easy. It is not so complicated. And whether in the doctors’ training or the staff nurses’ training, the bag and mask is an old technique – quite an old technique. Everyone knows it since then and have been doing it since then. And if they are trained in using the device, it will be useful to them. There is nothing difficult about it.
Moderator: Your staff did not have any difficulty, right? In device attachment or connection…?
Participant: No, they did not have any difficulty.
Moderator: They learned easily?Participant: Yes, they learned easily. They learned a lot in one month.
Moderator: They needed one month?
Participant: Yes, approximately one month.
Moderator: So, according to you, it is easy for anyone to learn?
Participant: Yes. And as I said, our group D workers have also learnt and performed Infront of me. They were good at doing bag and mask.

Moderator: You have already told us before but I would like to know again – your skills have improved because of the device, and also those of your staff. How have they improved?
Participant: For example, we took a month to understand the connectivity of the device. Whenever I was there, they used to call me each time, "Sir this is not getting connected, please come." "It is not getting connected, please come." As days passed, they automatically got the hang of it because of repeated practice. I did not even know when they were practicing. But they were practicing on their own. They were connecting it on their own and doing it. Regarding the bag and mask, both our staff nurses were not confident and also did not know how to do it. I have observed in the training here and in the PHC. There was a lot of leakage. They did not know how to hold it properly in the first place. But later on, they learnt due to the continuous practice.
Moderator: Okay. If we wish to introduce the AIR device all over the country, what will be the challenges and barriers for the training?
Participant: In the whole country?
Moderator: Yes.
Participant: What I think is you have introduced it in a phased manner in Belagavi.
Moderator: Yes. We have implemented it in 12 facilities in Belagavi. If we were to do it all over…. Another thing is that you are the training coordinator for Belagavi for multiple national programmes. Please think that if you plan to implement this throughout India, how will you implement it? What will be the challenges, the barriers? And how will they be overcome?
Participant: First thing is that I think that we will not be able to introduce it all over India at a time because India is a very big country and very populous. And we have many hospitals. For example, if you consider only Belagavi, we have more than 170 public institutes and more than 500 private institutes. If you consider the whole state, I think there are about 20000 hospitals which conduct deliveries. Let us assume this to be 10000 instead of 20000. So, there are 10000 hospitals which are conducting deliveries. For these 10000 hospitals, we can conduct it in a phased manner. For this we will need our team. We will need a lot of manpower. And resources will be needed. The resources are man, money and time. If we have these resources, we can build a good team and conduct some CMEs. We can conduct CMEs and workshops. In each district we will need the permissions. The permissions will be handled by the higher authorities. If the permissions are obtained, we can do it, but it will take a lot of time. It is time consuming. If resources are available, we can do it but there will be lots of challenges. It is not easy to train each and every staff. It is not easy to go into each hospital and conduct training. It is okay in a phase wise manner.
Like you have done a pilot study now. We can do a pilot study in every district and go for implementation.
Moderator: And what will we have to do to ensure that there is compliance?
Participant: The same as now…..Hands on training and continued education, continued interviews as you are doing (laughs).
Moderator: How often will we have to do the training?
Participant: If you appoint a supervisor….for every 10 institutes you can appoint a supervisor. Then they can visit each institute over 10 days in a month. Then it will be easy. The main purpose behind this would be about the infant mortality. In India, the infant mortality rate was 50, about 7 to 8 years ago. Now it is in 2 digits – about 23 to 24 all over India. If we consider Karnataka, it is about 18. In my opinion, if we want to decrease the infant mortality rate, this device is extremely useful.
Moderator: Okay. If we want to implement this AIR device in clinical care, what will the challenges be?

Participant: They will be the same, isn't it?
Moderator: But now you are using it on the mannequin.
Participant: Oh, I see. We are using on the mannequin and that is the reason we are confident. We do not have a live baby. If there is a live baby, we will need much more hands-on practice. We will need regular practice. On the mannequin, we know that there is no life and we can do it in any way. But in the live baby, it is not like that. We need that much more confidence. And more training will be needed….All of us have been trained already, but let's assume I have been trained but some other doctor comes in my place in the future, he will also need to be trained. They will also need it. Because we cannot be expected to do it on a live baby at once.Moderator: So, continuous training will be needed.
Participant: Yes, continuous training and practice will be needed. I think it will take another 6 months.
Moderator: Okay. But you think it will be successful?
Participant: Yes, it will be successful. Another thing about the device is, if it implemented all over, I suppose one or two devices will be given per institute.
Moderator: Yes.
Participant: They will be purchased or procured by the Government or made or whatever. We will use these devices for every baby for resuscitation. There will be a problem of autoclaving these devices. It has a battery, and Bluetooth and other things installed. There will be a totally different technique of sterilizing it. What is the technique? Yes – UV. So, we will need a UV sterilizer everywhere. That will also be a barrier.
Moderator: Okay. Do you have any other suggestions or comments?
Participant: No, no other suggestions. As a comment, I will tell you my overall experience. I will speak about Hukkeri Taluka. No, not only Hukkeri, all over Belagavi District. Wherever this has been introduced, I feel that more than 90% of the staff is confident in resuscitation. And they can say it with pride that, "We are properly trained in this technique." I have seen this myself. I have seen you visit Sankeshwar at 2 months, 4 months and 6 months. At the pretest time, we were worried whether we would be able to do it or not. Now it is not like that. "We will be able to do it without any problem." That is the confidence everyone has developed. The main motto is that when everything is done properly, things will go as planned.
Moderator: Thank you for sparing time and coming here and giving us such useful information. We will definitely incorporate your suggestions for improvement of our device.

Thank you.

10711-20210125-STAFF NURSE

Interviewer were explained the study objectives to the participant. Told about the importance of participation in the study. After taking the consent interview was started. Participant was told to maintain confidentiality.
Interviewer: What are you working as?
Participant: I am working as nursing officer.
Interviewer: Since how many years?
Participant: Since fifteen (15) years.
Interviewer: Ok, you are working in PHC since 15 years.
Participants: For thirteen (13) years worked in CHC since last two (2) years working in this PHC.
Interviewer: Do you conduct delivery is also?
Participant: Yes we do.
Interviewer: Approximately how many deliveries you have conducted in last 15 years of your service?
Participant: More than thousand normal deliveries.
Interviewer: Ok, what about C section deliveries. How many you have
Participant: They are also more sir. Maybe around thousand.
Interviewer: Ok, will there be any breathing problem in the newborn?
Participant: Yes, will be there.
Interviewer: Ok how many babies had breathing difficulties among the deliveries you conducted?
Participant: Out of two thousand (2000) deliveries, around 100 to 150 babies had breathing problem.
Interviewer: Ok what were the challenges or barriers for resuscitation in your past 15 years?
Participant: Initially what we used to do was lower the head of the baby and rub the back. We did not have knowledge about bag and ventilation procedure. We were trained in a study called helping baby breath. All the nursing officers and medical officers were trained. Our skills got improved.
Interviewer: When was the training given?
Participant: In the year 2011.
Interviewer: Ok, your skills improved because of training. Where there any challenges to do back and mask resuscitation?
Participant: It was less when compared to present level.
Interviewer: What were the problems in resuscitation?**Participant:** Mouth of the baby used to not open during resuscitation. Now with present device we will come to know whether is the blockage. Or there ventilation is proper or no. Based on signals it shows. We will come to know.
Interviewer: Ok, you had difficulty in the past?
Participant: Yes
Interviewer: Were the training given from the government side?
Participant: Yes.
Interviewer: Ok only trainings were given or they also used to do follow-ups?
Participant: Only they used to give training.
Interviewer: What they used to train?

Participant: Trainer use to train us using mannequin but there used to be no follow-ups.
Interviewer: Ok was there scope to improve knowledge?
Participant: Yes sir.
Interviewer: How frequently the training were given previously? Participates yearly once
Interviewer: So how you will come to know that you are doing correctly or no?
Participant: No sir, there was no monitoring.
Interviewer: So there was no use of training that were given?
Participant: No sir, only during training sessions we used to remember. But once in the facility we used to forget.
Interviewer: So there was no benefit of the trainings?
Participant: No sir.
Interviewer: We have started with the new study called "Air Study" since past one year. Do you know about it?
Participant: Yes sir.
Interviewer: What was there in that study?
Participant: We used to do ventilation on mannequins, timer was given, used to do ventilation for 2 minutes using timer. It used to record in mobile phone device.
Interviewer: What were there in resuscitation?
Participant: Bag and mask, timer, device.
Interviewer: What was seen in device?
Participant: 3 indicators were there. One was blockage.
Interviewer: Ok, how do you come to know that you were doing correctly or not?
Participant: Based on lights red light for blockage. We used to cover and do whenever we did not understand we used to remove. And then do bag and mask.
Interviewer: You said about red light. Which light used to come for doing correctly?
Participant: Green light.**Interviewer:** where the challenges of resuscitation were solved or improved when compared to passed?
Participant: Yes sir.
Interviewer: How and why do you feel?
Participant: We will come to know about it when we do resuscitation on a live baby. Till now we did on mannequins. We felt the weight of the device is more.
Interviewer: Ok will ask about that later. Is there improvement resuscitation challenges when compared to past?
Participant: yes sir.
Interviewer: Ok, you said you have done on mannequins. Are you conducting deliveries with this knowledge?
Participant: Yes sir, we are conducting deliveries.
Interviewer: Is there improvement in resuscitation by using Air device?
Participant: Yes there is improvement.
Interviewer: is there improvement of your skills?
Participant: Yes sir, we did this resuscitation for 6 months and there is improvement of skill.
Interviewer: What are the facilities you have for resuscitation during deliveries at your health facilities?
Participant: Bag and mask, pediatric stethoscope, mucus sucker, warmer.
Interviewer: Ok where these available now or use to be there before also?

Participant: Drapes and all were supplied after HBB training. Before that we used to do with bag and mask but with less accuracy.
Interviewer: Was it useful for babies?
Participant: Yes sir, but survival chances were less. Septicemia used to occur.
Interviewer: In which year did you join as a nursing officer?
Participant: 2006 sir.
Interviewer: Ok, please share your experience of 2006 to 2011, before HBB training.
Participant: That time I attended very less deliveries. Have seen one or two babies with birth asphyxia.
Interviewer: Ok what other nursing staff used to say about resuscitation?
Participant: Day were afraid of resuscitation. There was no proper training.
Interviewer: So you said about Air device, what was good in that device?
Participant: It shows whether we are doing properly or no. That we like.
Interviewer: Ok, anything else you feel good about that device?
Participant: I felt only that part device is good.
Interviewer: Anything you did not like in that device?
Participant: Only weight of the device that I did not like. Remaining is good.
Interviewer: Are you facing any challenges in using Air device?**Participant:** No sir.
Interviewer: What about others in the study?
Participant: Few of them had leakages, blockage in the device.
Interviewer: Ok, did they say any other problem with the device?
Participant: No sir.
Interviewer: If we want to change in "Air device" what change do you suggest?
Participant: Weight of the device should be reduced. Digitalization in device would be better.
Interviewer: Ok any of your nursing officer's suggestions?
Participant: no sir have not asked.
Interviewer: Ok weight needs to be reduced and digitalization of device are your suggestions. If any other suggestions, please let us know.
Participant: Yes sir.
Interviewer: Do you feel difficulty in using this device? Or it is easy to use?
Participant: No difficulty in using the device.
Interviewer: What about other?
Participant: No sir can use it without difficulties.
Interviewer: Ok, have you seen any challenges placed by others in using the device?
Participant: Mainly leakage problem of device. If water is more or full in mannequins then can't use device.
Interviewer: Is it easy to learn the usage of device?
Participant: Yes, it is easy.
Interviewer: Is it easy for the new nursing staff to learn the device usage?
Participant: Yes, it is easy.
Interviewer: Will it be difficult for old nursing staff?
Participant: Yes it may be difficult for old nursing staff. Handling it may be difficult.
Interviewer: But it is easier to learn?
Participant: Yes, easier to learn.
Interviewer: Since how long you are using Air device?
Participant: Since six months.

Interviewer: Ok can you give example for improvement of your skills using this device?
Participant: Have not got birth asphyxia cases to handle now. Now I am not posted in delivery wards/rooms.
Interviewer: Ok, you have not come across such cases.
Interviewer: Do you feel there is improvement in skill when compared to past?
Participant: Yes, I feel there is improvement.
Interviewer: How much confidence or guarantee you have that you can do resuscitation if get case when compared to the past?
Participant: 99.99%
Interviewer: Ok can say 100% guarantee of resuscitation. Any suggestions for changes in device?
Participant: No other changes.
Interviewer: So by providing a device to the health facility, will there be improvement of skills and capacities of nursing staff?
Participant: Yes, there will be improvement.
Interviewer: How do you say that?
Participant: Participant by using daily, the skills will improve. Will get knowledge also.
Interviewer: Why do you say improvement by using device?
Participant: We will come to know how much ventilation we have given without blockage.
Interviewer: Since it displays the blockage, we will come to know how much our skill has improved. Also by doing or using daily, the skills will improve. Is there anything that will help in skill improvement?
Participant: Nothing else.
Interviewer: Will there be any challenges to train all the nursing staff about this device?
Participant: No sir, youngsters will do sir but for old staff it may be difficult.
Interviewer: Why it will be difficult?
Participant: Because they have not used the device and they will be afraid of using.
Interviewer: Is it possible to train more staff like ANM's about this device.
Participant: Yes sir, it is possible.
Interviewer: Ok, will there be any difficulties and how we can overcome those difficulties?
Participant: There won't be any problem sir.
Interviewer: So there may not be any problems and training will be easier. Will it be easy if trainings are done to all the health staff of the country?
Participant: Yes sir it will be easy.
Interviewer: By doing or participating on mannequins will there be improvement in giving clinical care for live babies in the country?
Participant: Yes sir, there will be improvement.
Interviewer: What can we do in device to make improvement in care?
Participant: Will come to know once we use device on babies.
Interviewer: Is it easy to implant through country? Will there be improvement in clinical care?
Participant: Yes sir.
Interviewer: How it will be beneficial if improved?
Participant: It will help babies mental damage can be prevented.
Interviewer: What clinical improvements can be seen with this device?
Participant: Don't know much sir.
Interviewer: How should be the training about device usage? How training should be given?
Participant: Don't have idea sir.

Interviewer: Now this Air study is going on. Do you want to share your experience or your suggestions or other suggestions about the study?
Participant: Have not asked others. My skills has improved. More than HBB study, now my skills have improved.
Interviewer: Many deliveries occur in PHCs will there be any difficulty to train the PHC staff?
Participant: No sir
Interviewer: Will the clinical care can be improved by using the device?
Participant: Yes sir.
Interviewer: Can it be done in all health center?
Participant: Yes, can do in all health centers and there will not be any problems.
Interviewer: Anything else you want to tell about a study device or resuscitation?
Participant: Nothing else only about weight reduction and digitalization.
Interviewer: what about studies should they be done? It is good to do such studies or no?
Participant: It is good to do sir.
Interviewer: Ok thank you very much for participation.

10701-20240207-Medical Officer Male

Interviewer: For how many years you have been working as paediatrician
Responder: It is one year since I have been working as a paediatrician soon after completing my Post graduation in paediatrics and have joined the service.
Interviewer: Before that where did you work?
Responder: I have worked in a PHC before that for about 7 years. I did my Post graduation as an in service candidate and after that I have joined the CHC as a paediatrician.
Interviewer: During your service in PHC and during your Post graduation time you might have gone to attend the new-born babies after delivery
Responder: Yes
Interviewer: So you have attended
Responder: Yes
Interviewer: According to you which is the most dangerous thing that can happen to a baby immediately after delivery?
Responder: The thing I want to share with you is, in the periphery the staff nurses, most of them are unaware of the resuscitation, they don't know enough about resuscitation. If the baby doesn't cry, they don't know what to do and on the peripheral hospital, during night, there will be only one staff nurse on duty and during that time if a medico legal case or delivery case comes then, it will be difficult to do resuscitation. Because of less number of staff, the quality of resuscitation suffers. And among whatever the staff that are present, they are not much trained. They have got the knowledge, but they are unaware of the practical part of it. If they are trained practically, and made expert, we can make resuscitation within quick time and we can expect good output.
Interviewer: You told that they have less experience, what do you think is the reason?
Responder: The reason is there are so many nursing colleges they would have read the theory, they would have done the practical also. But they would not have had the opportunity to do it on the live babies. As much they do it on the live babies that much will be helpful to us in resuscitation. Even though we have given them much training and shown them demonstration on mannequin, it is totally different from doing it on live baby and on the mannequin. The feel itself is very different. The staff nurse if they are alone they feel uncomfortable during the night, they will not be knowing what to do. The things will not be arranged properly. And during that time if a MLC case comes, they have to manage that also. In such condition, if we make them expert they will be very confident. If they are confident, they can do resuscitation within a short time and refer the cases. That is what I feel.
Interviewer: You told that there is lack of resources, one is staff is less in number. What about the instruments required for resuscitation?
Responder: Resuscitation instruments have been supplied to all the health facility now. Even at PHC level they are supplied.
Interviewer: Not about now, you have seven years' experience working in PHC.
Responder: We had resuscitation instruments at that time. There was baby corner, warmer etc. All were in Primary Health Centre (PHC). I saw them in PHC since I joined PHC after my MBBS. Since then we had a baby corner in the delivery room for resuscitation. Everything was there but staff nurses were not well trained. We used to have only two staff nurses, one for the day and one for the night duty or if one goes for leave the other had to do both day and night duty. It used to be like that. Sometimes, some referred cases come all of a sudden, some cases come immediately after home delivery. At that time doing resuscitation was difficult and the referral also was little

difficult, because, we take one minute after birth as golden minute, but by the time baby is referred here after birth, by the time it is brought here, almost ischemic injury would have happened. After ischemic injury the baby can survive but the outcome will be totally be different.
Interviewer: Are they trained properly?
Responder: They have the knowledge when asked they can explain to "resuscitation should be done like this and like that." But they think what resuscitation they do is the correct one and correct and effective resuscitation is not happening in the peripheral institutions. Training is necessary for them and it is very important also.
Interviewer: In your opinion how many trainings have been conducted for them about the resuscitation by the government?
Responder: Usually after they join the service one training is given to them about resuscitation. Once the training is done, there will be no repeat training. For us, when were medical officers, once there was a training about baby corner and that is all. Once it was done and after that there is no training for us. Even when I joined PG course, during our education also we were not it so perfectly because we were also not exposed to it much. After doing it in the college, we have not done much resuscitation after that. After going to the PG, initially we were also feeling the difficulty, we were not able to do it that much correctly. But as the days past and as we started to handle the babies, then we felt easy to do it.
Interviewer: That one-time training given to you by the government, do you feel it is enough for handling so much deliveries in the periphery?
Responder: Actually, giving us training and sending us to peripheral facilities, I feel, it is better to give them training by putting resuscitation on the live babies, because for all the nursing staff, the training would have been given during their college days, but they would not be having much exposure. Because there is less staff, whoever is on the duty has to do the resuscitation, if there is any complication at delivery during their duty time, they only have to manage it, and if there is something wrong, there is every chance of the missing of the golden minute.
Interviewer: Just now you told that if the golden minute is lost there is possibility of ischemic injury, usually what would be the future complications?
Responder: In future, mental retardation chances, more epilepsy cases, cerebral palsy cases compared to earlier the things are reduced. But still we can save more cases. Some home delivery cases occur, even in deliveries that occur in our facility, there are some cases where babies having no cry at delivery. We do resuscitation and believe that the cry has occurred as we feel that we have done better resuscitation, but in future when we look at the outcome and find that it has ended up in some kind of disability, then we will come to know that the child had birth injury.
Interviewer: We conducted a study called Air Study. Could you please tell something about that study?
Responder: When we were doing our PG course, we have handled many cases, doing resuscitation, doing intubation, doing NICU admission. There also, birth asphyxia cases have occurred and birth injuries also have taken place. I don't say they have not taken place, but in spite of that we had the confidence that we had done our best. In this AIR study the pre-test was taken. After the pre-test, when we looked at our score, we came to know that we were doing mistakes somewhere. We thought that whatever pressure we used to apply was correct one. There was fast rate or slow in giving the rate, but we believed that it was correct. We were not concentrating much about the chest rise or blockage etc. After that we scored less in the pre-test, then we came to know that we were not correctly trained enough to do the resuscitation. Till then during our PG course we had handled many cases and we were under the impression that we had done resuscitation

correctly. After looking at AIR study and technology used in the AIR study, about pressure, about giving volume, about the blockage there our mistakes in that, those mistakes have been corrected after we took this training. After doing practise continuously we came to know about how much pressure is to give, whether we are giving correct rate or not, whether there is blockage or not, doing correction. Now we are feeling better, I think so…….

Interviewer: Actually, how do you come to know by that device whether you are doing the resuscitation correctly or not?

Responder: When the devices were given to CHC, they were kept open. There are the indicators were open. At that time, we were doing for the study purpose, we used to know that if we gave more pressure there used to be an indicator showing that we were giving more pressure and to suggest us to lower the pressure. If there was blockage, there used to be an indicator to show it so that we can get that blockage cleared. All most all our staff who have been trained and are doing practice, they are scoring more than 90% in doing resuscitation, not only us.

Interviewer: Was there any indicator?

Responder: Yes, there was indicator.

Interviewer: What indicator was used?

Responder: One was pressure indicator, if we give more pressure, a red light used to be indicated and we used to understand that we were giving more pressure, and when we used to lower the pressure a green light used to come that means normal pressure. Suppose if there was a blockage also a red colour indicator used to be shown and we got the position corrected and did the resuscitation correctly, then normal green light used to come. This way when we did mistake, immediately it used to be reflected and immediately we used to correct it ourselves and that helped us to improve our skill.

Interviewer: With the help of indicators your skill got improved?

Responder: Yes, it got improved, suddenly it used to be reflected what mistake we were doing and we used to correction immediately. This way by doing it repeatedly pressure, blockage, etc. were noticed by us.

Interviewer: Do you feel any improvement has taken place in your CHC, other PHC, and in your staff due to the presence of this AIR device?

Responder: Yes, I feel there is a lot of improvement. Including us, when the pre-test was taken during the training for the staff, their scoring was about 25 to 30 percent. But when the AIR study was given to them and they started doing daily practice, their score started improving up to 60, 70 % and even they can score up to 90%. They have given training to 15-20 staff nurses. All have improved their skills.

Interviewer: So you mean their skill is improved?

Responder: Yes, there is skill improvement in them, but they have not yet handled the live babies. One or two cases have come to us after that we have not seen any cases of birth injuries. The babies have cried immediately after birth. They have used bag and mask ventilation after that, we also have used and all the babies cried within 30 seconds and there was no necessity to refer any of those babies.

Interviewer: Overall you believe that their still has improved in resuscitation

Responder: Yes, I believe that their skill has improved and also their knowledge and confidence has also improved in resuscitation. Initially when a call used to come to us we used to think about "What should we do? Shall we refer the baby" like that we used to feel. But now they are confident and now they are able to make the baby stable by making the baby cry and then refer the baby. They are so confident now, by making a referral unit and putting oxygen to the baby.

Interviewer: Do you think that the AIR study has given them any support?
Responder: AIR study has supported them in improving their skills.
Interviewer: As a paediatrician, how much of your confidence has increased in resuscitating the live babies?
Responder: Actually, when I joined here as a paediatrician. I did not come across much cases of birth asphyxia or 'not cried immediately after birth' babies. When I was on duty one or two cases had come and I had handled them. Our staff also have handled two-three cases when I was not there on duty and there are no cases where in asphyxia injuries have occurred. All have cried within 30 seconds and we have not referred any cases till now. We give oxygen in our hospital only for about 6 hours and monitor them and shifted them to the mothers before discharging them.
Interviewer: You mean their knowledge, skills and confidence are increased?
Responder: Yes, improved. Initially they were knowledgeable but they did not have confidence about what to do and how to do. Now they have confidence and they say "what is there in it? It is just doing pumping" They are much more confident like this they have become confident.
Interviewer: What did you like in AIR device? What did you like about that instrument actually?
Responder: Actually, I don't have an idea about what programme this device has been done. But what is reflected what we are doing on it, and getting ourselves corrected and it has improved our skills. But I don't know on what programme it is based upon and what technology it is based on that I am not sure we are unaware and adopted to the AIR study. But I don't know how the AIR study is, we have become expert as per what feedback the device gives to us. If the pressure is work to get it corrected, to the correct blockage, whatever indicator is how on that basis we have improved our skill. But what indicator this device reflects, we are unaware of whether it gives correctly or not.
Interviewer: So that is your dislike?
Responder: That is one disadvantage, or dislike, dislike means we don't know about it, we only know that AIR study is brought here, we are asked to do practice on this device and accordingly we have improved our skill, whatever mistakes we have done they have been reflected by the device. But the thing is we are unaware, because when we were studying in our P.G. after our M.B.B.S we were not knowing about AIR study, on what system it works whether it is correct or not, whether we can believe it
Interviewer: I will clarify it for you, AIR is about an instrument, like any other medical instruments. They have tried to build this instrument by using some technology and artificial intelligence. Then it is now being demonstrated by using it on trial basis. After the demonstration they can go for next step like trying it on live babies, so it is an instrument in the developmental stage about this instrument, what it is now at this stage, what do you like instrument?
Responder: Then you mean in the present instrument.
Interviewer: Yes, what do you like in this instrument, one thing you told is the indicator which you liked. Then the technology you don't know about it, that is what you disliked. Are there any other likes and dislikes in it?
Responder: I don't feel any dislikes, but sometimes there is a problem in connection, because of network problem and technical issues. But there is no major problem, we have solved this problem by consulting our higher technician and have corrected it. Apart from that there is no dislike.
Interviewer: What else is there in it which you like?
Responder: The skill correction, that is what I liked
Interviewer: What about connectivity?

Responder: It is easy to handle, the connectivity. It is not so difficult to handle, If the staff are trained properly, they can handle it, it is not so complicated that they cannot handle, it is easy to handle
Interviewer: You said that there was some problem with connectivity….. was it network problem or …?
Responder: Probably it was network connectivity problem. Sometimes it was not syncing correctly. It could have been syncing problem. Sometimes our staff where not closing it, we discussed with the higher authority and came to know that if it was closed then it would start working after that again it is working well
Interviewer: Did you feel any challenge in using that device?
Responder: No no… there was no challenge
Interviewer: For you it might not be a challenge since you are paediatrician what about your staff?
Responder: For staff also, it was not a challenge. Connecting it then our code will come sinking our code, then after sinking to start the start the device. That is not difficult for us that is what I feel.
Interviewer: During the initial phases, did your nursing staff felt any challenges?
Responder: They did not feel anything like challenges. They are able to do. All of them have done it.
Interviewer: If I asked you to suggest some changes to be made in this device, so that we can improvise the device which can be used for the betterment of new-borns, what would your advice or suggest some changes to be made?
Responder: I feel that device is a little bit bigger in size and I feel it will benefit if it is like our AMBU bag with a chip installed in it and if a small indicator comes along with the chip, it would beneficial if possible the device is made a little smaller one it will be more beneficial
Interviewer: You mean something like inbuilt chip?
Responder: Along with the AMBU bag, if there is small thing like a chip that will be better
Interviewer: Any other suggestions to improvise this device?
Responder: ……. (Thinks, no response for 5 seconds)
Interviewer: Because in future we will be used to this kind of instruments
Responder: I don't feel anything else. But what I feel is it is a big device initially giving the position with the bag is an issue, that is what I feel it is better if it is of a smaller size
Interviewer: Do you think it is easy to learn?
Responder: Yes, it is easy to learn. All the staff nurse is easily trained and monitored for some days after the training, it is easy to learn
Interviewer: is it difficult to learn for anybody?
Responder: we had some issues with the mannequin sometimes there were leakages and we were not knowing about the masks we were unable to know whether the problem was with the mask, we did not feel any such difficulty
Interviewer: Did any of your staff nurses complain about difficulty in learning the use of device?
Responder: No no, no one has complained
Interviewer: By using the AIR device do the resuscitation skills improve or not? I mean over all in general
Responder: 100% they will improve. I feel so, for me and for all the staff, there is improvement and we have got confidence also
Interviewer: By the presence of this AIR device in our facility can it improvise the efforts that you are doing for resuscitation? And will it improvise the quality of the service given by the staff?

Responder: Yes, definitely. Initially most of our staff were unaware of it. They were not understanding much. But now they can handle the resuscitation even if they are alone, if the baby doesn't cry resuscitate the baby and make it stable and refer it the further care. They are now capable doing that
Interviewer: So, there is improvement in your facility
Responder: Yes, there is improvement now. Nobody is afraid to do resuscitation now. Earlier if the baby did not cry, they used to think "What to do? What to do? This happened that happened" and used to get scared and used to call us. Now if we get the call they say "No sir, we have resuscitated the baby, it is like this, and we are referring the baby". Now the calls come like this, that is when we were not in the institution. Earlier they used to call me before doing resuscitation saying "Sir the baby has not cried". But now, if there is no cry of the baby, they do resuscitation first they call me because they are confident now and they have learnt it. The call is coming after resuscitation means they have learnt resuscitation that is how I feel
Interviewer: And the quality of service given is also good?
Responder: Yes, it is good
Interviewer: We have implemented this device in some PHCs or CHCs but if we have to implement this use of this device in a larger scale like throughout India or in the entire Belgaum district, as an administrator and as a paediatrician and a doctor, what challenges do you think may come across and how to face them if they come across? How we can do that? Can it be implementable?
Responder: In my opinion, they are so many PHCs and CHCs there are less deliveries and complicated deliveries are not handled there therefore I don't think the AIR study should be implemented in such facilities. It is not so appropriate to implement in the such PHCs. Performance should be given to such facilities where there are more deliveries, and the training should be given to the staff working in such facilities. That will be more useful, I think. Second thing is some staff do it with interest and some do not. Therefore, if some kind of maintaining is done, then there is chance that all the staff will start doing it correctly
Interviewer: Why some staff do not do it?
Responder: Some staff sometimes go on leave and they can't do at that time and such kind of staff are always there in each and every facility and we need to tell them continuously that "See, you have not done the daily practise, and you have not done" like that only if we tell them then only, they do the practise.
Interviewer: You mean, there is lack of self-interest?
Responder: Yes, there is lack of self interest in them. And here in our facility some of the male staff nurses have not been posted into the delivery room. They work more outside the delivery room like OPD, IPD attending Medico Legal cases. They think that "we have not been posted inside delivery room". They might be having this feeling, the inner feeling. This type of lack interest is there.
Interviewer: Any other reason or challenge? As you said based on gender, male nurses are less likely to be posted in labour room, any other reason? Will there be any challenges to implement it?
Responder: I don't feel any challenges to implement it.
Interviewer: Is it implementable?
Responder: Monitoring is important. By doing monitoring strong, and the monitor coming every week and talking to them in group, and getting them involved, if it is done in this way, they will become aware. And also, if we do not refresh them, they do for some days and when they all score

more than 90%, they feel confident and at that point they stop doing practise. There are more chances to this situation to happen. Even though they are confident if we do some monitoring the study can be continued successfully throughout its complete duration.
Interviewer: You told that when they get confidence of 90%, they may stop practising. Do you think if that happens, their knowledge or skills comedown or get slow?
Responder: The skill is always updated when we continue to learn and practise. But if we stop practising there will be slackness in the skill. When they are in touch, with it by practising regularly there will be continuous improvement of the skill.
Interviewer: What should be done for that to address that issue? And to make them to do practise regularly?
Responder: For doctors were sent to the CHC to visit weekly, they used to come to our CHC and used to talk to the staff nurses whoever were on duty at that time as our staff nurses work on shifts like day duty and night duty. If that strategy of weekly visit by the monitoring doctors is applied, they may do it regularly, that is what I think.
Interviewer: Can we implement it as mandatory in all CHCs or where the deliveries occur?
Responder: Yes, it can be done, doing it mandatory is not bad.
Interviewer: To do it in the government setup, will there be any challenges?
Responder: There will not be any challenges in training the staff.
Interviewer: You talked about monitoring; do you think any challenge in that?
Responder: Yes, training them and monitoring them could be a challenge, because health sector is a big sector. And in that there are different variety of staff. To get them in group and training is a difficult job. The mentality of the staff in the private setup is different and they follow whatever orders are issued to them by their higher officers.
Interviewer: You talked about private sector. Is it easy to replacement its private sector or you may face some challenges?
Responder: It can be implemented in private sector facilities like KLE, as they are recognised institutions. I feel it can be done easily in such institutions. And I also feel that monitoring will be easy in private facilities.
Interviewer: As a Postgraduate, if it was there in your Post Graduation time, do you think it would have been better?
Responder: Yes, initially we would have learnt it a little faster. I feel so, whatever mistakes we used to do we would have come to know immediately.
Interviewer: By machine-based training, can you improvise your skills? Do all post graduate used to feel like that at that time?
Responder: They used to improvise our skills. Earlier, what mistake were committing, were not being reflected that we used to feel that whatever we were doing was the right way of doing it. All the time an expert person cannot come and see how we are doing. Usually there will be only one person for the resuscitation session. Such being the situation we feel that what we were doing was correct. If there is a reflector at that time, we will come to know what we were doing. By that we will wake up and get ourselves corrected improvise ourselves. Every time if there is a group wise discussion there will be some one expert in that discussion, at that time expert can tell anybody that he is doing mistake. If he is really doing mistake. But in peripheral setup and busy setup only one doctor is usually posted there, and if the reflectors are there at that time, I feel it is better.
Interviewer: So, according to you we should implement in government sector, private sector and tertiary care centres?
Responder: Yes.

Interviewer: Whether it is to be included in the curriculum?
Responder: It is better to be included in the curriculum, Resuscitation is the fundamental thing in health sector, without resuscitation we cannot do anything. In health sector, mother and child care is the most concentrated field. Deliveries are also occurring more there, and there is chance of late referral, there is chance of birth asphyxia, coming after home delivery. All such chances of happening are more. In the health sector it should be given priority and should be implemented.
Interviewer: Do you think that by implementing this AIR study device there will be improvement in overall clinical service?
Responder: The resuscitation care service will be improvised; 100% it will be improvised.
Interviewer: What benefit will be there?
Responder: The outcome will be good, we can avoid injuries by doing resuscitation within that golden minute, child disabilities will be less. Child mortality we can stop.
Interviewer: With this machine learning impact, what will be the overall country on the clinical care settings? How do you feel?
Responder: If all are trained the outcome will be better. When the quality of the resuscitation improves. Ultimately the outcome will be good. If the outcome is good then we can control the mortality rate. Mostly we can control disabilities in the children, that is our main goal. It is very difficult to manage disabled child for a family, those who are having disabled child in their family, the entire family will be the sufferer. We can prevent them from the happening.
Interviewer: What will be the impact on the country due to overall improvement in the clinical care? Tell me personally, what do you feel about, how many people are really efficient in doing resuscitation? As a paediatrician, because we know so many doctors in so many fields but you said resuscitation is a primary thing which should be known by every doctor.
Responder: All doctors and all nurses should learn it. We will not be knowing in what situation. Who will handle and which case how it comes? We are running health sector; we are doing deliveries daily. If they are conducting delivery, therefore all staff should be able to conduct resuscitation.
Interviewer: With this do you think that the overall country perspective will be changed?
Responder: There will be change, the mortality will be reduced, disability will be reduced. Investment by the government for the disabled child like, for their treatment, for their monthly pension will be reduced. If there is a disabled child in a family, the mother will suffer, the father will suffer, they have to take the child to the hospital and for that they have to take leave from their work with that there will be bad impact on their income, and whatever they earn the income, they have to spend for the child and the family's economic growth will be restricted. If there is no problem of this kind, they also can lead a normal family life like others. The working family members can go to their works. The family's income will be good. If the family's income becomes better, the country's income also become better.
Interviewer: We spoke about only resuscitation, but we did not look at it's future implications. So, as you are dealing with multiple children you know, how the disabled mean what. So, do you have any saying about the overall study or about the training or about the perception of people, any final saying? Do you like to say somethings?
Responder: Usually people are not knowing about what we are doing inside in the hospital. They believe that whatever we do is correct. But we, the people who are managing the things inside. If we learn it correctly and do it correctly, we can see better outcome of our area.
Interviewer: What do you think about this AIR study? How we should go ahead?

Responder: It is better, I think. If the skill is improved everybody will be confident. We can make use of the "Golden minute" we can avoid consequences of birth asphyxia which could have happened. It is better for us, better for the country, and better for the baby's family. We can reduce the mortality and disability. It is benefit for everyone in health sector people.
Interviewer: So as pediatrician, if such studies are brought do you want to get involved in those studies?
Responder: Yes, obviously.
Interviewer: Are you ready in coming days, to train the staff and are you ready to build capacity in them?
Responder: If such a situation comes across, I will be ready for it, there is no hesitation.
Interviewer: Do you think it is a good opportunity for you?
Responder: Yes, it is good opportunity.
Interviewer: So far you have told everything about resuscitation and your ideas, Thank you very much for participating in this interview

10610-20240130-Staff Nurse_Female

Interviewer: How many years back did you joined as staff nurse?
Respondent: It has been fourteen years since I joined the job as a staff nurse in the government service.
Interviewer: In those fourteen years, of how many years experience you have in the labour room?
Respondent: 6 to 7 years almost, on and off.
Interviewer: You used to be in the labour room?
Respondent: Yes, I used to be in the labour room and also I was entrusted the work of reporting and admission also. But I used to be in the labour room.
Interviewer: How many deliveries you have done approximately?
Respondent: My exposure is not much. But still I have done deliveries, about more than two hundred deliveries I have done.
Interviewer: At least you might have done assisting in conducting the deliveries?
Respondent: Yes, I have done. I have done more cases as an assistant.
Interviewer: Have you done assistance in LSCS also?
Respondent: Yes, I have done.
Interviewer: If the baby has difficulty in breathing after delivery. Is it in your opinion a complicated issue or not? Respondent it is complicated.
Interviewer: Why?
Respondent: Of course sir, if the baby does not cry within the golden minute, the baby may get some other diseases also. And within the golden minute if the baby does not have breathing, the effect of its mother carrying it for nine months will be a waste and the baby may not survive. It is a life threatening condition for the baby.
Interviewer: So you mean if the baby gets breathing difficulty it will be a problem for the baby.
Respondent: Of course.
Interviewer: What would be its effect on the parents?
Respondent: They will get hurt emotionally. The mother may get some psychic problems. Sometimes there are some precious pregnancies. If the mother is having many more dreams about the baby and when her dreams are shattered, she may go into some psychic problems. And it will be very difficult for her to come out of that psychic condition.
Interviewer: In your opinion what will happen to the baby if it does not breathe?
Respondent: If the baby does not breathe within one minute, that baby may die. Another thing, if the baby starts breathing late, the baby may have hypoxia and mental retardation, brain injury or other problems. In future also, the baby will have disability for lifelong. Because of that one moment the baby will suffer forever in its life. It should not happen. Baby should not suffer.
Interviewer: At that time after birth if the baby does not cry, we do resuscitation. What do you mean by resuscitation?
Respondent: When the baby does not breathe spontaneously, we have to give positive pressure and we have to push up the baby or we have to help the baby so that it can breathe on its own. This process is called resuscitation according to me
Interviewer: What do you do in that process?
Respondent: The baby will not have spontaneous respiration of its own. Due to many problems, because it could be a premature baby or it may not be having lung maturity or there could be amniotic fluid aspiration. Therefore we need to find out the reason for it, and we have to give positive pressure breathing. Ultimately the baby has to breed within a minute of birth. That is our

only aim because if the baby takes oxygen within a minute, it will have good physical and mental health.
Interviewer: What do you do in that resuscitation process?
Respondent: There is a device called AMBU bag. We take a cup as per the maturity of the baby, we give breathing to the baby with the help of AMBU bag.
Interviewer: To do that AMBU bag breathing are there any barriers or any challenges you face?
Respondent: Of course sir, we did face them. One thing is we need knowledge and we also need skill. Actually sometimes what happens is, the device will be there, everything will be there, but we may not be knowing the method how to operate it. Another thing is that even though we are doing it, we may not be doing it correctly or we may be doing it in a hurry or in tension and we may not be having the patience to care for the baby. Sometimes we need to push up. Like that we think. We may not be knowing whether we are observing the baby. Whether the device is working correctly or not, or we may not be knowing whatever is we are giving, it is reaching the baby or not.
Interviewer: Are there any difficulties in that facility for you?
Respondent: Sometimes the device may not be working, sometimes there may not be the device itself. Sometimes there may be device but there will not be skill staffto operate it. And sometimes there may be scarcity of staff like when there is only one staff nurse and there are three to four deliveries at a time. Are there may be more workload and the required staff is less.
Interviewer: You mean the number of deliveries will be more, but the number of staff less to conduct those deliveries?
Respondent: Yes sir.
Interviewer: Any other difficulties?
Respondent: Even though the AMBU bag is working because the nurse is in a tense mind, she may not be knowing whether the air is going to the baby or not. If she knows the reason for the air not reaching the baby, immediately she can correct it and manage. She should know immediately that "yes the baby is not breathing, there must be some problem" if she knows what is the reason she can correct it.
Interviewer: do you feel that these challenges and barriers have come down after using the AIR device?
Respondent: They have come down.
Interviewer: What challenges and barriers have come down?
Respondent: They have come down. Before this year study we used to give resuscitation. We have given it to live baby and on the Mannequins because we had undergone NSSK training (Navjaat Shishu Suraksha karykram). There we used to give breath to the baby. But sometimes the babies just use to move and sometime it does not use to move. After removing the AMBU bag the baby did not use to cry. Sometimes we are not feeling the pulsation. Here with this device we get the red light mark immediately if there is leakage or blockage or rhythm problem. If we know that the problem is occurring due to these three reasons immediately we can reposition, reapply and resuscitate the baby.
Interviewer: Have the skills improved?
Respondent: Yes, skills have improved and we can pick up where the problem is occurring within that golden minute. We cannot afford to waste even a second of time here. We can say like that.
Interviewer: What other barriers have been improved? Whether your knowledge has been improved?

Respondent: Yes, it has improved. By doing daily practice our hands are used to operate the device. Earlier what used to happen was, we used to get such problematic babies once a while like once in a month. Such being the situation, when we had to do resuscitation on the baby, we used to have a problem because,if we are doing it daily it will become a practice and habit. Forest it had become a daily routine. In this situation, if such a baby comes, immediately without thinking much we go for doing resuscitation. So there is no scope for wasting any time. In our facility it has improved.

Interviewer: In the AIR studies since your training till now what you have been doing? How was your training? How did you retain that training? How was it monitored?

Respondent: Yes sir, in the training, what was done was we were thought about where the blockage would occur in the device which we were not knowing we used to do it just blindly. Whatever knowledge and practice we were having, with that we used to do it. But we were unable to identify what percentage we were doing and where we were facing problems. We just used to do it. We were not knowing whether we were giving 100% or 97%. Sometimes we used to give air but we were not knowing where the leakage was occurring and where the blockage was occurring. Therefore we used to get 60-70%. Like this we used to get. But once when they have opened that device, we started to know immediately about "yes, we are doing mistake here only". Therefore we went on doing the daily practice. Now, all our staff, we are sure that we are giving 100% ventilation to the baby.

Interviewer: What else they told you in the air study? Where you give the resuscitation on the baby or?

Respondent: They have given us mannequins actually we were doing resuscitation on mannequins only we used to do it with the timing set on. Within 2 minutes we used to do it. We came on doing like this, sometimes we used to do mistakes especially at the time of applying. In my opinion we should have practice while doing it and we need to have concentration of mind also. Even if we lost concentration for a second, there used to be some mistake like leakage but afterwards as we started doing practice daily on the device we got experience on the live baby itself. We did save a few babies happily.

Interviewer: This is after the study was over.

Respondent: Yes sir.

Interviewer: Before the study, what supporting mechanism were there in your facility to resuscitate the newborn baby for you? Before they study what instruments etc. where there to resuscitate the baby?

Respondent: We had a suction machine to remove the suction at the time when I joined this job. At that time ambu bag etc. where there for resuscitation, but they were dustbin because of not using them as we had no knowledge and skill to use it. We used to get scared because we were not knowing anything. Even though we had studied it in our college, the knowledge was in our mind but we need practice, no? That we were not knowing. But once they have trained in government we came to know that this device is there and we can save the babies.

Interviewer: Were when you were trained? How frequently it used to be done?

Respondent: It was about 8 years back. After that they have not called for any training. There was training called NSSK.

Interviewer: what is that NSSK?

Respondent: It was Navjaat Shishu Suraksha Karykrama. In that resuscitation was one part. After that they have not called us for refresher training.

Interviewer: How many days of training it was?

Respondent: It was two days of training.
Interviewer: Were you trained about ambu bag in that training?
Respondent: Yes, we were taught.
Interviewer: You might have got some confidence by that training, isn't it?
Respondent: Yes, we got confidence. After that to tell you frankly, when we join the service in the year 2011 or 2012, you give us HBB training in KLE. That helped me a lot. That chart is still there in our place i.e. in our labour room. We are following that.
Interviewer: After the HBB training and NSSK training, have you received any instruments to you for use?
Respondent: Received any new instruments, whatever we had, we used to use those only. New ambu bags were given, with that only we were doing.
Interviewer: Giving you the knowledge about the resuscitation, was it given to you frequently by the government?
Respondent: Not frequently, it was only once given to us.
Interviewer: And that also 8 years back?
Respondent: Yes.
Interviewer: After that, did anything was done for the retention of that knowledge?
Respondent: Nothing (laughs).
Interviewer: What should have been done according to you?
Respondent: Daily practice should have been done. Whatever they taught us on the mannequins, after coming here if there was a habit of daily practice like it was routine.
Interviewer: But the government system did not do that?
Respondent: No.
Interviewer: What else should have been done? You told about they should have given mannequins, routine follow up should have been done?
Respondent: Refresher training should have been done.
Interviewer: What else?
Respondent: the staff nurse who have joined service recently do not have training.
Interviewer: What they are doing after delivery?
Respondent: You only train time. (Laughs).
Interviewer: Who is maintaining them? Whether they are doing it correctly or not? When you are there it is ok. But when you are not there or during the night?
Respondent: We have not let them to do independently on their own. But it will cause a problem for them, one or the other day they have to do it alone. Therefore only experienced staff are posted in our hospital. But in other hospitals it may become a problem.
Interviewer: Now I will come to our study. In this study, after getting training, for how many days you have done practice?
Respondent: Daily I used to do.
Interviewer: For how long you used to do?
Respondent: As I was busy in the casualty. I used to go once daily and used to do practice. In case if the percentage comes 70 or 80 I used to do repeat practice. So I used to come to know where I was getting problem. So I used to do it daily once. At least twice a week we used to do.
Interviewer: But it was supposed to be done daily?
Respondent: Only because of a busy schedule and sometimes because we used to be on leave. And sometimes we might have been so busy that we could not even go
there to do practice. And sometimes it could be negligence on the part of some staff nurse.

Interviewer: Why do they do negligence?
Respondent: (Laughs) It could be there thinking "what to do?" Or sometimes they might not be having interest (laughs).
Interviewer: Did they think that it was not their work?
Respondent: It could be that also. In our hospital almost all of us did it.
Interviewer: It has to be done daily because the skill get strengthened. That is our intention.
Respondent: Sometimes the Bluetooth was not connected at all.
Interviewer: Bluetooth of the device you mean?
Respondent: Yes there was a connectivity problem (Laughs). Sometimes, after doing the practice water had to be filled in the mannequins, even when we did the practice, it used to come as 30, sometimes we got fed up and went away.
Interviewer: According to you, you told that it should come as 30 and it should have come 100 the score, when it used to come as 30, did you use to do correctly at that time?
Respondent: Yes, I was doing correctly, later I came to know the reason for it. The mannequins did not have enough fluid. I came to know that some problem was there.
Interviewer: Were you not thought about the handling of the mannequins and its technical part?
Respondent: They had taught us.
Interviewer: So you mean, if there is a problem about the water in the mannequins such things used to happen?
Respondent: Yes sir.
Interviewer: So there was a problem of the mannequins and monitoring of the mannequins also is important?
Respondent: Yes sir.
Interviewer: For what other reason the staff were reluctant to do daily practice? One reason as you told is negligence second is overload of work what else? You told that because of negligence, Mannequin problem and overloading of work you got disheartened. What else?
Respondent: They did not have interest in working in the labour room and newborn baby care. They had interest in working in some other part of the hospital. It could be that reason. But there is no issue about saving the baby's life and baby's care. They may struggle hard.
Interviewer: What did you like in this AIR study device?
Respondent: The part which shows us where we are stuck. Where we are facing the problem. That part I like most. Sometimes the air used to get leaked and we were not knowing about it, the chest moment was not happening at that time. Butthere used to be leakage and the chest moment was also not happening. So that we detected it early. Immediately we came to know that a problem is happening here and it is displaying a red light. We used to see it and used to do it correctly. The problem can be corrected. Then the rhythm sir "breath two three" "breath two three". Sometimes somebody speaks, nothing used to be heard there used to be disturbance. But when we do it with concentration, it shows red light, no? That I liked most.
Interviewer: One thing you like is, it shows what mistake has happened. What else you liked in that device?
Respondent: Because of rhythm going right that we use to know that it is going right.
Interviewer: And you used to get it corrected?
Respondent: Yes, we use to get corrected.
Interviewer: Anything you like about it?
Respondent: That's all sir, what we wanted was, to know whether we are going wrong. That we like in the device.

Interviewer: Was there anything in the device which you disliked?
Respondent: Our problem is for each time we needed to fix the device.
Interviewer: Where you used to fix it?
Respondent: To the ambu bag. It had to be fixed to the ambu bag. Sometimes it had to be kept for charging that responsibility had to be taken by someone. It was ok. It is a staff duty. If they do not do it in real life. That time if they are not there it would be a problem. Some nurses do not know how to fix the device, because it is big and heavy. If its size is reduced a little it would be ok. I mean, how I am doing. It is my personal idea. Because that device is long and heavy, sometimes it gets fixed and chest movements are seen. It is ok. But if it is made a little smaller, it would be better to observe. But it is long. If the device is given to us in fixed condition it is still better. There will be no wastage of time. And if the equipment's are thrown here and there, by some workers who are not neat in their work, then we have to search for the instruments. By the time we search them and bring to us for the baby the baby would have be gone (Laughs). I mean the baby's breath would be gone. Because it is a golden minute. And sometimes, early delivery, premature delivery, if it is known and informed us early we can keep the device ready. Otherwise it will be a problem. Some hospitals need to be improved more. In our hospital sometimes the delivery tray and all are kept ready, because ofLAKSHYA and ENCOS (These are the accreditation bodies in India)arrival. If these programs have not come to some hospitals they have to…….. Therefore it is fixed it is better.
Interviewer: You mean that they have to be systematically kept?
Respondent: Yes.
Interviewer: For each delivery you want it to be kept systematically.
Respondent: Yes
Interviewer: Anything else?
Respondent: It has to be charged. Instead of that if it is doing like the device is now. Can it be done like that? Actually it is an electric device ok. If it is invented it is still better. I hope something more can be done so that it will be more helpful. Interview because I can think of what we can do about it because, each suggestion that comes from you, we need to learn from these things, so that we can improvise what else would happen?
Respondent: If the battery is down it does not show correct reading. So we are totally dependent on that device.
Interviewer: What is your experience with the water level in the mannequins?
Respondent: Sir, I am confident I am having the knowledge about where the leakage is happening. But some nurses who work with me, sometimes they will be going 100%percent resuscitation. But when I go there and observe, I come to know that I was surprised to see "when everything was done correctly, why it is happening like this?" at that time I was not knowing that the water was less in the mannequins. The chest moment was happening but still the percentage is showing less. That time I used to get frustrated. Even after doing all correct, why it is showing less percentage? I want to score 100%. I want to do correct, because I have a problem with my knowledge that may lead to problems for the new born baby. Therefore, I used to feel bad.
Interviewer: According to you, all the instruments should be correct while practicing?
Respondent: Yes
Interviewer: And also if there is something launch in the instrument or if it is not well managed, your confidence level will be less?
Respondent: Yes, it will come down.

Interviewer: So, mannequins should be improved, and while practicing all the mannequins, what all the prerequisites should be there, you should know all about those things?
Respondent: yes sir.
Interviewer: Like how much water should be in it. How much pressure should be? Something like that related to mannequins?
Respondent: Otherwise we feel like "whatever we learn in the training, it is of no use" to some people.
Interviewer: Did anybody feel like that?
Respondent: I only felt like that (laughs).
Interviewer: What about others?
Respondent: They also must feel the same but.
Interviewer: Casually why you use to speak each other what do they tell?
Respondent: They have also said the same thing. Then we came to know after two days I ask the sir "sir what it is? Why it is happening like this?" Afterwards mostly your study team had come and they saw this and corrected everything. The main problem was the Bluetooth. To see our percentage of practice we need the Bluetooth to work. That was also a problem.
Interviewer: To use this air device did you face any challenge?
Respondent :…….(No response for 4 seconds)
Interviewer: You have answered almost everything any other challenges? Did you address those challenges during the period from the beginning to till now? How the challenges were initially, how you improve them?
Respondent: Initially we had the problem of connecting the Bluetooth, fixing the device also was a problem for us, and sometimes when we want there to do the practice the device was not charged. But gradually as the days passed we all came to know what was the problem happening. Then gradually we got them improved. We have now fixed the time to practice that at 8 o'clock in the morning and one person was made in charge for that. And that person used to keep it ready for practice. Whenever we had free time we use to go there and do the practice. If nobody is made in charge for that it would have been a problem.
Interviewer: You mean one person has to take the responsibility?
Respondent: Yes.
Interviewer: When you tried to practice on it for the first time, was it coming 100% or not?
Respondent: No never, 80, 70 it used to come like this.
Interviewer: Over a period of time?
Respondent: It came sir. Our graph went on increasing, we kept on observing about our problems, how much ventilation we give, that is all there no sir? It came good sir. When I did recently it used to come as 100 I myself felt happy felt happy.
Interviewer: Show your initial challenges where foxing, Bluetooth, these were the challenges?
Respondent: Yes sir.
Interviewer: Did you have the challenge about how to use the mask etc..?
Respondent: We were just knowing about it. We used to follow chin and see and MN like this we used to follow those things. But these used to be leakage, because we were not identifying it. With this device we could identify it.
Interviewer: One is leakage. What about rhythm?
Respondent: Rhythm also we use to miss. As I told you we need to concentrate with in 1 minute, we have that golden minute. If in that period we make hurry or worry, miss the rhythm. That we have faced.

Interviewer: What else?
Respondent: These two problems we have faced.
Interviewer: You mean, there were challenges earlier?
Respondent: Yes, there were.
Interviewer: Over the period of time did they improve?
Respondent: Yes, they improved.
Interviewer: Now are you happy?
Respondent: Yes, I am 100% happy.
Interviewer: So, the device has worked?
Respondent: Yes, it has worked. With this device we can give resuscitation and within 1 minute and we can save the baby and we will be happy.
Interviewer: What changes you would like to make so that it becomes more useful? Some things you have told, can you repeat them one is that the device should come as fixed to the bag, second is? We don't want fixing it separately, second.
Respondent: We have to do charging it repeatedly so the charging point should be cleared.
Interviewer: What else?
Respondent: the charging (battery) should last longer for more duration.
Interviewer: what else?
Respondent: The Mask should be separate. We have to change the mask for premature baby. The device with the mask should be separate for premature babies. Only this much.
Interviewer: Just now you told me that the machine is a bit big?
Respondent: Yes sir, if a little smaller than one which is given it is better. This size is okay for us. But some nurses are old people. For them new skill is difficult to learn due to new technology coming they are……
Interviewer: How do you say that? My next question was this only?
Respondent: Now everything coming is digital, they will not be ready to accept it. They like to do whatever they are doing all these days. They ask themselves "we have done this all these days. Why should we do this new thing?"
Interviewer: So this is a perception of old people. You are young to do all these things. What they used to feel. What did they used to share with you?
Respondent: Their argument is "without this device we have saved many children" but sometimes ….. But we used to refer to more babies. But now we are managing all the babies here only.
Interviewer: So you are doing it in house. What other perception they are having? Did they think that "we have saved babies"? Did they have a question mark about this device?
Respondent: No sir, even though they have saved many babies, because of late breathing many children had to have MR (Mental retardation). Sometimes such children come here for the handicap camps, we used to ask the parents. I myself used to ask them personally, they said that "there was a problem at the time of delivery. The baby did not cry soon. They have told me like this. Old age nurses do accept this device somehow and sometimes they also feel that "if this device had come early in their time, it was good".
Interviewer: So overall tell me, whether it is easy or difficult to learn and operate this device?
Respondent: It is easy sir, according to me it is easy.
Interviewer: Is it easy for everybody or do you differentiate?
Respondent: No sir, it might be easy, but as I have told you what it is told that it should be practiced, then they take it seriously. One should tell them that it must be charged timely, it should

be fixed properly, and then only they do it. They may neglect sometimes. But this time it is easy to operate.
Interviewer: Out of hundred nurses working in the labour room how many are interested to learn it and who have the zeal to do it?
Respondent: 95% of nurses will do this.
Interviewer: 5% will not do it?
Respondent: That much.
Interviewer: According to it is easy to do?
Respondent: Yes sir.
Interviewer: Is it useful? According to you?
Respondent: Yes sir, 100%.
Interviewer: How it would be useful in the future?
Respondent: As I have told you, where we are working we have got the golden minute. Why should our confidence in saving the babies be reduced? It was reduced because we were not confident in that. We were lacking in confidence. If we are lacking in those three points, now it is exhibited in the device. If we achieve affection on those points, we can save the baby.
Interviewer: Do you think your resuscitation skills and the knowledge, do you feel have improved?
Respondent: Yes, they have improved.
Interviewer: How do you say that?
Respondent: We have done daily practice. There is one saying "if we see we will forget if we listen we will remember and if we do we will remember and get the knowledge". It means if you practice they give us training, we listened, just we did it but here we had daily touch with the device and you also came to know where we are doing mistakes and at what percentage we are in doing the practice, what percentage we are lacking, how much ventilation we give and how much ventilation we could not give. All the records we get instantly to update ourselves. This is how we improved.
Interviewer: Have your skills been improved?
Respondent: Our skills also has improved. Practice also has improved. Knowledge also has improved. Our clinical skill also has improved.
Interviewer: with this your practical application in the field has improved?
Respondent: Of course it has improved, our level of confidence has increased.
Interviewer: Knowledge?
Respondent: Knowledge has improved to 100%.**Interviewer:** After this device has been introduced in your facility is there improvement in your facility totally? Those who are practicing?
Respondent: In the labour room….. Yes. There is improvement. Earlier our referral rate was more due to asphyxia or some other problem. Now the referral rate has been reduced.
Interviewer: Do you feel so?
Respondent: Yes sir.
Interviewer: Do you believe that the AIR device has helped you to improve your quality of resuscitation?
Respondent: Yes sir.
Interviewer: Is it possible to expand the training of the device and its implementation in a large scale throughout the country? Can it be done or not?
Respondent: It can be done.

Interviewer: Will there be any problems or challenges while implementing this AIR device study and training throughout the country in a large scale?
Respondent: If government is accepting this device to give, we do not have any problem to learn it. But it has to go to the sub-centers also. It has to reach till the sub-centers, not only to the government hospitals. Because there, sometimes have deliveries occur, but now delivery occurs, that baby also we can save. We can reduce the neonatal death rate.
Interviewer: To conduct the training throughout the country, what will be the facilitating factors one is government as you told what other facilitators will be there?
Respondent: We can reduce the newborn death rate. We can improve the skill of all the staff, we can improve the knowledge we can give quality care.
Interviewer: To do this what difficulties we may have?
Respondent: Economical problems (laughs).
Interviewer: How to overcome economic challenges?
Respondent: That they only have to think. Not only in the government hospital, in the private hospitals also the nurses should be trained. In my opinion the 108 ambulance staff also should be trained. Because many times the delivery occurs in the ambulance itself and the baby might be having asphyxia while bringing the mother and the baby to the hospital. That also we can reduce i.e. complications occur in the ambulance. We can reduce them also. And all the ANMs also should be trained, because they are the base of the healthcare system. If they also have theknowledge and this device and if a delivery occurs in the home they can attend the baby.
Interviewer: What else can be done? To train the staff countrywide? What are the challenges you see?
Respondent: Trainer should be more…. we need trainings. Not only training the staff, they should see that all the staff are Trained leaving nobody untrained. Especially the new-ones should be included in the training. Not only the training they should give refresher training also. Mannequins should be given to each and every institute. Another thing is, wherever there are nursing colleges, if we show them by doing this practice, they will have knowledge about this there only, about resuscitation and all. Mannequins are there also, but I have not seen such things even though I have studied there. But if we show them this practice practically, they will get more confident like "oh, the baby has this problem, we can help it and do it". We can sensitize them there only.
Interviewer: You mean we need more training?
Respondent: Yes sir.
Interviewer: And you also said about frequent monitoring?
Respondent: Yes.
Interviewer: Are there any other challenges are various to do it in the entire country? Economically it is there, apart from that?
Respondent: The staff should have interest about it.
Interviewer: How can we bring interest in them?
Respondent: They should be having that in their mind to give quality care. They should have interest to save the baby. Sometimes it happens that, when they are working on contract basis they think "why we should go there?" It could be that also.
Interviewer: How to activate them?
Respondent: Incentive should be given to them. If they say one baby some incentive should be given to them, sometimes like that.
Interviewer: If incentives are given to them?
Respondent: They get motivated.

Interviewer: Should it be used on the live baby as a clinical care?
Respondent: Yes, it can be done. It should be done.
Interviewer: Why?**Respondent:** Of course by doing it on the live baby only we can come to know its result. We will be more happy and the mannequin is ok, we can have confidence. But when we do it on live baby, we got more confidence i.e. 100% confidence and I can share my experience and I can tell them to do.
Interviewer: Will the clinical skills be improved by it?
Respondent: Yes, they will improve. We were knowing that due to three main reasons we had problems, but we were not knowing where and when. We used to use AMBU bag but we were not knowing where and what problem were happening and why the baby was not breathing. But to refer immediately. That used to be the solution. But now, with this kill we say "yes, it is happening here only", when we understand that and improve it, we can make the baby cry with in 1 minute of golden time.
Interviewer: So do you believe that there will be improvement with this?
Respondent: According to me 100%.
Interviewer: Do any barriers come in the way? In implementing this instrument so that it would be beneficial to the babies?
Respondent: Everybody has to accept it. Whatever we do we need to do it correctly. That knowledge one should have. If they do it, it would be correctly done. And what should be done first, should be done first immediately. If it is done after the 1 minute it will be a loss (Laughs).
Interviewer: Will there be any barriers? In the clinical care?
Respondent: I told about some barriers, the instruments should be kept ready and it should work. If it does not work if it is having some problem like it is having no charge. In such situations there could be problems or barriers. If everything is ready and if the nurse is knowledgeable, and perfect she will get 100%.
Interviewer: Will there be any other barriers?
Respondent :…….(Thinks for 8 seconds). I don't feel like that.
Interviewer: What is your overall perception, you having a master's degree in nursing? About this study, resuscitation and our community, what do you feel?
Respondent: In my opinion it is one of the good devices. Actually before we were not knowing what we were doing where we were knowing everything like how to do it, how to give reposition and all. But we were not knowing about what problems occurs where immediately. She used to pick up with this device, even if she is a new comer, she can immediately pick up thinking "yes here the problem is occurring" that is one thing. We can make the baby breathe with in 1 minute and we can make the baby to survive. We can make the baby breath and send it safely to the referral unit if this device is with us. So in my opinion by giving this training to all, we can reduce the newborn death rate.
Interviewer: Anything else you would like to say about this device training and use?
Respondent: The same thing sir, the staff of 108 ambulance also should be trained, ANMs to be trained, sub center wise and if possible this device should be given to all health facilities.
Interviewer: Do you feel that this AIR study should be done in a large study?
Respondent: Yes it should be done, even in private hospitals because we go to the private hospitals and the staff nurse should be knowing about this device and should be skilled to use it. Even though they are the tenth standard passed, they are also called nurses. I feel sad that even though we have studied for 5 years, 7 years we are compared to them. We have seen so many deliveries being conducted by them but they do not know anything about this. They are just like trained daayis

(Birth attendant), we should give this knowledge to them. Let them work. They are working. It is ok. By imparting this skill to them, they also can improve in their work in all the private hospitals.
Interviewer: So you feel this is very important?
Respondent: Yes sir.
Interviewer: In your opinion, training of this instrument should be scaled up?
Respondent: Yes sir, because these days we are facing the problem of infertility, when such women get pregnant it becomes very important to save that precious baby. It is also a very challenging task. Show the parents will be happy. The mother will be happy.
Interviewer: Apart from this would you like to say anything?
Respondent: My opinion is that you should give us new studies like this to us frequently. Because even though there are trainings, there are no refresher training most of the times. But since the KLE is doing new studies in our government setups, the poor people will be benefited, because the people coming to government hospitals are mostly poor people. They will get benefit and we will get more knowledge and skill with our knowledge going on updating. Sometimes what happens is, whatever we have learnt in our college that only we will be remaining in our mind. And we will not be knowing new knowledge and skills. Therefore I feel that it is good to have such trainings every year.
Interviewer: Anything else?
Respondent: Then, it is okay sir.
Interviewer: Thank you for talking to me so far about this study.

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Interviewer explained the study objectives to the participant. After taking the consent, interview started.
Interviewer: Since how many years you are working as nursing staff in the PHC?
Participant: Since 15 years
Interviewer: Ok, you are working in the same PHC since you joined.
Participant: Yes
Interviewer: How many deliveries have you conducted?
Participant: Have not counted sir, but have done many.
Interviewer: You can tell approximate number. It can be 500, or 1000 or 2000.
Participant: Monthly on an average have done 15 deliveries.
Interviewer: How many you have done in past 15 years?
Participant: Around 2000 or more
Interviewer: Ok, there can be barriers in conducting deliveries. Did you have knowledge about resuscitation initially?
Participant: Yes sir, but didn't know how effective it was. We used to do with bag and mask. Used to see cord pulsation and recovery. But now with the use of device we will come to know whether ventilation is proper or no by looking at symbols.
Interviewer: Ok, how was your knowledge and skill before using AIR device?
Participant: We used to see chest movement's and cord pulsation to assets recovery.
Interviewer: Did you face any barriers or challenges in the past 15 years?
Participant: Now with the device we are 100% sure of ventilation. But before that we used to use bag and mask for 2 to 3 minutes. If no recovery, then we used to call 108 ambulance and refer the baby with bag and mask.
Interviewer: Ok, now you have AIR device. Is this helping you to overcome the challenges you had in the past?
Participant: Yes I feel, but not practiced on live babies. Now we are practicing on mannequin, see the readings and feel it is effective.
Interviewer: How do you come to know it is effective?
Participant: We look at chest raise
Interviewer: Now, you are using AIR device. How do you come to know that ventilation is given properly or no?
Participant: Indicators are there on the device. Green means effective ventilation, red means we have to change the position.
Interviewer: Ok, by looking at the colours of light you will come to know the effectiveness of ventilation. Are there resuscitation facilities in your PHC?
Participant: We manage at our level. If pediatrician is there it will be good.
Interviewer: Ok, what about materials for resuscitation?
Participant: We have warmer, bag and mask and separate room for resuscitation.
Interviewer: Ok, you have all the facilities for resuscitation.
Participant: Yes
Interviewer: Did you undergo any training for resuscitation?
Participant: Initially 8 years back there was HBB study. We used to do bag and mask ventilation. But device was not provided. We practiced with bag and mask and used later.
Interviewer: Where was the HBB training given?

Participant: At XYZ place. Training was for two days.
Interviewer: What about trainings at your work place?
Participant: No sir
Interviewer: Ok, but you practiced based on your knowledge. Were there any monitoring activities for your resuscitation practices?
Participant: No sir. But we used to be ready for resuscitation if there was delay in second stage of delivery. Because the baby may have problem of asphyxia. If baby didn't cry we used to shift to warmer and do resuscitation.
Interviewer: Ok, were there any training or monitoring for resuscitation procedures?
Participant: No
Interviewer: Were you trained to use AIR device?
Participant: Yes, training was given once.
Interviewer: What was there in training?
Participant: Training was about resuscitation. How we should check equipment's and keep ready. How to use the equipment's on the baby, how to hold the device. How many squeezes of Ambu bag to be given for two minutes?
Interviewer: Ok, please tell us what you know about AIR device?
Participant: With AIR device we will come to know how effective is the ventilation. We will come to know leakage and blockage.
Interviewer: Ok, what will be there in device and how to use it?
Participant: Initially after checking the equipment's AIR device is attached to Ambu bag. Mask is attached to the baby covering mouth and nose. Ambu bag should be sqeezed approximately to make ventilation effective. Based on indicators on the device we will come to know whether airway is clear or no.
Interviewer: Ok, have to connect AIR device to the Ambu bag, after positioning the baby mask should cover chin and nose tightly.
Participant: Yes, and we will come to know its effect by looking at raise of chest.
Interviewer: Ok, what did you like in AIR device?
Participant: We will be confident based on the effectiveness of ventilation. Four indicators are there to know correctness.
Interviewer: Ok, indicators are important according to you. What changes can be done in AIR device?
Participant: It is useful device.
Interviewer: Ok, you liked the device. What did you like in the device?
Participant: We will come to know how effectively ventilation can be given by looking at the indicators. If mistakes are there indicators will be given and we can correct the mistakes.
Interviewer: Ok, you liked the device because indicators help in proper ventilation and hence resuscitation can be successful. Is there anything in the device that you didn't like?
Participant: Nothing that I didn't like. But initially used to feel bad while connecting to Bluetooth. That was for one or two as there was no practice.
Interviewer: Ok, anything else you didn't like?
Participant: No sir.
Interviewer: You liked the device. What were the challenges you faced while using AIR device?
Participant: Before the AIR device, we didn't have idea of usage, but we used to do resuscitation didn't know how much effective it was. But now with AIR device we are doing correctly.
Interviewer: Ok, but what challenges you had using AIR device?

Participant: Initially connecting to the Bluetooth was challenging. Later we didn't had any problems doing on mannequin. Should see what challenges we may have with device on the live babies.
Interviewer: Ok connecting to Bluetooth was problematic initially. Later you didn't face any challenges.
Participant: Yes sir, we had experience from HBB study.
Interviewer: What changes you feel to be done on AIR device?
Participant: The device is heavy and long. If it is made short, then can use easily. Sometime the device will turn.
Interviewer: Ok, is it heavy?
Participant: Not much
Interviewer: Ok, only if size is shortened it will be good. How useful is AIR device?
Participant: To give effective ventilation. The symbols indicate the correctness.
Interviewer: Is it easy to learn the usage of AIR device?
Participant: It is easy, not difficult to use
Interviewer: Is it easier to use the device by other staff across the country?
Participant: It is easier since we are practicing use of Ambu bag. Holding the AIR device is very important.
Interviewer: Does the AIR device improve resuscitation skills?
Participant: Yes it will improve
Interviewer: How does it improve?
Participant: Improvements of successful resuscitation indicate improved skills.
Interviewer: Which skills will be improved?
Participant: In short time only we will come to know the correctness of ventilation and the resuscitation will be successful.
Interviewer: What improvements are there with regards to skills and knowledge?
Participant: Baby improvement can be there in short time. We can correct based on the indicators and hence it will improve our skills.
Interviewer: Ok, without device we may not come to know the correctness. With device based on indicator we can correct ourselves.
Interviewer: What are the opinions of other health staff about AIR device?
Participant: My other staff had problem of AIR leakage initially. Now they are doing correctly. Since I was trained in HBB study I didn't have any problem. The other staff has joined recently.
Interviewer: Does AIR device will improve the quality resuscitation?
Participant: Yes sir, if we use it daily we can do successful resuscitation. Also if it is made available in other health centres can save babies.
Interviewer: How helpful was this AIR device in your health centre?
Participant: We got the idea of resuscitation in case of emergencies. Now we are more confident about successful resuscitation.
Interviewer: How you done resuscitation after getting trained with AIR device?
Participant: No sir, but we are 100% confident that we can do resuscitation.
Interviewer: What barriers or challenges we may face if we implement use of AIR device in the entire country?
Participant: Based on their knowledge difficulties may be there. Holding the bag, practicing on mannequin may be challenging for others. For nursing staff it may not be problematic as we are practicing bag and mask ventilation.

Interviewer: What are your opinion about implementation of AIR device in the entire country? What challenges we may have to train staff?
Participant: Challenges may be with use of device like leakages, holding the baby, sealing the baby, neck holding. We will come to know if we practice on babies.
Interviewer: Ok, what are other challenges?
Participant: Nothing sir, device is useful.
Interviewer: Will the device useful for clinical care?
Participant: Yes, by using on babies we will come to know the challenges.
Interviewer: What challenges and barriers we may have when used in clinical care?
Participant: The area or place of resuscitation should be proper, baby should be positioned properly. The devices, bag and mask and equipment's should be kept ready.
Interviewer: Are there any suggestions about AIR device? Or any comments?
Participant: It is useful 100% we will come to know mistakes and can be corrected immediately. Initially only had Bluetooth connectivity issues. Size of device is bit long. It will be better if it is shortened.
Interviewer: Ok, anything else you want to tell?
Participant: It is very useful. If you let us to use it on live babies we will start using it. We will come to know the challenges while using on live babies. Nothing else to say sir.
Interviewer: Thank you very much for your participation in the interview.

10501-20240129-MEDICAL OFFICER

Interviewer: For how many years you are working in this primary health center?
Participant: It has been nine years I have been working in this PHC.
Interviewer: Before that.
Participant: Before this I was working in Gokak (Place name) taluka. Totally I am working for the last 13 years.
Interviewer: In those 13 years of your experience, have you done any deliveries?
Participant: Not more, a few.
Interviewer: You might have done monitoring of deliveries?
Participant: Yes, I have done monitoring.
Interviewer: While monitoring have you seen birth asphyxia cases?
Participant: Yes. I have seen and I have attended.
Interviewer: Approximately how many such cases you have attended?
Participant: About 7-8 cases
Interviewer: Did you have resuscitation practice while attending those cases?
Participant: In our department a training was given to us but it was not like this AIR device practice daily.
Interviewer: Was there any scope of resuscitation being done on the newborn babies? In your PHC?
Participant: There was provision for resuscitation but such device like that of AIR study was not there.
Interviewer: Were there any other devices?
Participant: There were Ambu bags. There were suction apparatus.
Interviewer: Were there warmers?
Participant: We have warmers in our PHC.
Interviewer: Were there any hurdles to perform resuscitation?
Participant: …….. (thinks for 5 seconds) …. There used to be...
Interviewer: What were they?Participant: When there was change of the staff, the new staff did not have the adequate training. When such untrained staff come to work in the PHC, at that time it becomes a problem.
Interviewer: Untrained staff, what else?
Participant: The golden minute is of 60 seconds only we need to prepare everything to do within that time.
Interviewer: Therefore, you feel that the new staff are not capable to do that.
Participant: Yes
Interviewer: Any other reason?
Participant: …… (no reply for 5 seconds) ...
Interviewer: How was the knowledge of the new staff?
Participant: They might have gone through the training, but they were not having practice.
Interviewer: Do you feel that you had the skills to do the resuscitation?
Participant: There was no such advanced skill.
Interviewer: Usually how you used to do it?
Participant: If the baby did not cry after the delivery, we used to take the baby to the warmer and used to start the process whichever was there at that time.
Interviewer: What you used to do? The process?

Participant: First we used to do the back rubbing and then tingling. If that did not succeed, we used to do mouth suctioning. After that we used to start Ambu bag. For the first 15-30 second we try with these methods. If that did not succeed we used to restart the process. We wait for one minute by doing these procedures and if it did not succeed we used to start oxygen tool. If that also did not succeed we used to declare that there was no response.
Interviewer: Did you have many cases like this usually?
Participant: Not many. Hardly one or two cases in a year.
Interviewer: While doing those procedures, what did you feel? Did you feel the skill and knowledge were efficient?
Participant: I think it was 50:50.
Interviewer: What about the other staff?
Participant: It is about all.Interviewer: While doing resuscitation were you used to be confident in doing it?
Participant: We were not confident.
Interviewer: After the AIR device came into part of the study did the earlier
hurdles and difficulties have been overcome?
Participant: Yes, it has happened. After this new device being used what procedure we are performing, we can see it live, whether we are going right or wrong. In that device we can monitor that. Whether the oxygen is going right or not, whether the pressure is correct or not, whether it is high pressure or low pressure, we can see ourselves.
Interviewer: What else is there in the device?
Participant: …….. (no response for 6 seconds) ...
Interviewer: One you said that one can know whether the pressure is low or high and whether oxygen is going or not. What else you can know? How you come to know these?
Participant: It shows the reading in the mobile app. When it is connected. When we see it we can come to know it.
Interviewer: What all do you know?
Participant: We have been given unique ID. After entering our ID, we can know all the details about our practice done on the device.
Interviewer: What all do you know from that?
Participant: We would know where we failed, in the steps of doing the procedure, where we have failed and at what step we have failed.
Interviewer: So you will come to know immediately after you log in.
Participant: Yes.
Interviewer: After using this AIR device, do you feel that you have overcome the problems and the challenges which were there while using the Ambu bag?
Participant: Yes sir, compared to the old device, it is better.
Interviewer: Are there all the instruments of resuscitation in your facility?
Participant: Yes. There are.
Interviewer: What facilities are there in your PHC to do resuscitation including the man power?
Participant: There is a separate pediatric warm room in our PHC. There is a
warmer in it. There is a resuscitation on kit. It is ready.
Interviewer: What are there in the kit?
Participant: Ambu bag, penguin suction apparatus.
Interviewer: What else is there in it?
Participant: Nothing else.

Interviewer: You said about AIR device, wouldyou like to say about it? What is it? When did you start using it?
Participant: Six month back we were called for training about the AIR device.
Interviewer: What was in the training?
Participant: It was about how to operate it in resuscitation and how to save the newborn. We were all including doctors and staff nurses were trained and we were told to do daily practice.
Interviewer: What practice you were told to do and how to do the practice?
Participant: They had given. This mannequin
Interviewer: When you were told to do practice?
Participant: Daily once.
Interviewer: What you used to know while practicing?
Participant: While practicing we used to know where we were failing. If we do the practice correctly, it shows green light, all the readings are shown as correct and green light displays, otherwise red light displays.
Interviewer: What did you like in that device?
Participant: ……. (no response for 5 seconds) ...
Interviewer: Now you have the device and you are using it. Anything did you like in that device?
Participant: ……. (no response for 5 seconds). Yes.
Interviewer: What and how did you like it? What did you like in the device?
Participant: When compared to the earlier resuscitation device by birth attendants this one is better.
Interviewer: In what way it is better?
Participant: Now we are using this device, and we come to know correctly, when we put the mask and if there is leakage is shows that there is leakage andthe mask is not fitted correctly. Earlier when we were doing resuscitation, we were not able to know whether there was leakage or not. In a hurry we used to go ahead with the procedure.
Interviewer: Now you come to know it?
Participant: If there is leakage while we are doing it. We come to know it and we restart the procedure.
Interviewer: So, that one you liked it. What else did you like?
Participant: It has advanced technology, but we have to use it. It is ok if it is done all over India.
Interviewer: Now you said that the AIR device displays green and red lights, with that you know that where you are doing mistake and it helps you to improve upon your mistakes.
Participant: Yes.
Interviewer: Is there anything you liked in that?
Participant: …. (no response for 10 seconds) …
Interviewer: Now you told about your liking. Do you practice with it daily?
Participant: I do on alternate day. The staff nurses do it daily.
Interviewer: While you were practicing on that machine, was there anything which you disliked?
Participant: There was nothing to be disliked about it.
Interviewer: Did you feel like something was not correct in that machine?
Participant: Nothing.
Interviewer: Do you feel that any changes have to be done in that machine?
Participant: No sir.
Interviewer: Do you feel some modification should be done in that machine?
Participant: No.

Interviewer: You and your staff nurses received the training about AIR study device, was there any difficulty from the beginning till now, to learn about it, to understand it or to practice it, to you or to any of the nursing staff? Was there any difficulty to anybody?
Participant: You are asking about the earlier?
Interviewer: All, earlier and the present one, about the training including the AIR training.
Participant: There was no follow-up monitoring or regular monitoring about the training given to us by our department. But now with this study, whatever we do the data is generated and transmitted online. It is known whether we have done it or not. And here, there was regular monitoring done by the supervisory staff who used to come once in every week. They used to see whether we have done or not and were collecting all the data about it.
Interviewer: What else they were doing?
Participant: …… (no response for 12 seconds) …
Interviewer: Even the experience of others, was there any difficulty for you during the training? In what way the training was given? Was it easy or tough? Or irritating? How was it. How did you feel about it?
Participant: No, no,no.There was nothing irritating. We appreciated that training. We got good knowledge. It was a refreshing for us. We had done so interestingly in our education as well as in our service.
Interviewer: Did you feel any challenge while using this device?
Participant: Nothing like that.
Interviewer: Did any of your staff nurses told you that something was challenging about it?
Participant: No, nothing like that.
Interviewer: So, everything was easy. Before using this device were you resuscitating 100% efficiently or what?
Participant: Before using this device, we had the training in the skill lab, that training was given to us. That is all.
Interviewer: Is the training to learn using this AIR device is easy or difficult?
Participant: It is normal.
Interviewer: You mean nothing difficult?
Participant: No difficulty.
Interviewer: So, you feel there will be no problem.
Participant: No problem.
Interviewer: As you and your staff nurses go on using the device, do you feel that the skill, capacity and the knowledge have improved?
Participant: Yes.
Interviewer: How, how do you feel?
Participant: Compared to earlier, now they have more confidence.
Interviewer: Can you give an example to that effect?
Participant: There is only one staff nurse in our PHC. There is shortage of staff in our PHC. Usually there will be no attenders. In such situation there will be no full confidence to handle they were afraid to handle alone. Bot now they have full confidence and they can handle it. She is doing daily practice
Interviewer: With that do you feel that it has been easy to do it?
Participant: Yes sir.
Interviewer: Your sisters said nothing that it was difficult to learn?
Participant: ….. (no response for 8 seconds) ...

Interviewer: Since the day you are using this device in your hospital, is there any improvement in the resuscitation work during the delivery in your hospital? In your staff nurse of your facility?
Participant: I couldn't understand the question.
Interviewer: Now you have started using the AIR study device. After some days of using the device, is there any quality improvement in your nurses in resuscitation? Do you feel so?
Participant: Yes.
Interviewer: How? In what way? Have they done resuscitation of any live baby?
Participant: At present they have not got any opportunity to use the device to resuscitate. Such incidents have not happened.
Interviewer: If such an incident happens, do you believe that the staff nurse can do the resuscitation with the AIR device?
Participant: Yes.
Interviewer: Are you confident?
Participant: Yes, I am confident.
Interviewer: What is your opinion about if we decide to implement this training with the AIR device to the entire country?
Participant: It is good. It is good if the training is given to all.
Interviewer: Will there be any barrier or difficulty in giving that training?
Participant: It is not very hard to reach. We are doing it in a manner according to guidelines.
Interviewer: But will there by any practical issues?
Participant: It cannot be done at a time to all the staff. A schedule for all the staff at a time cannot be done. We need to adjust and change the dates of training. Or it can be done as TOT. Giving training to one and in turn that one person go and train the other staff in a particular facility. One medical officer and one staff nurse can be trained and they in turn can train the other staff.
Interviewer: So according to you there will not be any difficulty.
Participant: No difficulty.
Interviewer: Will there be some other kind of difficulty like staff patterning or monitoring?
Participant: No.
Interviewer: Can the medical officer and the trained staff nurse can monitor the training?
Participant: Yes.
Interviewer: You have done the AIR device on the mannequin. Can the device be done on the actual baby and can the clinical care be improved or not?
Participant: Can be done.
Interviewer: You are doing this on the mannequin only all these years?
Participant: Yes
Interviewer: Can you do it on the live baby?
Participant: Yes, it can be done.
Interviewer: Will there be any problem?
Participant: There is nothing as problem.
Interviewer: So there is no problem of any kind.
Participant: Yes.
Interviewer: Because we are not getting opportunity to do it on the live baby, we are doing it on the mannequin. Only practice we are doing.
Interviewer: If you had the opportunity. Would you have done?

Participant: Yes. We would have done.
Interviewer: Can it be used everywhere in clinical care? Will there be any problem? can be done.
Participant: Previously we used to do it in our department. In the same way it
Interviewer: You have taken resuscitation training earlier. Would you like to tell me about it briefly? How was it. How many times it was given? Whom it was given?
Participant: They gave the training to medical officer and the staff nurses. When we had joined for the service for the first time, it was five days training. After about 3 years a refresher training is given which used to be 2-3 days.
Interviewer: How were those trainings?
Participant: The training used to be given by using mannequin the training used to be given practically and with the help of power point presentation, and using the lecture classes and TOT.
Interviewer: For how many days that training used to last?
Participant: One day or two days. Even refresh training also used to be the same
Interviewer: Did they use to monitoring of the training?
Participant: There was no monitoring of the training.
Interviewer: So, the frequency of the training used to be once in 2 or 3 years?
Participant: Yes
Interviewer: How many times you have undergone the training?
Participant: I have got that training twice.
Interviewer: How many times your staff nurses have undergone the training?
Participant: Their training also the same. Twice or three times.
Interviewer: As a medical officer, how did you feel about their ability to conduct the resuscitation after getting the training for about 2-3 times?
Participant: I told you the same. They were not having confidence in those days. They were not knowing whether they were doing the resuscitation correctly or not. And they were also not doing the daily practice on the device. After coming here and getting trained they are doing daily practice.
Interviewer: Once the training was over.…
Participant: They were not doing the practice but here in this study the daily practice is compulsory. Therefore they are having confidence about resuscitation. By doing daily practice and periodic monitoring they have got more confidence.
Interviewer: So you mean. Because of that they have confidence built up now.
Participant: Yes.
Interviewer: You told that this device can be used in clinical care
Participant: Yes.
Interviewer: You were telling something.
Participant: The same sir. Now they have got confidence. Earlier they were not knowing whatever they were doing, it was right or wrong. Whether the air was entering correctly or not. They were not confident about those things. Now, after this training, they have got confidence.
Interviewer: Would you like to say anything more about the AIR study over all? Any suggestions from you to improve it? Or device improvement.
Participant: The device is good, as of now it is good. It is better to implement all over India. I will be useful more in rural areas in the cities, there are pediatricians and other facilities available. In the rural and hard to reach areas and at other high risk areas, if this training is given to the staff in those areas it will be useful. At least they will refer the babies after doing this resuscitation

initially. If the baby is made to cry at least, it can be referred and further care can be taken at the higher care hospitals. And the follow-up care also can be taken.
Interviewer: According to you it would be better useful in the rural areas. We would take more care in such areas.
Participant: Yes. It is better.
Interviewer: Will there be improvement by doing so?
Participant: Yes. It will be improved.
Interviewer: What would be the advantages?
Participant: Infant mortality will come down
Interviewer: Anything else?
Participant: Death rate will come down. More than us, it is very important for the parents of the delivered woman.
Interviewer: Therefore we should try to save the baby.
Participant: Yes. It is better to train all the staff.
Interviewer: Anything more you would like to say about this AIR device? Any comments on this?
Participant: Nothing more.
Interviewer: Thank you for sharing your views about the AIR study.

10304-20240205_STAFF NURSE

Interviewer explained about the study and its objectives. After taking the consent the interview was started.
Interviewer: Since how many years you are working as a nursing staff?
Participant: Since 25 years.
Interviewer: Ok, were your duties more in labour rooms?
Participant: Yes sir, since I shifted to xyz place my duties are in labour room. Before that I have worked in dialysis units.
Interviewer: Ok, you have conducted labour.
Participant: Yes sir.
Interviewer: Have you come across birth asphyxia cases during labour?
Participant: Yes sir
Interviewer: Ok, can you tell in detail what will happen to the baby, and what are the facilities available at your hospital, what you can do and what are the challenges?
Participant: Sometimes during delivery, the baby won't cry after delivery and become lethargic. HBB study helped us lot for resuscitation. Making the baby warm, shifting to incubator, incubation of baby with bag and mask. We keep ready all the equipment's for resuscitation, including the mask size, warming the warmer.
Interviewer: What were the challenges for resuscitation in your government setup?
Participant: Initially we didn't know anything. We were given training in skill labs but were not effective. But training given by XYZ institution is very good. Along with improving knowledge our practical skills got improved. With AIR device it has helped us lot. Earlier since we didn't have knowledge we couldn't handle the babies. We used to call doctors in case of asphyxia, we were not skilled enough for resuscitation.
Interviewer: Ok, you were afraid of such situations earlier?
Participant: Yes sir.
Interviewer: Were there delays of doctors for resuscitation?
Participant: Yes, only on duty or those were near could come soon. Asphyxia cases were more.
Interviewer: What was your level of confidence?
Participant: I was not confident initially. Now I am confident of handling the situation. After NSSK training got some confidence.
Interviewer: When was NSSK training given?
Participant: Around ten years back.
Interviewer: Ok, after training, were there monitoring activities done to see your performances?
Participant: No sir, but we used to practice as per the training.
Interviewer: Ok, you used to practice based on NSSK training. Was there availability of required instruments at health center?
Participant: Yes sir, we had bag and mask. But we were not sure how effective was our resuscitation and we were not confident about it. We used to call medical officers in case of asphyxia.
Interviewer: What was taught in NSSK training? How many days was the training?
Participant: Same thing was taught. Training was for one week. But we were not confident about resuscitation effectiveness.
Interviewer: What was there in AIR device and what you have done with it?

Participant: They had given one set with ID. We used to check positioning the baby, ventilation is proper or no by observing rise of chest.
Interviewer: Ok, you used it on mannequin or live baby?
Participant: Used on mannequin, it helped to do on live babies.
Interviewer: What were the steps to use device?
Participant: First observing/checking for breathing of baby and the cry. Then drying the baby and putting the baby on mother's abdomen. If cry was there then used to give routine care. If not, we used to stimulate the babies and then babies used to cry. It still cry is not there, then immediate cord clamp is done, shift to warmer, put bag and mask and resuscitate.
Interviewer: Ok, what have you done in AIR study?
Participant: With AIR study we come to know whether ventilation is proper or no, number of beats in two minutes. We come to know the regular ventilation or harm ventilation, leakages.
Interviewer: How would you come to know you have done perfectly or no?
Participant: Madam used to come to review our performances.
Interviewer: Ok, did you come to know about performances only after review?
Participant: Sir taught us how to review and what to check, to check for harsh ventilation, beats etc..
Interviewer: Was it helpful?
Participant: Yes, we could know our mistakes. Proper sealing to prevent air leak by looking at device. It also shows harsh ventilation, number of beats.
Interviewer: Ok, were the earlier challenges solved with AIR device and how?
Participant: Yes sir. We learnt proper positioning of the baby, proper stealing and proper ventilation.
Interviewer: Ok, challenges have overcome and knowledge has improved.
Participant: Yes sir. Now fear is not there we are confident of handling birth asphyxia cases.
Interviewer: Were there any repeated trainings from government side?
Participant: No sir
Interviewer: What do you feel about those trainings?
Participant: We used to get trained to some extent and practice
Interviewer: Was that knowledge sustained?
Participant: Yes to some extent. If not done regularly, we forget.
Interviewer: Ok, AIR device is useful for you. Did you practice using AIR device regularly? How frequently you practiced?
Participant: Yes sir, daily we used to practice using AIR device. Only on holidays and if our duty was hectic we didn't do on those days.
Interviewer: Did anybody hesitate to do with AIR device?
Participant: No sir. Only if our schedule was busy we used to not practice. Everybody wants to learn and such opportunities are rare.
Interviewer: What did you like in the device?
Participant: I liked practicing with AIR device daily. It helped in improving knowledge. Can save babies with birth asphyxia. Got to know that we shouldn't do ventilation for all the babies with no cry. Many babies start cry after stimulation.
Interviewer: What did you like about instrument?
Participant: I liked penguin sucker, because it won't go deep while doing suction. The AIR device indicate about correctness of our resuscitation practice.
Interviewer: Ok, what you didn't like about device?

Participant: Sometimes it used to not get on. May be because of charge issue. Needs repeated charging. Initially it was not working properly. May be because of low charge.
Interviewer: Ok, what else you didn't like? Your opinions will help us in improving the device further.
Participant: It used to take more time to start the device. Need at least 2 to 3 minutes to start the device and connect to Bluetooth. That part was irritating when patient load was more.
Interviewer: What were the challenges for you and others in using device?
Participant: No challenges sir. It has become useful to use on live babies.
Interviewer: Ok, what were the challenges initially?
Participant: Yes sir, connecting the device, connecting to Bluetooth device was challenging. We learnt and did.
Interviewer: According to you what can be modified in the device?
Participant: Connecting to the device should be easy and quick or else will lose patience.
Interviewer: Ok, connectivity should be improved. Anything else?
Participant: One device was there in HBB study. Particular amount of sand per minute used to fall. That device was good. We could identify starting point and endpoint. Now they have given timer, but and timer is better.
Interviewer: Is it easier for all to learn this AIR device?
Participant: It is easy sir.
Interviewer: How do you say it is easy?
Participant: If we connect it properly and do, it is easy. Should wait for sometime. If we have time it is not an issue.
Interviewer: Can everybody learn using AIR device? Other than nursing staff.
Participant: Yes can learn if they practice properly.
Interviewer: Can it be challenging for others? For older and new staff?
Participant: Young staff will learn easily about connecting the device and all. for older staff it will take time to learn.Interviewer: For how long you used AIR device?
Participant: For six months.
Interviewer: How is your knowledge and practice skill because of device?
Participant: Both have improved. Receiving the baby, identifying asphyxia, use of bag and mask, warming, when to do suction and when should not do. All these have improved.
Interviewer: How do you feel about skills?
Participant: I feel proud about my skills. Earlier we used to call doctors, but now we do handle asphyxia cases and do resuscitation. Only in sever cases we call doctors.
Interviewer: Have you conducted deliveries after practicing with AIR device?
Participant: Yes sir. Have conducted deliveries, handled birth asphyxia cases, did resuscitation and sent them after stabilizing. One case we referred.
Interviewer: How do you feel about your earlier practices and present skills?
Participant: Have improved very much sir.
Interviewer: How many resuscitations you have done approximately?
Participant: Have done resuscitation for five babies and all survived.
Interviewer: Are you happy for that?
Participant: Yes sir, I am happy and confident that I can conduct deliveries and handle birth asphyxia cases.
Interviewer: How about your skill using bag and mask?
Participant: It has improved a lot.

Interviewer: How about improvement of techniques of other staff because of AIR device?
Participant: Have improved sir. Earlier the older nursing staff used to stimulate babies by hitting if baby didn't cry. Now it is not like that. Now they stimulate the baby, hold baby in correct position, use bag and mask, warmer, suction. Everything they follow now.
Interviewer: Ok, so because of training there has been improvement in your health facility.
Participant: Yes sir. So much of improvement is there.
Interviewer: Can you give example for that?
Participant: Everybody do sir. We keep ready all the instruments. If any birth asphyxia is there, everybody will be alert and do resuscitation. Because of AIR study there has been improvement.
Interviewer: Is there reduction of problems because of birth asphyxia in your center?
Participant: Reduced sir, too much extent.
Interviewer: In the past 4 to 5 months how many cases you have seen?
Participant: Many cases sir. Many babies start cry after tactile stimulation itself. 4 to 5 cases we did bag and mask ventilation.
Interviewer: Ok, all staff have same level of confidence now.
Participant: Yes sir.
Interviewer: How do you feel about implementation of use of AIR device in all the health facilities across the country?
Participant: Its good sir.
Interviewer: What problems can be faced?
Participant: Everybody will agree. Its about saving the babies. Will not face any problems.
Interviewer: What can be done so that everyone agree to use the device?
Participant: Now everything is going on smoothly.
Interviewer: What problems we can face to train all the nursing staff of the country?
Participant: May have challenges. They should be trained and have knowledge. If we give knowledge and training they will improve.
Interviewer: Any other challenges we may have?
Participant: Daily practice is required with the device. There will be improvement.
Interviewer: Can we use this AIR device in clinical care?
Participant: Yes, can do after proper training.
Interviewer: Do we face any problems if we use AIR device on live babies?
Participant: There may not be any problems if we do it properly. Many babies can be survived, referrals will be reduced. We get knowledge. Patient attender burden will be reduced with regarding to transport and delay in resuscitation.
Interviewer: Ok, can handle birth asphyxia by using device. Any other problems to use it in clinical care?
Participant: If cases are more referring with bag and mask is problematic.
Interviewer: Can you share your overall experience of AIR device and study?
Participant: It was good sir. Apart from opening the device and connecting, everything was good. Have improved knowledge, now I am more confident in delivering the babies and handling cases.
Interviewer: Any other experience of improvements?
Participant: Could survive many babies with bag and mask ventilation.
Interviewer: Ok, by doing that you have saved many babies. Anything else you want to tell about study?

Participant: Study was good sir. All workers were good. Monitoring and trainings were good.
Interviewer: What we can do to make implementation of this study successfully?
Participant: Similar training should be given. They will get knowledge.
Interviewer: Will the nursing staff co-operate?
Participant: Yes, all will cooperate. They will get knowledge. Earlier we had fear about babies survival. Now after practicing with device we are confident. Even we are confident to handle severe birth asphyxia cases.
Interviewer: Ok, thank you very much for participation.

10202-20230127

Interviewer: What you were working as when you were participating in the AIR study?
Participant: Staff nurse. I used to work as a nursing officer at primary health centre (PHC).
Interviewer: For how many years you were working as nursing officer?
Participant: My total years of service is thirteen years. Earlier I worked in general hospital Bailhongal for nine years. I came to this PHC three years back.
Interviewer: As a staff nurse means, do you conduct deliveries?
Participant: Yes. I conduct deliveries.
Interviewer: Have you done any delivery single handedly?
Participant: Yes, I have done single handedly.
Interviewer: How many deliveries you have done during your entire service?
Participant: I have done about one thousand deliveries in my service.
Interviewer: After the delivery, in your facility, let it be in the PHC or in any other facility, were there any problematic points? Mainly about babies not crying after delivery for which we give resuscitation, were there any such problems in doing resuscitation?
Participant: There were many problems for us. After delivery all babies do not cry immediately after delivery. There used to be many complications due to birth asphyxia. At that time, we get scared and we don't know what to do at that moment. Most of the times we would not be knowing what to do, about what decision to take? Which task to be done first? What task to be done next? We would not be able to decide. In a hurry we try to do many things and end up in doing something else.
Interviewer: What do you mean by many things?
Participant: I mean, we had heard about golden minute after birth, before this study. But we were not aware of about how important it is that the baby should cry with in the golden minute. If the baby does not cry, we were not knowing that we should clamp the cord immediately, take it to the baby corner and start the bag and mask ventilation as early as possible. We used to take much time at that moment by wiping the baby, clamping the cord doing this and that, we used to take 2-3 minutes to take the baby corner. When we used to start the bag and mask ventilation it used to be not that effective as it should have been. After this study it became easy for us to do.
Interviewer: According to you it was difficult for you to resuscitate the baby
Participant: Difficult and we used to be afraid to do it.
Interviewer: What you were afraid of?
Participant: We were afraid that whether we would be able to save the baby or not, and immediately we used to have no idea in our mind what to do. We were not able to follow the step by step procedure.
Interviewer: What other difficulties you used to have in doing the bag and mask?
Participant: We were unable to identify whether the airway was open or not, and whether the chest of the baby was having rise and fall of the chest, if there was secretion when to do the suction. We were not information about all those things.
Interviewer: To do bag and mask were you having all the logistics i.e. all the equipment's to do bag and mask.
Participant: We were having them in the general hospital but not in PHC Deshnur. Afterward they were provided to us.
Interviewer: At that time also you have done deliveries.

Participant: Yes, I have done.
Interviewer: Did you have any difficulty at that time?
Participant: Yes, I had, but I am happy, and I used to give primary or initial treatment and then used to refer the baby to higher facilities.
Interviewer: Was referral mechanism easy there?
Participant: It was not easy there at that time. There was no 108 ambulance at that time and there was no ambulance of the PHC also. We used to get ambulance from the nearby PHCs, like Nesaragi and Khanagaon (Nearby Health centres names).
Interviewer: How far they are?
Participant: Nesaragi is 3 km and if that was not available, we used to try for Chachadi ambulance, it should have come from there.
Interviewer: In trying all that was there any problem you used to face?
Participant: Yes, I used to have a lot of difficulty.
Interviewer: Did you used to have any other difficulty like you did not some equipment's etc?
Participant: Yes sir. It used to happen.
Interviewer: What was that?
Participant: Mainly we were not having suction apparatus.
Interviewer: Do you want that?
Participant: Yes, we need it. Then penguin suction tool was provided to us and it helped us a lot to do the suction.
Interviewer: Before you got the 'penguin' did you have any other difficulties or challenges? Did you have any experience about it? In doing resuscitation of the baby? To you or to any of your challenges. Do you have memory of any such instances?
Participant: I did have such experience earlier in the general hospital. Once I started resuscitation in anxiety, but it was not effective, the baby did not cry. And at the same time we could not get a pediatrician to help us. There was no pediatrician in the government general hospital, we tried to conduct a private pediatrician, but we could not get one. Then I took myself the baby to Belgaum in an ambulance. I kept on resuscitate the baby by using Ambu bag in the ambulance while coming to Belgaum (tertiary care hospital). I reached the civil hospital after one hour and the baby was admitted in NICU, and the baby was saved. But I faced a lot of problem, no pediatrician I could get, ambulance had to be arranged. I had to do Ambu bag resuscitation to the baby all the way to the civil hospital Belgaum.
Interviewer: You saved the baby. But is the baby fine?
Participant: Yes. It is fine. I faced many such challenges.
Interviewer: Do you have any benefit or help because of our study device? Specially in resuscitation?
Participant: Yes sir. It has been of much help to us.
Interviewer: What is that?
Participant: When that instrument was not with us, we used to do bag and mask ventilation, but we were not knowing whether it was being effective or not. We were not knowing whether the equipment was leaking the air or not, or whether there was a blockage or not in the equipment, or whether the chest was rising or not. Now, looking at those thing we practiced the resuscitation with this new device, we came to know how to do it correctly.
Interviewer: After you were having our study device did you have those inconveniences or difficulties which you used to have earlier? At present to do resuscitate in your facility? Or even

now do you have those problems?Participant: Are you asking me about this instrument? I could not understand the question.
Interviewer: The barriers and difficulties you used to have with the Ambu bag like, whether the air way is clear or not, such problems you used to have and you told that you could not know about those things. Is there any improvement about those challenges and problems?
Participant: Yes, there has been a lot of improvements.
Interviewer: Were there in facility or in your workplace, any mechanism to give you knowledge and training to you to do resuscitation of the baby?
Participant: We had a training about it in our district training centre.
Interviewer: During this past 13 years how many times you have received training about this?
Participant: One time I have got training.
Interviewer: Only once?
Participant: Yes. I have got training in this which was called as IMNCI (Integrated Management of Neonatal and Childhood Illness)
Interviewer: What was taught in that?
Participant: About the baby should cry with in one-minute golden time after birth, how to breast feed the baby, about kangaroo mother care, all that was told to us. But it was much of a theoretical training. It was not done to us as a practical training. In this study we did it ourselves practically. This is more effective.
Interviewer: Was it effective? Having a training once in thirteen years?
Participant: It was not of much effective. It was all theory for 5 days. After 5 days we forgot all that training. It was not possible for us to adapt it practically for us.
Interviewer: Did you feel that it was of any benefit to you by giving that education to you?
Participant: You mean in the government training?
Interviewer: Yes.
Participant: I have benefitted with it, but there was no repeat training and we could not adapt it practically, and also they did not provide any instruments to use it practically. They just took theory classes and gave us certificate and that was the end of it, but there was no revision, or repeat training and nobody came to observe whether we were doing it practically or not. Nobody supervise whether we were doing it practically or adapted it in our practice, whether knowledge they had given to us during the training.
Interviewer: Was it a drawback?
Participant: Yes, it was a drawback.
Interviewer: Were there any other trainings repeatedly?
Participant: That was the only training about newborn baby. We had another training called SBA (Still Birth Attendant) in that also some portion was covered.
Interviewer: Was it practical? Anything was practically done?
Participant: It was not possible to follow the training practically. And nobody came afterwards to follow it up.
Interviewer: Did they monitor you?
Participant: No, nobody monitored.
Interviewer: Were there any retraining?
Participant: There were no retraining. No monitoring. Instruments related to training were not provided. Nobody asked us about that theory and knowledge. We were trained and certificates were issued to us. But nobody did assess about whether the training was effective, whether it was adopted effectively into practice, whether it was useful or not. Nobody assessed about it.

Interviewer: So, it was a drawback in your opinion.
Participant: Yes, it was a drawback for us.
Interviewer: Actually what was AIR study and AIR device? I don't know about it, because I was not involved in that. I want to know about it from you.
Participant: As per I know, KLEs JNMC people are doing a research study called "AIR study" they have come up with a device known as 'AIR Device'. That device is to be connected to Ambu bag. It has got a Bluetooth device attached to it and a mobile phone set was also provided in which there was an App in it, we were each given an individual ID. Using our ID if we put on the Bluetooth, the device and the mobile set get connected to each other. They had given us a timer also. They had told us to practice bag and mask ventilation effectively within one minute to 120 seconds.
Interviewer: On what you used to practice the device?
Participant: We used to practice it on a mannequin
Interviewer: What else was in that study next?Participant: Next, a green light used to come in the device. If we did all the aspects correctly, …
Interviewer: What do you mean by all aspects, what are those aspects?
Participant: In that first it was whether there was any blockage or not. If there were any blockage, the yellow light used to be highlighted, and if there was no blockage it used to appear a green light. And there was a speed, or the rate of giving ventilation, there used to be a highlight to show whether we were giving ventilation at a fast speed or slow speed. If it was correct there used appear green light and if it was not correct a red light used to be highlighted. And there was about leakage i.e. whether we have put the mask correctly or not. Whether we have fitted the mask tightly or is there any leakage of air when we are pushing the device. A red light if there is a leakage other wise a green light used to appear. It helped us to maintain green light in all the aspects of our practice.
Interviewer: So, this was 'AIR study'
Participant: Yes sir, this was AIR study.
Interviewer: What did you feel that it benefitted you from this AIR study?
Participant: When there was birth asphyxia and I was using bag and mask ventilation at that time, it helped me whether it was effective or not, whether my effort was helping the baby or not, whether the oxygen I was giving was reaching the baby or not. It helped me to know all these things. Otherwise we used to go on doing the same procedure, before this study, we were doing it without knowing whether it was useful for the baby or effective to the baby, we were not having any idea about it. We were just blindly going on doing the same thing. We were not having the timer also earlier. We were not having any idea about how many minutes we did it, for how many more minutes we were supposed to do, when to check the pulsation, etc. We did not have any idea about those points.
Interviewer: Are there any improvements in your skill after practicing the study device on the mannequin.
Participant: Yes sir. Our skills have improved. Many skills have improved. If we had to do it after delivery we did not have practice. For any work to improve, there should be prior practice. Practice makes men perfect. It is impossible to perform by just reading the theory, to do it on live baby it is impossible. There are deliveries occurring in our facility. After practicing on the mannequin to do it on the baby. We have here 10-15 deliveries in our facility. Among them at least 1 or 2 babies go in to asphyxia or they have delayed cry. If we perform the device on the baby after practicing on the mannequin it would be easy for us. Earlier when we were doing resuscitation on live babies,

we did not use to get the rise and fall of the baby's chest, after doing practice on the mannequin, if we perform the device on the live baby, it is easy for us to perform.
Interviewer: Was there monitoring happening at that time? In the AIR study?
Participant: Yes, monitoring was being done.
Interviewer: Who used to come for monitoring?
Participant: From KLE one gentleman sir used to come. One madam also used to come. Those two used to come.
Interviewer: What they were doing after coming?
Participant: They used to ask us to demonstrate in front of them. Even though we told them that we had done the practice already, they used to ask us to demonstrate in front of them. They used to tell us to do the entire procedure step by step. There is a chart in our hospital, it is attached to the wall in which step by step procedure is shown. According to that we used to perform the procedure step by step. If we did any mistake they used to correct us. There were three staff nurses and all of them used to do the practice.
Interviewer: Do you used to practice daily?
Participant: I used to practice daily. All of us used to practice daily. At the beginning there was a little negligence, we used to miss, then after when we came to know its importance we did the practice for almost 90% daily. We used to practice daily.
Interviewer: How was that instrument. Can you explain me about it?
Participant: It was just like mobile. Its width is less. There was a knob to connect it to the Ambu bag. It was a good instrument, was easy to handle. As soon as we made it on, there used to appear a light. There was no difficulty to handle it and use it. It was very easy and good.
Interviewer: Which parts of that machine you liked most?
Participant: The part which I liked most was. Whenever we used to go wrong, there used to appear a red light. And when our assessment was being done, the monitors used to close it by placing a paper on it. Even then we were so perfect in doing that practice that I was able to ventilate the breathing in 116 seconds of the 120 seconds, that time one retired pediatrician of the civil hospital had come to us. On that occasion I did is successfully in 116 seconds out of 120 seconds. Because of repeatedly seeing and doing I had become perfect in that.
Interviewer: What was the main reason for you to be able to do it in 116 seconds out of 120 seconds?
Participant: Main reason was the AIR instrument, the AIR study instrument. By performing that instrument on the mannequin and practicing the instrument daily I was able to have perfection in operating it. If I had not done that I would not have been perfect in doing it.
Interviewer: What are the points you like most about that instrument? Have you seen that instrument?
Participant: Yes sir.
Interviewer: You told that it is like a mobile phone?
Participant: Yes
Interviewer: What other thing you liked most? One you told was the light.
Participant: Yes
Interviewer: You said that it used to alert you as soon as you made any mistake.
Participant: There is a sign mark in it to indicate whether there is a block or not. There is sign mark regarding the rate, rate mark which show per minute. And there is a sign mark for leakage of air. It shows which light has appeared for what mistake we did.
Interviewer: And you used to correct yourself?

Participant: Yes. According to which light is appearing. We used to come to know which mistake we were doing and accordingly we used to correct it and adjust our procedure, and again green light used to light up as we proceeded in the right procedure
Interviewer: Did you like that most?
Participant: Yes. I liked it most.
Interviewer: Anything else in that instrument you liked?
Participant: ……. (Thinks) mainly, for the ventilation to be effective, those 3 factors are important, rate, leakage and...
Interviewer: About only instrument, were there the only things you liked or anything else?
Participant: The battery of the instrument is also good. The durability of the battery is good. Once we charge it, we can use it for 4-5 days or for one week, there is no difficulty in it. It does not go leak or doesn't go dead. The battery is good.
Interviewer: Are there any things in the instrument which you do not like?
Participant: Au… (Thinks for 3 seconds). There is nothing like that in it. We managed it very easily (laughs). One thing was that every time, we had to take it and connect it to Ambu bag and after that we had to start it. If it is connected to Ambu bag directly, then it would be more easy in my opinion.
Interviewer: Are there any things in the equipment which you didn't like? It be anything.
Participant: Personally I don't think so.
Interviewer: When did you start using this device?
Participant: I think it was in the month of May, April or May.
Interviewer: Since then and till now did you feel any challenge in using that
device?
Participant: Our's is a 24x7 PHC. There would be one staff nurse in a shift. Sometimes, when we used to come for duty, the patients used to start coming to OPD (Outpatient department). Or if a delivery case comes and I get engaged in attending the delivery. In such circumstances. It was very difficult to do time management. This used to happen initially. That time we used to attend our shift weekly or fortnightly. Then the madam and sir came to us and set it right.
Interviewer: As you said one challenge was there used to be more OPD patients and it was difficult to do time management and you had to attend other dutys also as a nursing officer. Therefore you used to have challenges. Wasn't it?
Participant: Yes sir.
Interviewer: What other challenge.
Participant: We had set up a baby corner in the labour room to come there from the OPD side was difficult for us, leaving the OPD and coming to labour room every time was a difficult for us.
Interviewer: How much used to be your OPD?
Participant: It used to be about 100-120 per day. Leaving those patients in the middle and coming to labour room was difficult for us. And when we came to know that it was very important, even after our duty, while going out in the evening we felt that we should do it (the practice) before going out.
Interviewer: When did you feel that it was effective?
Participant: After almost one month.
Interviewer: Why? Why it was so?
Participant: Managing the time was not happening, we used to be busy. Therefore we did neglect it to some extent.
Interviewer: Is it only you that you felt it like that or other staff nurses also felt the same?

Participant: We all three felt like that.
Interviewer: Not here, in other places where your challenges work in this study. Were those also feeling the same?
Participant: Yes, the same way, in Bailhongal and in Naganur. Those staff nurses also had the same problem like time management. They said "there is nobody to ask us, those KLE people come and go, what is it's use for us? They are doing their study. In what way it is concerned to us? Let us say just 'Yes' and move forward" like this they were thinking and neglecting it. When once we started it and came to know that it was effective we continued to do it regularly.
Interviewer: So after one month you felt that it was effective then you started doing it, no?
Participant: When once we practiced it on mannequin 4-5 times and when we got an opportunity to do it on a real baby it helped us very much. Then, when we felt that if we practice the AIR study daily we felt that we can practice it more effectively. Then we started it doing daily.
Interviewer: You mean, by doing practice daily, you got interested in it and continue to do it daily.
Participant: Yes.
Participant: Yes, we got more interest in it.
Interviewer: Do you like to have any changes in the device to make it more effective?
Participant: When we were doing ventilation.
Interviewer: You just told that if the device is attached to Ambu bag it is good. Apart from that are there any other suggestions from you?
Participant: Hm. When we are doing ventilation if the baby starts normal breathing, some alert sign like some sound etc should be introduced so that we can know that the baby has started breathing.
Interviewer: What else?
Participant: The same thing, instead of stopping the ventilation and looking at the breathing, when the baby starts breathing spontaneously and starts crying there should some sound or sign should be there for us to know it. If that is incorporated we can do it still effectively.Interviewer: What else?
Participant: Hm…. (thinks for 5 seconds) if there is too much secretion and the chest doesn't rise, we do refill and reapply and try to do still faster ventilation, but if there is more secretion in the chest and if it is difficult to aspirate, there should be some instruction to do the suction.
Interviewer: You mean there is nothing for you to do suction?
Participant: No sir.
Interviewer: So, you mean to say that a suction machine to be provided additionally.
Participant: Yes.
Interviewer: What else?
Participant: …Hm… (thinks for 10 seconds) one more thing is, in the golden minute, the device records the hypothermia at that time we would be cutting the cord and taking the baby to the baby corner. If the warmer is on, the temperature would be maintained. Sometimes, especially in the villages there would not be electricity supply for some time, and if there is no electricity back up equipment there should be some arrangement to maintain the baby's temperature and to cover the baby. Or the device should show the temperature of the baby. This should be added.
Interviewer: You mentioned about the electricity going off sometimes was it the problem earlier also or is it a new one?
Participant: Earlier this problem was more than now. Now we have got a new building in which we have a backup system of electricity.

Interviewer: Was this a problem i.e. electricity supply going off even when you were working in the general hospital?
Participant: There used to be power cut in general hospital. There was a generator which used to supply electricity. But it was a manual starting engine. i.e. one person has to go to it and start it whenever there was power cut. To go there and start it on it used to take 5-10 minutes time.
Interviewer: Has it been causing inconvenience i.e. absence of electricity supply for some time, to you at the time of delivery?
Participant: Yes, it has happened.
Interviewer: To resuscitate?
Participant: For resuscitate also it has happened.Interviewer: One thing you want is that the device should show the temperature of the baby, what else you would like to improve in the device?
Participant: I told about the suction also.
Interviewer: Yes, you told about the suction machine and also you said about the device to be connected to the bag. Three points you have told to improve the device.
Participant: Yes
Interviewer: Learning to operate this device, was it easy or was it difficult for you and for your co-trainees?
Participant: It was very easy, not at all difficult.
Interviewer: In what way it was easy for you? Some people say that it was difficult.
Participant: it is not at all difficult. Only thing is to attach it to the bag, when we attach it to the Ambu bag these should not be a loose attachment. It's nob, if it fits to the nob inside, the suction will start working, it become on and it doesn't give us any trouble to operate, when we are fixing it, if it fits loosely or if it doesn't fit tightly, the Ambu bag will not work. The air will not enter and we will not get the resistance, to pump the air. That was the only difficult thing. Nothing else. There is nothing tough in learning the device.
Interviewer: Is there any difficulty in grasping the knowledge that we are giving
to you?
Participant: No sir, no, 99.9% we can grasp the knowledge you gave to us.
Interviewer: You had the technique of resuscitation earlier also. According to your saying, the government has trained you one or two times. After that we gave you this device, the study device. Has your resuscitation skill been improved after you got this device to use?
Participant: There is a lot of improvement.
Interviewer: Is it your feeling or experience?
Participant: It is my feeling and experience. The practice I have done on mannequin. Doing that practice on the mannequin repeatedly and the experience of my using it on the live baby. With the experience of that I am telling you sir.
Interviewer: Can you tell me an example?
Participant: We are three people in this. One in the night, one in the morning and one in the afternoon are on duty. I was one on the duty and the other two had gone for training. When I was on duty in the OPD, one primi gravida casecame to our facility for delivery. I examined the woman, looked at the dilatation and examined the FHS (Fetal Heart Sound). She was inactive labour. Then I conducted the delivery. The baby took more time to deliver even after complete dilatation of the cervix of the uterus. Usually it takes one hour at the maximum. But it took two hours. It took double the time. I thought about referring the case to higher facility, but the cervix was fully dilated. I did not refer it because I thought if I referred, it would deliver in the ambulance only. Therefore I tried to deliver it there only. After some time the delivery occurred but the baby had

birth asphyxia. The baby did not cry. I was alone in the labour room. Even then I did not panic. I refreshed all the procedure of AIR study in my mind and I did the bag and mask ventilation after clamping the umbilical cord, taking it to the baby corner, I did it for two minutes. After doing the bag and mask ventilation for two minutes the baby cried. Then I did all the routine care and after that I referred the baby to tertiary care centre in the ambulance so that no further complication should occur. That was one experience. One more experience is. It was a medico legal case. Shall I tell about it?

Interviewer: Yes, you can tell. Don't tell anybody's name

Participant: She was a fourteen year girl and was studying in 8th or 9th class in the school. She came to our PHC with the complaint of pain abdomen. I had little doubt about her that she might be carrying. And when I examined her abdomen I got the doubt without telling them anything I asked her to bring her urine sample. She went to bring urine sample to the toilet and she delivered a baby there itself. Within five minutes she delivered, and her attenders came to call me saying "delivery happened, delivery happened". I went there and saw that the baby had fallen in the commode of the bathroom. I took the baby and weighed it. It was 1.6kg.

Interviewer: Was the baby crying?

Participant: No, the baby was not crying. Immediately I placed the baby in a tray and took it to the labour room along with the mother. I put the baby in the baby warmer, still the baby was not crying. Therefore I did bag and mask ventilation immediately. When I did the ventilation for twenty minutes, the baby started crying. Baby's chest was clear. I did the suction. Again I did bag and mask ventilation for another minute. Then the baby started crying very strongly. After that I informed to police to make it a medico legal case and referred to the civil hospital Belagavi, both the mother and the baby. It was alive for one month in the civil hospital. After that the baby died.

Interviewer: So, due to your effort.

Participant: Yes sir, with mu effort the baby survived for at least one month, with that procedure I could save the baby even though it survived for one month only.

Interviewer: So you have successfully resuscitated a MLC baby.

Participant: Yes. To do resuscitation on such a small baby, the AIR study helped me.

Interviewer: Do you feel that with AIR study, the capacity of the persons in the facilities to resuscitate the newborn babies will improve?

Participant: It has happened to myself only.

Interviewer: You told your experience. Do others also feel similarly?

Participant: Yes, they also feel similarly, because after reading it in theory, doing it practically is not so easy. Resuscitation is not so easy as to do it without any leakage, to make the chest rise and fall and to make the oxygen to reach 100% to the brain it is not so easy. For us doing resuscitation is not easy. It comes only after much practice.

Interviewer: You mean to say that by doing this AIR study. The other nursing staff's capacity in resuscitating the newborn babies has improved.

Participant: Yes sir, there is 100% increase in the capacity of staff nurses in those PHCs where this AIR study is being conducted. And because of this study there will be improvement of capacity to resuscitate of all the staff nurses.

Interviewer: In your opinion is it possible to train and to educate or to include in the training curriculum throughout the country? Is it possible or not.
Participant: It is possible sir.
Interviewer: If it is possible, will there be any challenges or difficulties?
Participant: There may be challenges to start with. Once it is started everybody will like it, and it is very effective and useful. To save the life of a newborn baby. Everybody will be happy with it. They will be lucky to have this training.
Interviewer: According to you what would be barriers?
Participant: To start it throughout India, there could be financial barriers, barriers about human resources.
Interviewer: What human resources will be needed?
Participant: Mainly staff nurses are needed. All the nurses should participate actively in this. In many places there is scarcity of nurses and workload is more on them. Many posts are vacant. In PHCs the posts are vacant and workload is more. But still they should come forward and participate in this actively. Now more staff nurses are working on contract basis in the health department and their salary is less. What they think is "we do so much work, but we are paid less. Why we should do extra work?" like this they think.Interviewer: So this is also a barrier, that they have more workload and less pay.
Participant: Yes.
Interviewer: What else is there?
Participant: For them to do it, if the instrument and finance are provided, they could do it.
Interviewer: You feel they will do it?
Participant: Yes, definitely they will do it.
Interviewer: Will there be any other barrier to conduct training of this device?
Participant: Nothing else, those are the three barriers.
Interviewer: You practiced this AIR device on the mannequin. Is it possible to improve the clinical care by doing it on the real baby?
Participant: It will be possible, definitely it will be possible.
Interviewer: Will there be any difficulty or challenges for that? To practice really on the real baby.
Participant: After doing practice on the mannequin I don't think there will be any kind of problem to do it on real baby, because we have done the practice daily on the mannequin, with the AIR instrument and after getting the practice, without the instrument we have tried it on the real babies. We have become perfect in it. Doing by the instrument there will not be any problem for us. We can do it definitely.
Interviewer: By this will it be useful or not.
Participant: It will be very useful. We have given the name as "golden minute" to the first minute after birth. The instrument itself tells us what to do with it. Without the instrument there is no importance to the 'golden minute'
Interviewer: With this will there be improvement in the clinical care and the care of the baby?
Participant: There will be a lot of improvement. By doing the ventilation by attaching the instrument with the bag and mask the baby gets the oxygen within one minute, and it will prevent the possible complication like, mental retardation, neurological problems, or heart problems occurring in future of the baby. By doing resuscitation successfully with in the golden minute we can prevent many complication like these. And we can give a healthy baby to the community and to the nation. If we prevent these complications in the golden minute, the baby will not have any

complications or chronic diseases in future.Interviewer: Apart from this have you any experience, suggestions or feelings about the AIR study?
Participant: In the AIR study mainly we are giving oxygen to the baby, and to initiate normal breathing of the baby. By doing this we are trying to supply oxygen to brain of the baby as early as possible. If we supply oxygen early to the brain we are preventing that much of mental retardation of the baby. If the baby gets MR (mental retardation) it will be a burden to the family and to the nation. Afterwards we cannot do anything to that baby. To take care of that baby lifelong an extra person is needed. To the entire family it would be a burden financially. If there are some complications like congenital heart diseases, in such conditions, if we don't resuscitate the baby early or immediately the baby may die. If the baby dies the mother would have psychological effect because the mother had carried the baby and nourished it in the womb for nine months. If we don't resuscitate the baby as early as possible, the baby would get many complications and if that happens the baby needs treatment for its entire life. That will cause waste of time and money and the mother will be mentally depressed. So instead of giving a diseased baby to the community if we use this AIR study device, we can prevent all these complications. We can prevent the hurdles to the nation's economic and social progress. By preventing baby's death medically, our country's IMR (Infant Mortality Rate) also comes down, and we can show to the world that we are not developing but we have developed our country to do all that our AIR study helps a lot. This study should be implemented to all over the country and the training should be done to all the nurses. The clinical care of the country will improve. Because the nurses are the ones who are directly exposed to the clinical care. For example in the general hospital nearby, in a month, there are 9-100 deliveries happening. Among those 100 deliveries, even for a single delivery no doctor is attending. All the deliveries are conducted by nurses. If there is any complication the nurses are the ones who attend to it first. This is the situation in a general hospital of taluka place coming to the rural area facilities, there will be no doctor available in the hospital. Take for example my PHC, the lady doctor has gone on maternity leave. She will not come back for six months. There is no doctor there. We are the ones who attend to the delivery, baby care and any complications as birth asphyxia etc. therefore very thankful for you because you have selected us for training which has been very helpful to us. This is the situation in our state. I think the same situation is prevailing in all the states of our country. This is the situation in our country. Being the situation like this, if all the nurses are trained, though this study and prevent the birth asphyxias, it would be a benefit to the entire country.
Interviewer: So, According to you, resuscitation in the golden minute is very important.
Participant: Yes, it is very important.
Interviewer: So, all should do it.
Participant: Yes, all should do it.
Interviewer: Whoever conducts the delivery, he or she should do it.
Participant: Yes, whoever conducts the delivery he or she should have that knowledge to have that knowledge and to do it effectively. They should have practical knowledge with that practical knowledge, if they have the AIR study instrument, it will be very helpful to make 100% use of the golden minute.
Interviewer: So according to you they should do resuscitation, should have resuscitation knowledge and to strengthen the knowledge, practice is needed, and to have practice AIR study is necessary.
Participant: Yes sir.
Interviewer: So, if this happens it will be good to the entire country.

Participant: It will be very good. We can bring down the infant mortality to a large extent.
Interviewer: Apart from this, would you like to say anything about this study, your feeling or opinion?
Participant: To say it in one sentence, this AIR study is very useful. It is like a guide or teacher for us. I told you about the light. We see such lights in the traffics of the roads. If it is green, we think that it is safe and we go ahead and if it is red we think that it is not safe to go ahead and we wait. Similarly we have adopted the same mechanism it is very effective, green means, it helps us to ventilate enthusiastically. It helps us to do the ventilation without any hesitation. If there is red light, we think that we have done some mistake and we need to stop and correct it, we have to reapply, re feel and we need to do still more hard and fast ventilation. The device itself tells us like a teacher and guide. When such a device is with us it is not possible for us to go in a wrong way. We can do the ventilation with more confidence.
Interviewer: You mean to say that the device is like a teacher for you
Participant: Yes, it is like a teacher giving guideline to us and we feel that somebody is there with us to supervise. It is like a god gift for us. I feel so.
Interviewer: Apart from this anything you would like to say?
Participant: It is an invaluable object for us. We cannot valuate it. For the lives we have saved of many babies, this device is the main reason for it.Interviewer: Thank you so much. You spoke with me openly all this time today. Actually I have learnt so many thing from you we will take up all your suggestion and make effort to make improvements in the implementation of this study.
Participant: I am thankful to KLE for selecting us for the study and giving such a good instrument to practice.
Interviewer: Thank you very much.

10101-2024 0203- Medical Office – Male

Interviewer: Sir, what you are working as?
Respondent: I am working as a pediatrician at Nagnur CHC.
Interviewer: For how many years you are working as a pediatrician?
Respondent: For the last 3 years I am working there as a pediatrician.
Interviewer: Earlier to that, where you used to work?
Respondent: After completing my PG, I came and joined Nagnur CHC.
Interviewer: You have heard about our AIR study. Before that did you have any idea about resuscitation?
Respondent: Yes, during our PG study time I have done the resuscitation many times in NICU, New born Special Unit and have maintained all those things. I have the idea about the resuscitation. I have taken training about that.
Interviewer: You mean you had already had knowledge about resuscitation and skills. About the skill, what all skills you were having?
Respondent: I had the skill about, immediate after birth, taking measures to assess the danger signs after birth, different dangerous signs, bag and mask ventilation for breathing problems, and intubation and ventilation all those procedures in my PG life.
Interviewer: Have you done resuscitation during this last 3 years in the CHC?
Respondent: Yes, in our CHC at the time of delivery. I have done resuscitation, improved that baby condition.
Interviewer: Do you have any challenges and barriers?
Respondent: Barriers in the form of, lack of things i.e. the required instruments not being available, training of staff nurses in a hurry, these challenges I have seen.
Interviewer: Hurry burry, was there a lack of manpower?
Respondent: There was a lack of trained manpower, i.e. Staff nurse training and AMBU bag. They were there, but they will not be available at the right time.
Interviewer: Face any challenges specifically while doing resuscitation on a baby? Before AIR study in your experience anything about us special case had happened?
Respondent: Before AIR study I did resuscitation for 2-3 babies and referred them to higher centers. Those babies are fine neurologically. Usually if there is delayed cry there is every chance of baby going into HIE stage I or HIE stage II (hypoxia Ischemic Encephalopathy), but because we look at early intervention, the babiesare fine neurologically. There is no HIE sequelae, 2 to 3 babies parents come to me today also to say that they are fine.
Interviewer: What do you feel about AIR study?
Respondent: I think AIR study is a good study. It was needed in the community. I think it should be there in all the hospitals, because we doctors cannot be available all the time, staff nurses will be there, or other doctors will be there. It is very helpful for them. I have seen all the staff nurses used to be afraid to do bag and mask resuscitation. After implementation of a study they are easily doing it. I think it is very helpful the AIR study.
Interviewer: What is your opinion about the AIR device?
Respondent: Device be used to connect AMBU bag with the mask usually we used to keep it to our left side. So that we can have eye contact with the mannequins. For the first 4 months it was blind. After 4 months we opened it. It was blind we used to count the rate while doing it. We used to give 80 breaths in two minutes. After that we used to do connection to the app to see how much

percentage we did achieve improvement compared to the last time. We used to see improvement day by day.
Interviewer: You told about the challenges, earlier you used to have some hurry burry while doing AMBU bag and the staff nurses were not well trained in doing that. After you got the AIR device did your challenges have come down?
Respondent: Yes, when we did HBB project, at that time some instruments were arranged for the staff nurses delivery preparation etc. where being made properly. Because of that we got a lot of help. I observed one staff nurse doing bag and mask resuscitation. It was for a Preterm baby of 1.7 to 1.8kgs baby. There was a little fair on the part of the staff nurse to do resuscitation on a live baby. Doing resuscitation on a live baby is quite difficult from doing it on a mannequin. Due to the fair there could be a little more in the rate or a little more in the pressure of doing Resuscitation. She was doing normally and the baby cried also.
Interviewer: So AIR device has helped you. You mean?
Respondent: Yes, It does help us.
Interviewer: After your working place, there are facilitators in the form of OBGYNS or pediatricians or medical officers in some places of PHC. If you look at them, what do you feel about their knowledge and skill earlier?
Respondent: Earlier, even though I am happy that reason I need regular touch with the knowledge and skill. If I am a pediatrician my memory of the skill and knowledge will be for a longer period that's all. As far as staff nurses, gynecologist and anesthesiologist are concerned if they keep on doing it, i.e. the Ambu bag resuscitation and it will be helpful. If there is discontinuation in that the effectiveness of their resuscitation will go on reducing.
Interviewer: Earlier, was there training given at your CHC about the resuscitation? In your government sector?
Respondent: In my 3 years' service here no training has come up in our facility. But there are regular trainings in our skill lab. And they are told about baby resuscitation. Staff nurses get trained. But I have not got any training. Air device training is the first one for me. After that I had gone for skill lab training
Interviewer: They would have trained your staff before you came into the facility. Did anybody used to come to do monitoring of any training? In the government setup?
Respondent: In the government sector, there is regular training program for our staff nurses. Early one or two staff nurses are usually sent for training. But nobody comes to monitor their skill after training.
Interviewer: Within the past 3 years anybody came for monitoring?
Respondent: Nobody has come. Even if someone comes, they come and do the assessment once in a while.
Interviewer: After giving this AIR device training is there any improvement in the knowledge and skill of the staff nurses compared to earlier?
Respondent: Yes, there is improvement there is a lot of improvement. I have given you an example about a staff nurse. There is a lot of improvement. One staff nurse was in the research unit in the lab. After coming here he was totally unaware about the clinical work. After this AIR study, he is doing 100% effectively. The device shows 100% as his effective resuscitation. There is improvement in the field and also on the baby.
Interviewer: Can you tell me practically which skill is improved any one or two skills which you know?

Respondent: Particularly means rate, pressure control, related to AIR device, rate, pressure and leakage and chest rise, all these have to be looked at 2 - 3 times. Apart from that, in the HBB, starting from birth preparedness to conducting delivery they do all the things.**Interviewer:** What about air concentration, how much air concentration was to be there, what used to happen about the leakage. Can you tell me something about them?
Respondent There is improvement in all those parameters.
Interviewer: Is there any part or any subject which you liked in the AIR device?
Respondent: I already told you about AIR device, controlled rate, controlled pressure and the block. All these three aspects we can easily address. These are the main issues in resuscitation. Babies breathing rate may be high, giving high pressure leading to traumatic injury to the lungs or their maybe hypoventilation, these are the main issues. Otherwise we will be doing bag and mask ventilation and there may not be chest rise at all, there may be a block or a leakage. By using a device all these three problems can be avoided. Easily there will be improvement.
Interviewer: Among those particularly which component you like in the AIR device here is the mask AMBU bag and the device. Among those which one you liked most it can be anything
Respondent: AIR device is all about three components. One is leak block and the other is a rate controller. These three are there in the AIR device. Can see the blockage by chest rise.
Interviewer: When I ask some of the participants they told that when we do bag and Mask it gives an indicator that is a light indication. Some people like that most. Like this which you liked. What you are saying is clinical observation ok, it is fine but which part in the device you like?
Respondent: The light indicators give those components only. Block rate and leak these are the three things one is rate component. Rate is also needed. Another is block.
Interviewer: You mean the light indicators given by the device?
Respondent: Yes, that is good indication. When you talk about the device it is the indicator I like that very much.
Interviewer: Apart from that did you like anything?
Respondent: Nothing indicators only.
Interviewer: Is there anything you disliked in that device?
Respondent: There is nothing like dislike. But because there is more weight on the left side it is difficult to handle the device and there may be problems in alignment. If we do it correctly there is nothing like dislike.
Interviewer: Weight is a little bit more you mean?**Respondent:** I mean it can be considered. If you want to take it as dislike, because there is more weight on the left side. There will be problem in bag and mask attachment. You can consider it as a point of dislike.
Interviewer: Apart from this anything else?
Respondent: No nothing else.
Interviewer: So only thing is because of more weight on one side there will be imbalance?
Respondent: Yes
Interviewer: What challenges did you face while using the air device?
Respondent: Challenges means….. One is connectivity, to connect device to mobile, internet connection or the Bluetooth that is a challenge. Other than that there is no challenge.
Interviewer: You mean to haven't faced any other challenges, there was challenge in Bluetooth connectivity and mobile connectivity?
Respondent: Yes
Interviewer: Other than that no challenge
Respondent: No challenges.

Interviewer: To do AMBU bag was there any challenge?
Respondent: No challenge.
Interviewer: What do you suggest for the AIR device to be more useful? What challenges you suggest to be made?
Respondent: Improvement in the AIR device? It is a good device only. Suggestion means?
Interviewer: In the AIR device, to improve it more, what changes can be made, any ideas from you? Like "It would be better if it is like this"
Respondent: I don't feel anything like that. It is very good.
Interviewer: Is this device easy to learn all difficult in your opinion?
Respondent: It is easy to learn. It means, these are indicators no? Whatever you do, it gives real time feedback. If you rate it more it gives feedback so that you can control the rate. If there is a leak, it gives feedback and if you adjust the mask the leak will go away. If there is a block it can be solved easily. So it will be useful because it gives us the real time feedback. Afterwards also when we review it in the app it gives us the percentage and this way it helps us to improve our efficiency.
Interviewer: Initially it is easy or difficult to learn this device?
Respondent: I did not feel it was difficult
Interviewer: You mean it can be easily learnt?
Respondent: Yes, it can be easily learnt.
Interviewer: Easy in the sense, you already know about resuscitation, does that in anyway influence your learning? You used to do AMBU bag resuscitation earlier also. Does that influence you to do this practice on the Air device?
Respondent: Do you mean that because I was using AMBU bag earlier, and after attaching the device do you want to ask me whether it creates difficulty? Or
Interviewer: The same thing, earlier you used to do bag and mask resuscitation. Now we have given you the AIR device. Does that help you in learning this or do you feel that was entirely different and this is entirely different from that?
Respondent: Both are there, by using the device our quality of resuscitation has improved, and it is not so difficult to learn it. It can be easily learnt.
Interviewer: Did this AIR device improve your resuscitation skill or not?
Respondent: It has improved.
Interviewer: How?
Respondent: I already told you. We were not knowing about leakage happening. Similarly rate and pressure control. Now we can know these things through the device. We can get adjusted if the rate is more. I can control it, while doing the bag.
Interviewer: What other improvements?
Respondent: Apart from that…… (Thinks)
Interviewer: You told that with this device our concentration will be better while resuscitation with this device and the device gives some or the other indication and you come to know about your skills, how much leakage was there if we want to implement this AIR device in a facility, what all the challenges would come to us? Now already we have implemented in some facilities and we have given training also, do you feel that there would be some challenges in implementing it in any other facility?
Respondent: If you are going to implement the device only for training purpose there will be challenges with regard to training issue only, and also challenge of regularity. As you and the madam, all of you have done training to us. That has to

be in continuity. In that monitoring is important, to see whether they are doing the resuscitation practice regularly or not. If they are doing it correctly there would beno problem. But if they (the staff) do the practice when we are around here and stop doing when we are not here, then it would be a problem.
Interviewer: In your facility you have done the work on AIR device, and your staff nurses also have worked on the AIR device. Has it improved the resuscitation quality in your facility?
Respondent: Yes, it has improved the quality of the resuscitation in our facility.
Interviewer: Is there any special scenario? You and your staff are practicing on the mannequins. Similarly there will be deliveries occurring in your facility. Now will you be looking at the babies and maybe doing resuscitation if necessary. Are there any special scenario?
Respondent: I have already given you an example. Where staff nurse did this resuscitation for a baby of 1700 grams weight. She handles it very coolly (without any fuss or problem).
Interviewer: So the training has helped her?
Respondent: Yes, before that she use to get panic and used to resuscitate with high rate or with high pressure or with problem in attachment. But after she took training of AIR device, they are doing bag and mask ventilation easily and the baby cried also.
Interviewer: You mean the AIR device training has helped you in improving the quality of skill of resuscitation?
Respondent: Yes.
Interviewer: Now if we have to improve this AIR device training throughout India, what challenges we may have to face like manpower, resource etc..?
Respondent: It is necessary to implement it throughout India. I have already told you. There may be always a trained pediatrician or it trained staff nurse in all the facilities. Therefore by implementing 8 in all the PHCs and CHCs, the quality of skill of the staff nurses there will improve. So it is needed. The challenges would be like manpower, money power those are the challenges. If the government implements along with you, it would be a good thing.
Interviewer: What other challenges will be there at the time of implementing there?
Respondent: Challenges means….. (Thinks)... If the staffs are willing to do, they must be willing to do. If you get their cooperation it will be good.
Interviewer: You told that if the staff are not trained well that influence?
Respondent: They should be given proper training and there should be regular monitoring for at least 6-7 months, as you did here. By doing so their skill will be improved.
Interviewer: Will there be any challenges to do clinical trials with this device throughout India? Now we have done it on mannequins. To do it as a clinical trial, will there be any challenges? As a pediatric what are your opinion?
Respondent: There will be issue like Co2 retention and all. There is device no? Co2 retention can occur. Other than that there will be other problems. There may be a sterilization issue. To do with the same device from one baby to another there will be the issue of sterilization.
Interviewer: You mean we need to do it correctly like biomedical management?
Respondent: Yes.
Interviewer: Apart from these any comments or suggestions from you about the AIR Device?
Respondent: It is very good to use. I hope it will be implemented everywhere.
Interviewer: Any suggestions? From your side?
Respondent: Nothing like that.

Interviewer: Because with your suggestion we can improve the present device. You are doing on it the field, therefore you know, what challenges are there, we can improve the device further and we can resuscitate the baby still better.
Respondent: In this device block, leak and rate on these three points the improvement can be done. Another thing is when we start doing bag and mask ventilation, the baby will still start self-breathing. At that time we can easily identify the baby's self-berating and we can do the berating rate control, through the device only. We can help the baby breath this way.
Interviewer: You mean the device should recognize automatically the baby's self-breathing and that much pressure and rate can be given to the baby?
Respondent: Yes, when the baby is also breathing, if we press the ambu bag with more pressure, there is chance of traumatic injury to the lungs. That should be detected by the device.
Interviewer: You mean the device should detect the baby's breathing and should give automatic response accordingly. Apart from these, are there any other suggestions?
Respondent: No, no suggestion.
Interviewer: Ok, thank you sir for your valuable time spent with me.

KII Nº :7

AUGMENTED INFANT RESUSCITATOR (AIR): TRANSITIONING A NOVEL BEHAVIOR CHANGE INNOVATION TO DRIVE NEWBORN VENTILATION SKILLS ENHANCEMENT

KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS QUESTIONNAIRE AND CONSENT FORM

Semi-structured focus group discussions and key-informant interviews

Notes: Participants will have provided written informed consent to potentially participate in focus group discussions (FGDs) or key-informant interviews (KIIs), associated with this study, prior to their participation in the overall study. Because the FGDs and KIIs will occur approximately 5 to 6 months later, we will also obtain a second, verbal informed consent from participants to acknowledge their voluntary participation in the FGDs or KIIs. To be read to all participants:

Facilitator: The purpose of our discussion today is for us to understand your experiences with the Augmented Infant Resuscitator – or AIR – device. The purpose of this discussion is to understand what worked and what needs to be improved.

Participating in this discussion is completely voluntary. Deciding whether or not to answer these questions will not affect your position in any way and will not be included in any evaluations of your individual performance. Whatever responses you provide in this discussion will remain completely anonymous.

So that we don't miss anything during our discussion, we would like to audio-record this discussion.

Do you have any questions?

Do you agree to participate?

1. Today's date: 23/11/2023
2. Location of discussion: AIR STUDY PIs OFFICE- ALUPE
3. Number of Facilitator(s) conducting discussion: 2
F. Number and cadre of participants:

Nurses: 1
Midwives: 0
Doctors: 0
Administrators: 0
Other: 0

Discussion questions:

This discussion guide is intended to be semi-structured. Evaluators may add probes or additional questions based on the direction of the focus group or key-informant interview. Not all questions may be asked at every discussion.

[Start audio-recorder]

1. In your work, what are some of the barriers or challenges you face in newborn resuscitation and the retention of newborn resuscitation knowledge and skills?
   Infrequent practice sessions leads to faster decay of skills and knowledge
   Understating-a single staff on duty finds it hard to conduct newborn resuscitation while at the same time reporting to maternal need
   Lack/inadequate resuscitation equipment

2. Does the AIR device help overcome any of these barriers and challenges? If so, in which way?
   Yes
   The feedback from the AIR device helped to improve the outcome of neonatal resuscitation
   The device gave feedback on individual parameter e.g rate of ventilation,airway positioning and mask positioning hence one could easily identify the area where they had a problem
   The programme donated resuscitation equipment to the hospitals e.g penguin sucker,bumbags alongside deployment of AIR devices which helped in newborn resuscitation.

3. In your work, what are some of the facilitators or things that make things easier for newborn resuscitation and the retention of newborn resuscitation knowledge and skills?
   Availability of equipment to enable frequent practices e.g Ambu bag,AIR device,suction device,masc and manikin.
   On-job training of other CHWS helps to improve ones knowledge and skills
   Follow-ups and supervision encourages CHWS to carry out frequent practice session
   Participants could make a reference to the action plan which was sticked to the wall while carrying out newborn resuscitation.
   Cooperation among staff helps enabling HCWS work together and build on there skills through interactive learning.

4. What did you LIKE about the AIR device? What worked well?
   Yes!
   The device provided feedback which encouraged HCWs to archive the 1st effective ventilation within the recommended timeline.
   Enable participants to modify their ventilation accordingly given that if provided specific information on the status of ventilation.
   The device could be used easily without any identifiable problems. The device was perfect.

5. What did you DISLIKE about the AIR device? What didn't work well?
   No identifiable dislikes with the device.

6. What challenges did you have in using the AIR device?
   The participants had limited time to Cary out practice sessions with the device due to workload.
   Having to take some time to pair the device with Bluetooth may delay initiation of ventilation.

7. What would you suggest we change to make the AIR device even more useful?
   The time should be integrated into the AIR device to minimize interruptions during ventilation's.
   Could consider making the device smaller.
   The device should be automated such that when you turn it on you do have to go for the timer again.

8. Do you feel that the AIR device is easy to learn and use? Why or why not?
   Yes!
   The device provides immediate feedback and guides one on which are to adjust during ventilation.

9. Do you think the AIR device improved your resuscitation skills? Why or why not?
   Yes!

The AIR device enabled participants to learn the correct ventilation techniques rate , airway and mask positioning.
The feedback from the device motivates one to initiate ventilation when you realize you are doing the correct thing.
It helps to sharpen and maintain the skills through frequent practice which translates into good clinical outcomes e.g neonatal mortality.

10. Do you think the AIR device can help with quality improvement efforts at your facility? In which way?
    Yes!
    Will ensure that good ventilation is achieved in time.
    The AIR device would help to set a standard for newborn resuscitation thereby eliminating disparities in techniques give among HCWs across the country.
    Use of the AIR device would lead to a decrease in neonatal mortality. HCWs would get feedback and adjust their ventilation to an effective ventilation to an effective way.

11. Do you see any barriers or challenges to implementing the AIR device for healthcare worker <u>training</u> in your country?
    Different/separate equipment to be used with the AIR device-some may set lost e.g phones
    The training with the AIR device may not be wholly embraced on the go
    To keep the device clean on the areas that are frequented by blood and other bodily fluids may pose a challenge if there are no clear guidelines on how to decontaminate the AIR device in clinical areas.

A few facilities without electricity may find it difficult to charge the AIR device
Participants may not use their own bundles to upload data if they are not facilitated
Poor internet connectivity in some regions may interfere with transmission of data

12. Do you see any barriers or challenges to eventually implementing the AIR device for clinical care in your country?
    Lack/poor internet connectivity in some areas
    Lack of electricity/power black outs
    Device has to work with other components e.g timer,AIR app on the phone.daily the connections may lead to delays in initiation of ventilation
    Rechargeable battery may wear out and the AIR device abruptly disconnects while carrying out ventilation
    Need for assistant to help with the timing hence need for additional human resource
    Some HCWS may be reluctant to embrace use of the device instantly
    Poor resource allocation to acquire the AIR devices by the government
    Mother of babies may be more anxious if they see the device being used to resuscitate their babies thinking their condition is very critical.

13. Any other suggestions or comments about your experience with the AIR device?
    The device should be modified to use dry cells to be used in case of power blackouts
    The device should have an integrated timer and automated to connect with AIR app
    More HCWs should be trained on the use of AIR device in newborn resuscitation.

Thank you for your time!

KII Nº:6

AUGMENTED INFANT RESUSCITATOR (AIR): TRANSITIONING A NOVEL BEHAVIOR CHANGE INNOVATION TO DRIVE NEWBORN VENTILATION SKILLS ENHANCEMENT

KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS QUESTIONNAIRE AND CONSENT FORM

Semi-structured focus group discussions and key-informant interviews

Notes: Participants will have provided written informed consent to potentially participate in focus group discussions (FGDs) or key-informant interviews (KIIs), associated with this study, prior to their participation in the overall study. Because the FGDs and KIIs will occur approximately 5 to 6 months later, we will also obtain a second, verbal informed consent from participants to acknowledge their voluntary participation in the FGDs or KIIs. To be read to all participants:

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Participating in this discussion is completely voluntary. Deciding whether or not to answer these questions will not affect your position in any way and will not be included in any evaluations of your individual performance. Whatever responses you provide in this discussion will remain completely anonymous.
So that we don't miss anything during our discussion, we would like to audio-record this discussion.

Do you have any questions?
Do you agree to participate?

1. Today's date: 21/11/2023
2. Location of discussion: AIR STUDY PIs OFFICE ALUPE
3. Number of Facilitator(s) conducting discussion: 2
F. Number and cadre of participants:

Nurses: 1
Midwives: 0
Doctors: 0
Administrators: 0
Other: 0

Discussion questions:

This discussion guide is intended to be semi-structured. Evaluators may add probes or additional questions based on the direction of the focus group or key-informant interview. Not all questions may be asked at every discussion.

[Start audio-recorder]

1. In your work, what are some of the barriers or challenges you face in newborn resuscitation and the retention of newborn resuscitation knowledge and skills?

Shortage of resources
Shortage of staff eg few staffs on duty results to no proper attention
Equipment shortage;penguin sucker are not in some facilities

2. Does the AIR device help overcome any of these barriers and challenges? If so, in which way?
   No!
   Problems and challenges in any facility is on human resource.it is not related to air device
   Air study only supplied only one extra resuscitation device which was still not enough

3. In your work, what are some of the facilitators or things that make things easier for newborn resuscitation and the retention of newborn resuscitation knowledge and skills?
   Their Continuous practice.
   Knowledge and skills from training also helped a lot,
   Positive attitude from the participants.this improved confidence as well.
   Availability HBB corner.
   Presence of air device corner helped the officer know he/she did right or wrong.

4. What did you LIKE about the AIR device? What worked well.
   The feedback from the device can tell how one is doing the practice including the number of practice sessions hence an objective way to asses once practice level.

5. What did you DISLIKE about the AIR device? What didn't work well?
   I had no issue about the device.

6. What challenges did you have in using the AIR device?
   There are incidences where they did practice but the data was not stored I the phone despite paring the device with AIR app.

7. What would you suggest we change to make the AIR device even more useful?
   The time should be integrated into the AIR device.

8. Do you feel that the AIR device is easy to learn and use? Why or why not?
   Participant noted the she had an easy time learning hoe to use the device and had no particular difficulties in subsequent sessions.

9. Do you think the AIR device improved your resuscitation skills? Why or why not?
   Yes !
   Initially the participant was resuscitating blindly without being able to tell if there was a connection the process.
   With the device the displayed feedback helped to improve skills of resuscitation which the participant translated to real babies.
   Continuous practice made the participants to be well accustomed to the resuscitation procedure.

10. Do you think the AIR device can help with quality improvement efforts at your facility? In which way?
    Yes!
    Ones the staff obtained training in helping babies' breath the number of documented neonatal deaths drastically reduced to zero in the las two months preceding this interview. This is largely attributed to the improved quality of neonatal resuscitation in the facility due to continuous practice with the AIR device.

11. Do you see any barriers or challenges to implementing the AIR device for healthcare worker training in your country?
    Poor Internet connection In Some Areas
    If the training is to be implemented by the government by the government it may face financial challenges.
    Security of the equipment in the facilities may be a challenge in some areas.

12. Do you see any barriers or challenges to eventually implementing the AIR device for clinical care in your country?
    If the programme is to be implemented by the government it may face service hurdles i.e lack of funding,poor maintenance,lack of commodities.

13. Any other suggestions or comments about your experience with the AIR device?
    Staff in the facilities are easier to have the device eventually employed in clinical cares to use the AIR device on resuscitation of actual babies
    Need to have all necessary resuscitation equipment in the facilities to enable staff to carry out resuscitation
    Other staff even those not in maternity be considered for training given that they work in the facilities on a rotational basis
    The training to be attended to other cadres including clinical officers and medical officers
    The participant appreciates the study for the knowledge and skills impacted on them.

Thank for your time!

KII Nº : 5

AIR STUDY KEY INFORMANT INTERVIEWS

DATE: 21/11/2023
LOCATION OF DISCUSSION: AIR STUDY PI'S OFFICE – ALUPE
NUMBER FACILITATOR(S) CONDUCTING DISCUSSION: 2
NUMBER AND CARDRE OR PARTICIPANTS:

NURSES (1)
MIDWIVES (0)
DOCTORS (0)
ADMINISTRATORS (0)
OTHER (0)

DISCUSSION QUESTIONS

1. **IN YOUR WORK, WHAT ARE SOME OF THE BARRIERS OR CHALLENGES YOU FACE IN NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Lack of resuscitation equipment/commodities e.g., face masks, obsolete resuscitaire etc
   Inadequate knowledge and skills of staff
   Some staff do not have the self-drive to practice
   Staff shortage hence no readily available assistants to provide help
2. **DOES THE AIR DEVICE HELP OVERCOME ANY OF THESE BARRIERS AND CHALLENGES? IF SO, IN WHICH WAY?**
   Yes
   With the device people could detect their weaknesses from the visual feedback provided by the icons and to improve
   The training and practice sessions helped to instill confidence among the staff thereby improving their ventilation skills
   Alongside deployment of AIR study materials, the facility got support towards newborn resuscitation through donation of equipment e.g., Ambu bag, penguin sucker etc
   The positive feedback while practicing with the AIR device helps to motivate staff to change their attitude towards newborn resuscitation
3. **IN YOUR WORK, WHAT ARE SOME OF THE FACILITATORS OR THINGS THAT MAKE THINGS EASIER FOR NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Availability of trained and knowledgeable staff
   Availability of minimum equipment to carry out resuscitation of newborns
   Frequent practice sessions with the AIR device enable retention of newborn resuscitation knowledge and skills
4. **WHAT DID YOU LIKE ABOUT THE AIR DEVICE? WHAT WORKED WELL?**
   The device was able to give feedback on quality of ventilation i.e., rate of ventilation, airway patency, mask seal
   The participants were able to adjust their ventilation based on the feedback from the AIR device

5. **WHAT DID YOU DISLIKE ABOUT THE AIR DEVICE? WHAT DIDN'T WORK WELL?**
   The AIR device was bulky
   The device cannot be charged during blackouts
   The device developed a hitch at some point in the study where it was persistently blinking red hence participants were unable to get the actual feedback
6. **WHAT CHALLENGES DID YOU HAVE IN USING THE AIR DEVICE?**
   Some staff had difficulty in pairing the AIR device with the AIR application
7. **WHAT WOULD YOU SUGGEST WE CHANGE TO MAKE THE DEVICE EVEN MORE USEFUL?**
   Make the device smaller
   Incorporate text feedback along the coloured coded icons
   The device should also be solar powered so that it can be charged in the sun in areas without electricity
   Dy cells can be considered as an alternative source of power
   A timer should be integrated into the AIR device instead of a standalone timer
8. **DO YOU FIND THAT THE AIR DEVICE IS EASY TO LEARN AND USE? WHY OR WHY NOT?**
   Yes
   The device is self-explanatory
   Images/icons on the AIR device are easy to understand and interpret

9. **DO YOU THINK THE AIR DEVICE IMPROVED YOUR RESUSCITATION SKILLS? WHY OR WHY NOT**?
   Yes
   The device was able to give real-time feedback on ventilation which helped to improve skills by encouraging participants to adjust their ventilation accordingly
   Consistent practice with the AIR device helped to sharpen the ventilation skills
10. **DO YOU THINK THE AIR DEVICE CAN HELP WITH QUALITY IMPROVEMENT EFFORTS AT YOUR FACILITY? IN WHICH WAY?**
    Yes
    The AIR device helps to build confidence in staff which enables them to resuscitate effectively thereby achieving better outcomes such as reduced neonatal mortalities
11. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO IMPLEMENTING THE AIR DEVICE FOR HEALTHCARE WORKER TRAINING IN YOUR COUNTRY?**
    Yes
    Staff shortage will impair availability of staff for training
    Departmental in charges attend trainings but are not hands-on when it comes to the actual resuscitation of babies in the facilities
    Some healthcare workers may have negative attitude towards the training
    Transport to some areas may be difficult hence inaccessibility
    Insecurity threats in banditry prone areas
12. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO EVENTUALLY IMPLEMENTING THE AIR DEVICE FOR CLINICAL CARE IN YOUR COUNTRY?**
    Yes

Lack of electricity/power blackouts in some areas
Technical hitches may impair usage of the device
Inadequate commodities e.g., face masks, oxygen etc for resuscitation
Procurement of substandard equipment or imitations which may be unreliable
Inadequate funds

13. **ANY OTHER SUGGESTIONS OR COMMENTS ABOUT YOUR EXPERIENCE WITH THE AIR DEVICE.**

The AIR device is good and helps to improve outcomes in neonatal resuscitation and should therefore be implemented in clinical care

KII Nº :4

AIR STUDY KEY INFORMANT INTERVIEWS
DATE: 21/11/2023
LOCATION OF DISCUSSION: AIR STUDY PI'S OFFICE – ALUPE
NUMBER OF FACILITATOR(S) CONDUCTING DISCUSSION: 2
NUMBER AND CARDRE OR PARTICIPANTS:

NURSES (1)
MIDWIVES (0)
DOCTORS (0)
ADMINISTRATORS (0)
OTHER (0)

DISCUSSION QUESTIONS

1. **IN YOUR WORK, WHAT ARE SOME OF THE BARRIERS OR CHALLENGES YOU FACE IN NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Inadequate knowledge and skills of newborn resuscitation
   Inadequate/lack of resuscitation equipment
   Inadequate staff hence no one available to offer help in case of need
   Poor network connectivity makes it difficult to practice with the AIR device frequently
   High workload on a few staff hence they cannot afford to find time to practice frequently thereby losing the skills overtime.
2. **DOES THE AIR DEVICE HELP OVERCOME ANY OF THESE BARRIERS AND CHALLENGES? IF SO, IN WHICH WAY**?
   Yes
   The AIR device helped to improve resuscitation through providing feedback.
   The practice sessions with the AIR device helped to improve the knowledge and skills which were then translated into resuscitation of real babies.
3. **IN YOUR WORK, WHAT ARE SOME OF THE FACILITATORS OR THINGS THAT MAKE THINGS EASIER FOR NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Availability of equipment i.e., resuscitaire, Ambu bag, penguin sucker
   Availability of staff who had been trained on Helping Babies Breathe and have been practicing with the AIR devices
   Other staff in the facility are also interested in learning newborn resuscitation due to the inspiration they get from those who had been trained
   The support staff have also been sensitized to be able to offer some help especially at night by being taught the location of the resuscitation equipment
4. **WHAT DID YOU LIKE ABOUT THE AIR DEVICE? WHAT WORKED WELL?**
   The device was able to provide visual feedback on ventilation through the icons
   The device was easy to connect to the phone via Bluetooth
   The device together with the face mask and Ambu bag was easy to assemble
5. **WHAT DID YOU DISLIKE ABOUT THE AIR DEVICE? WHAT DIDN'T WORK WELL?**
   The AIR device was bulky.
6. **WHAT CHALLENGES DID YOU HAVE IN USING THE AIR DEVICE?**

Initially, it was difficult to connect the AIR device to the AIR application via Bluetooth due to unfamiliarity

Poor internet connectivity at the facility made it difficult to have stable internet connectivity with the AIR application

Inadequate time for practice due to overwhelming work for the few staff on duty

7. **WHAT WOULD YOU SUGGEST WE CHANGE TO MAKE THE DEVICE EVEN MORE USEFUL?**

   The device should be made smaller and lighter.

   The device should be integrated with a timer that starts to count automatically the moment one begins to ventilate thereby offsetting the need for an assistant to provide timing

   This will also help incase one forgets to start the timer

8. **DO YOU FIND THAT THE AIR DEVICE IS EASY TO LEARN AND USE? WHY OR WHY NOT?**

   Yes

   It was giving visual feedback which one could easily understand and respond to appropriately

   The process of connecting the AIR device to the AIR application was easy to learn over time once one became accustomed to the device

9. **DO YOU THINK THE AIR DEVICE IMPROVED YOUR RESUSCITATION SKILLS? WHY OR WHY NOT**?

   Yes

   It helped to build confidence in newborn resuscitation through the Helping Babies Breathe training and practice sessions which have improved the resuscitation skills over time

   The real-time feedback from the device helped the participants to modify their ventilation appropriately

10. **DO YOU THINK THE AIR DEVICE CAN HELP WITH QUALITY IMPROVEMENT EFFORTS AT YOUR FACILITY? IN WHICH WAY?**

    Yes

    If used in resuscitation, the outcomes are likely to be better given that the healthcare workers will be able to tell if they resuscitating correctly.

    The participant notes that the facility has noted improved outcomes of babies with respiratory problems e.g., due to birth asphyxia since the deployment of the AIR device

11. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO IMPLEMENTING THE AIR DEVICE FOR HEALTHCARE WORKER TRAINING IN YOUR COUNTRY?**

    Yes

    Time for training. Inadequate staffing in the facilities hence difficulty in attending trainings.

    Resistance from some healthcare workers and community members

    Insecurity in hostile areas may hinder access and negatively impact the safety of training and equipment in the facilities

12. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO EVENTUALLY IMPLEMENTING THE AIR DEVICE FOR CLINICAL CARE IN YOUR COUNTRY?**

    Yes

    Some staff may lack knowledge of connecting the AIR device and the AIR application

    Maintenance of the devices may bear cost implications

Power outages may make it difficult to have the devices charged throughout
Some staff may find the additional responsibility of operating the AIR devices cumbersome
Funding constraints may impact the supplies/replacement of faulty devices
Mismanagement of funds

13. **ANY OTHER SUGGESTIONS OR COMMENTS ABOUT YOUR EXPERIENCE WITH THE AIR DEVICE.**

The AIR device is good
It should be made smaller and lighter
The device should have an alternative source of power e.g., dry cells
The rechargeable battery should have capacity to store power for much longer periods

KII N<u>O</u>: 3

AIR STUDY KEY INFORMANT INTERVIEWS

DATE: 21/11/2023
LOCATION OF DISCUSSION: AIR STUDY PI'S OFFICE – ALUPE
NUMBER OF FACILITATOR(S) CONDUCTING DISCUSSION: 2
NUMBER AND CARDRE OR PARTICIPANTS:

NURSES (1)
MIDWIVES (0)
DOCTORS (0)
ADMINISTRATORS (0)
OTHER (0)

<u>DISCUSSION QUESTIONS</u>

1. **IN YOUR WORK, WHAT ARE SOME OF THE BARRIERS OR CHALLENGES YOU FACE IN NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Attitude of staff towards newborn resuscitation is wanting. Less frequent practice sessions. Knowledge gap among staff in the facility. Majority of staff in the facility are not well versed with newborn resuscitation knowledge and skills.
   Some staff do not carry out prompt neonatal resuscitation leading to poor outcomes at times.
   Inadequate staffing. You require an assistant while using the AIR device during ventilation to assist with timing.
   Frequent blackouts/lack of back up source of power. Makes it impossible to use oxygen concentrators.
   Participants states that it would be if hospitals had alternative sources of power especially in the maternity department.
   Inadequate/lack of oxygen supply
   Inadequate resuscitation equipment
   Inefficient referral system – lack of fuel for ambulances, lack of ambulances hence delayed referrals with poor outcomes
   Inadequate funds for daily operations
   Lack of proper maintenance of resuscitation equipment
2. **DOES THE AIR DEVICE HELP OVERCOME ANY OF THESE BARRIERS AND CHALLENGES? IF SO, IN WHICH WAY**?
   Yes
   The AIR device helped to improve the quality of ventilation given that staff could be able to get real-time feedback on the quality of ventilation. Hence, they could be able to adjust the rate ventilation, apply the mask firmly, maintain a patent airway and to apply gentle breaths.
   Training and frequent practice helped to reinforce the knowledge and skills of newborn resuscitation
   The participants really appreciated visual learning as they were now able to easily learn and to retain the knowledge and skills.

3. **IN YOUR WORK, WHAT ARE SOME OF THE FACILITATORS OR THINGS THAT MAKE THINGS EASIER FOR NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Availability of equipment i.e., resuscitaire, Ambu bag, penguin sucker, oxygen concentrator
   Support from partners e.g., donations of resuscitation equipment from the AIR study
   Possible to find help from colleagues during the day
   Majority of staff in the maternity department were trained on neonatal resuscitation
4. **WHAT DID YOU LIKE ABOUT THE AIR DEVICE? WHAT WORKED WELL?**
   Able to get real-time feedback hence can modify ventilation accordingly
   Fairly easy to assemble the face mask, Ambu bag to the AIR device
5. **WHAT DID YOU DISLIKE ABOUT THE AIR DEVICE? WHAT DIDN'T WORK WELL?**
   The device is a little bit heavy hence may interfere with the alignment/placement of the face mask
   It is cumbersome to operate the AIR device manually
   Th device requires stable internet connectivity to transmit data hence may be difficult to use in areas with poor internet connection
6. **WHAT CHALLENGES DID YOU HAVE IN USING THE AIR DEVICE?**
   Sometimes there was leakage at the point of connection of the AIR device to a different Ambu bag apart from the ones provided by the AIR study
7. **WHAT WOULD YOU SUGGEST WE CHANGE TO MAKE THE DEVICE EVEN MORE USEFUL?**
   The device to be made lighter and smaller
   The Ambu bag and the AIR device should be integrated as a single equipment
   The device should have an inbuilt timer so that an individual can time and operate it independently
   The AIR device should be automated to pair with the AIR application automatically thereby alleviating the need to manually turn on Bluetooth connection then pairing
   The device should have long lasting batteries for use in areas without electric power
8. **DO YOU FIND THAT THE AIR DEVICE IS EASY TO LEARN AND USE? WHY OR WHY NOT?**
   Yes
   Visual learning. It is easy to learn when one is seeing the actual feedback which reinforces retention of skills through positive feedback
   Easy and simple to interpret the visual feedback from the device's icons
9. **DO YOU THINK THE AIR DEVICE IMPROVED YOUR RESUSCITATION SKILLS? WHY OR WHY NOT**?
   Yes
   Initially, participants were unable to tell whether they were ventilating well. However, with feedback from the AIR device; they have been able to improve on their resuscitation.
   The participant was keen on initiating effective ventilation within the golden minute
   The practice sessions made the newborn resuscitation skills to improve remarkably
10. **DO YOU THINK THE AIR DEVICE CAN HELP WITH QUALITY IMPROVEMENT EFFORTS AT YOUR FACILITY? IN WHICH WAY?**
    Yes

Staff in the hospital will be able to see the mistakes and rectify them immediately
Participants note that they will be able to assess neonatal resuscitation outcomes
Improve neonatal resuscitation outcomes from resuscitation of babies with birth asphyxia by staff who underwent the training
The participants were able to practice frequently with the AIR device and to maintain/improve on their skills

11. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO IMPLEMENTING THE AIR DEVICE FOR HEALTHCARE WORKER TRAINING IN YOUR COUNTRY?**
Yes
Funding. Equipment will need to be deployed in all facilities across the country. Maintenance of the equipment may be a challenge.
Staff attitude. Some staff may be reluctant to participate in the training especially due to interdepartmental transfers.
Inadequate staffing
Insecurity in far flung regions may hinder access to offer training to HCWs in hostile areas
12. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO EVENTUALLY IMPLEMENTING THE AIR DEVICE FOR CLINICAL CARE IN YOUR COUNTRY?**
Yes
Government inertia. The government may be reluctant to train HCWs and to deploy the devices.
Corruption. The government may deploy substandard equipment if left to handle the procurement of AIR devices.
Undue interference from the government on partners may interfere with the execution of the program.
Inadequate funds. Overreliance on partners is unsustainable.
Maintenance of the devices may be costly.
Poor working environment which demotivates healthcare workers may discourage them from embracing additional tasks.
13. **ANY OTHER SUGGESTIONS OR COMMENTS ABOUT YOUR EXPERIENCE WITH THE AIR DEVICE.**
The AIR device should be available in the facilities for continuous practice
Continuous support from the AIR study to the facilities

KII Nº : 2

AIR STUDY KEY INFORMANT INTERVIEWS

DATE: 20/11/2023
LOCATION OF DISCUSSION: AIR STUDY PI'S OFFICE – ALUPE
NUMBER OF FACILITATOR(S) CONDUCTING DISCUSSION: 2
NUMBER AND CARDRE OR PARTICIPANTS:

NURSES (1)
MIDWIVES (0)
DOCTORS (0)
ADMINISTRATORS (0)
OTHER (0)

DISCUSSION QUESTIONS

1. **IN YOUR WORK, WHAT ARE SOME OF THE BARRIERS OR CHALLENGES YOU FACE IN NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Inadequate staff like having only one staff on duty
   Frequent power blackouts hence difficulty maintaining warmth. Some mothers also cannot afford to buy dry towels.
   Delays in initiating ventilation
   Poor preparedness. The resuscitation equipment may not be readily arranged for emergency use.
   No identifiable barriers/challenges to retention of newborn resuscitation knowledge and skills.
2. **DOES THE AIR DEVICE HELP OVERCOME ANY OF THESE BARRIERS AND CHALLENGES? IF SO, IN WHICH WAY**?
   Yes
   The AIR device gave feedback on quality of ventilation hence participants were able to adjust their ventilation accordingly.
   The AIR device enabled staff to build confidence while applying the acquired skills on actual babies.
   There was improved neonatal outcomes as a result of reduced neonatal deaths.

3. **IN YOUR WORK, WHAT ARE SOME OF THE FACILITATORS OR THINGS THAT MAKE THINGS EASIER FOR NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Teamwork among staff
   Periodic reminders to individual participants to carry out practice with the AIR device
   Whenever participants got feedback from the AIR device, they got encouraged to practice more often
   Availability of adequate neonatal resuscitation equipment in the workplace in some places
   All the staff in the maternity department acquired training on newborn resuscitation hence enough skilled personnel
4. **WHAT DID YOU LIKE ABOUT THE AIR DEVICE? WHAT WORKED WELL?**

The AIR device demonstrated feedback on the quality of ventilation
The participant was able to know the rate of ventilation each time she used the device

5. **WHAT DID YOU DISLIKE ABOUT THE AIR DEVICE? WHAT DIDN'T WORK WELL?**
   The device needs to be charged hence one cannot use when not charged
   The device developed problems at some point where it consistently failed to pair via Bluetooth with the AIR app. The indicator icons were also blinking unusually.
   The device is a bit heavy, hence the participant got tired after sometime of using it
   Some participants found it hard to pair the AIR device with the AIR app
6. **WHAT CHALLENGES DID YOU HAVE IN USING THE AIR DEVICE?**
   Some participants were bagging without pairing the device to the AIR application only to realise at the end of the session where the session has not been saved.
   The AIR device abruptly shutting down while ventilating at some point
   The AIR device blinking other different colours apart from RED and GREEN without a known interpretation.
7. **WHAT WOULD YOU SUGGEST WE CHANGE TO MAKE THE DEVICE EVEN MORE USEFUL?**
   To make the device smaller and lighter
   The AIR device should be able to automatically pair with the AIR application when put on
8. **DO YOU FIND THAT THE AIR DEVICE IS EASY TO LEARN AND USE? WHY OR WHY NOT?**
   The AIR device was a little bit easy to use
   Being heavy, one had to take some time to learn how to properly position the device connected to the face mask and Ambu bag on the manikin
   Initially participants faced a challenge in connecting the AIR device to the AIR application but this got better with time
9. **DO YOU THINK THE AIR DEVICE IMPROVED YOUR RESUSCITATION SKILLS? WHY OR WHY NOT**?
   Yes
   It acted as a refresher training and helped to improve on the skills and knowledge acquired from the previous Helping Babies Breathe training
   Helped to build confidence in neonatal resuscitation
10. **DO YOU THINK THE AIR DEVICE CAN HELP WITH QUALITY IMPROVEMENT EFFORTS AT YOUR FACILITY? IN WHICH WAY?**
    The AIR device improved neonatal resuscitation outcomes
    The AIR device to be permanently placed in the facilities for continuous practice so as to enable retention of newborn resuscitation knowledge and skills
11. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO IMPLEMENTING THE AIR DEVICE FOR HEALTHCARE WORKER TRAINING IN YOUR COUNTRY?**
    Inadequate AIR devices for all facilities in the country
    The trainers for newborn resuscitation using the AIR device may not be adequate for the whole country
    Understaffing in the workplace may impair the availability of have staff attending the training
    Inadequate funds to acquire the AIR devices and resuscitation equipment

12. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO EVENTUALLY IMPLEMENTING THE AIR DEVICE FOR CLINICAL CARE IN YOUR COUNTRY?**

    Maintenance of the devices to ensure functionality throughout may be a challenge
    Frequent power black outs may affect charging of the AIR devices

13. **ANY OTHER SUGGESTIONS OR COMMENTS ABOUT YOUR EXPERIENCE WITH THE AIR DEVICE.**

    The AIR device is good
    The AIR device to be placed in the facilities for continuous practice and training
    The AIR device helps to save babies
    The device should be able to use dry cells(batteries) alongside being rechargeable for use in areas without electricity and those with frequent power black outs
    The AIR device should be deployed not only in Busia but also other counties so that they may also realise the benefits.

KII Nº :1

DATE: 20/11/2023
LOCATION OF DISCUSSION: AIR STUDY PI'S OFFICE – ALUPE
NUMBER OF FACILITATOR(S) CONDUCTING DISCUSSION: 2
NUMBER AND CARDRE OR PARTICIPANTS:

NURSES (1)
MIDWIVES (0)
DOCTORS (0)
ADMINISTRATORS (0)
OTHER (0)

DISCUSSION QUESTIONS

1. **IN YOUR WORK, WHAT ARE SOME OF THE BARRIERS OR CHALLENGES YOU FACE IN NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Lack of resources / inadequate equipment e.g., Ambu bag, section devices
   The participant notes that the devices in use at the facility currently are those donated by the study. Their facility needs at least 3-4 Ambu bag in maternity against the current 2.
   Lack of skilled providers as most staff learn on the job.
   Provider attitudes. Some HCWs have a negative attitude.
   Staff shortage and frequent burnouts. Inadequate time to practice especially when a single staff is on duty.
   Lack of self-drive and commitment to practice.
2. **DOES THE AIR DEVICE HELP OVERCOME ANY OF THESE BARRIERS AND CHALLENGES? IF SO, IN WHICH WAY**?
   Yes
   The device alerts participants when not ventilating properly hence able to adjust accordingly.
3. **IN YOUR WORK, WHAT ARE SOME OF THE FACILITATORS OR THINGS THAT MAKE THINGS EASIER FOR NEWBORN RESUSCITATION AND THE RETENTION OF NEWBORN RESUSCITATION KNOWLEDGE AND SKILLS?**
   Availability of a resuscitaire.
   Job aids and standard operating procedures/guidelines
   Assistants are available in case one needs help
   A few equipment for use in resuscitation are available e.g., Ambu bag, penguin sucker
   Carrying out continuous practice and helping train other staff who did not take part in the HBB training
   Continuous medical education sessions on newborn resuscitation
4. **WHAT DID YOU LIKE ABOUT THE AIR DEVICE? WHAT WORKED WELL?**
   It is easy to fix, not complicated
   Stores power for a long duration
   Participants are able to get feedback from the AIR app on the practice sessions i.e., quality of ventilation (time to 1st effective ventilation, leakage etc.)
5. **WHAT DID YOU DISLIKE ABOUT THE AIR DEVICE? WHAT DIDN'T WORK WELL?**

When one does not connect the AIR device to the AIR app then they are unable to get feedback at the end of the practice session.

6. **WHAT CHALLENGES DID YOU HAVE IN USING THE AIR DEVICE?**
   No reports of problems noted or reported from the use the device during the practice sessions.
7. **WHAT WOULD YOU SUGGEST WE CHANGE TO MAKE THE DEVICE EVEN MORE USEFUL?**
   The device to be made in such a way that it can be used without having to pair it with the AIR app.
   Integrate a timer into the device.
8. **DO YOU FIND THAT THE AIR DEVICE IS EASY TO LEARN AND USE? WHY OR WHY NOT?**
   Yes
   Fast learning of how to use the device after the training.
   Individuals who were not trained initially also easily learnt how to use the device from the guidance of the AIR study participants.
9. **DO YOU THINK THE AIR DEVICE IMPROVED YOUR RESUSCITATION SKILLS? WHY OR WHY NOT**?
   Yes
   The participants noted that their resuscitation skills got better given that they were able to consider all the aspects of ventilation i.e., chest rise, seal of the mask, airway positioning, time to first effective ventilation etc.
   Participants were able to quickly establish effective ventilation with a view to achieving first effective ventilation within the first 5 seconds.
   Participants were learnt how to give gentle breaths.
10. **DO YOU THINK THE AIR DEVICE CAN HELP WITH QUALITY IMPROVEMENT EFFORTS AT YOUR FACILITY? IN WHICH WAY?**
    Yes
    Reduced neonatal deaths due to skills acquired from using the AIR device in resuscitation practice.
    The staff at work will be more skilled.
11. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO IMPLEMENTING THE AIR DEVICE FOR HEALTHCARE WORKER TRAINING IN YOUR COUNTRY?**
    Yes
    Inadequate devices due to misappropriation or embezzlement of funds meant for AIR devices.
    Sustainability. Participants noted that there are other projects that had been initiated and stalled along the way and the program may face a similar problem.
    Some healthcare workers may be unwilling to use the device due to negative attitude.
    Inadequate skilled personnel/trainers to carry out the training across the country.
12. **DO YOU SEE ANY BARRIERS OR CHALLENGES TO EVENTUALLY IMPLEMENTING THE AIR DEVICE FOR CLINICAL CARE IN YOUR COUNTRY?**
    Yes
    Staff shortage. Lack of enough skilled personnel on newborn resuscitation.
    Inadequate AIR devices.

Maintenance of the AIR devices i.e., repairs, replacement of spoilt devices etc.
The cost of acquiring the devices may be expensive.

13. **ANY OTHER SUGGESTIONS OR COMMENTS ABOUT YOUR EXPERIENCE WITH THE AIR DEVICE.**
The AIR device should be implemented in clinical care.

FGD Nº : 3

AUGMENTED INFANT RESUSCITATOR (AIR): TRANSITIONING A NOVEL BEHAVIOR CHANGE INNOVATION TO DRIVE NEWBORN VENTILATION SKILLS ENHANCEMENT

KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS QUESTIONNAIRE AND CONSENT FORM

Semi-structured focus group discussions and key-informant interviews

Notes: Participants will have provided written informed consent to potentially participate in focus group discussions (FGDs) or key-informant interviews (KIIs), associated with this study, prior to their participation in the overall study. Because the FGDs and KIIs will occur approximately 5 to 6 months later, we will also obtain a second, verbal informed consent from participants to acknowledge their voluntary participation in the FGDs or KIIs. To be read to all participants:

Facilitator: The purpose of our discussion today is for us to understand your experiences with the Augmented Infant Resuscitator – or AIR – device. The purpose of this discussion is to understand what worked and what needs to be improved.

Participating in this discussion is completely voluntary. Deciding whether or not to answer these questions will not affect your position in any way and will not be included in any evaluations of your individual performance. Whatever responses you provide in this discussion will remain completely anonymous.

So that we don't miss anything during our discussion, we would like to audio-record this discussion.

Do you have any questions?

Do you agree to participate?

1. Today's date: 24/11/2023

2. Location of discussion: AIR STUDY PIs OFFICE

3. Number of Facilitator(s) conducting discussion: 2

F. Number and cadre of participants:

Nurses: 6
Midwives: 0
Doctors: 0
Administrators: 0
Other: 0

Discussion questions:

This discussion guide is intended to be semi-structured. Evaluators may add probes or additional questions based on the direction of the focus group or key-informant interview. Not all questions may be asked at every discussion.

[Start audio-recorder]

1. In your work, what are some of the barriers or challenges you face in newborn resuscitation and the retention of newborn resuscitation knowledge and skills?

Defective equipment for resuscitation e.g. Ambu bag
Lack of resuscitation equipment's.
Skills and knowledge gap. Some staffs lack knowledge and skills on new resuscitation skills
Under-staffing. No one to offer help in times of competing emergencies.
Lack of practice as a result of interdepartmental transfers, workload, lack of resuscitation equipment and poor staff attitude.
Lack of confidence. Some staffs do not feel confident enough to carry out newborn resuscitation.

2. Does the AIR device help overcome any of these barriers and challenges? If so, in which way?

Yes!
The device gives feedback which helps to build confidence in newborn resuscitation among health workers.
The device gives Real-time feedback on quality of ventilation which helps health workers to correct their mistakes during ventilation.
Timing while using the air device helps to keep time while carrying out newborn resuscitation.
Health workers acquired knowledge and skills during helping baby's breath training.
The AIR device is deployed alongside face masks, suction device and Ambu bag. The health workers can use these equipment's for practice in newborn resuscitation.
Positive feedback from the Realtime feedback motivates health workers to continue practicing.
Anyone in the hospital can use the AIR device at the HBB corner for practice which helps in skills retention.
Use of the device in newborn resuscitation ensures that health workers archive effective ventilation within the shortest time unlike before when they were carrying out resuscitation blindly.

3. In your work, what are some of the facilitators or things that make things easier for newborn resuscitation and the retention of newborn resuscitation knowledge and skills?

Continuous medical education on newborn resuscitation.
Availability of reference material for example charts, action plan etc.

Practice sessions with the air device.
Participation in trainings on newborn resuscitation e.g helping baby's breath.
Availability of resuscitation area in the facility.
Availability of functional resuscitation equipment in some facilities.
Preparedness for newborn resuscitation.
Proper coordination among different departments to carry out successful newborn resuscitation.

4. What did you LIKE about the AIR device? What worked well?

It is easy to detect the colors from the icons (AIR).
It is potable.
Its light. Soo easy to carry.
It easy to connect to the AIR app, face mask / Ambu bag.
It is able to give real-time feedback.
The green lights give confidence on what one is doing.
It is able to show battery capacity.
Has Bluetooth connectivity.
Easy to interpret the feedback from the illustrations.

5. What did you DISLIKE about the AIR device? What didn't work well?

Initially the device was abruptly disconnecting from the AIR app recording no data.
At some point the device capped the number of daily practice sessions to a certain limit and could not store more sessions.
The device requires internet connectivity.

6. What challenges did you have in using the AIR device?

In some instances, the mask came off the device while doing ventilations.
Power could go off sometimes when doing ventilations.
At some point the Bluetooth was disconnecting randomly and also taking long to pair with the AIR app.
Some phones were not connecting to the AIR device e.g iPhones and some android phones.

7. What would you suggest we change to make the AIR device even more useful?

The AIR device to have interchangeable interface for both neonate and adult resuscitation.
The device should be made in such a way that it does not have to rely on internet connectivity.

8. Do you feel that the AIR device is easy to learn and use? Why or why not?

Yes!
It gives real-time feedback which directs the health workers on what to do during ventilation
It is easy to assemble the AIR device face mask am\and Ambu bag.
With knowledge acquired during training one can easily use the device.
The icons giving feedback on the device are self-explanatory.

No!
You require several practice sessions to learn how to use the device perfectly.

9. Do you think the AIR device improved your resuscitation skills? Why or why not?

Yes!
The AIR device was giving feedback which has helped in improvements of resuscitation skills.
The training acquired during resuscitation HBB training with the device has enabled Health workers to apply the skills even in real life situation.
Health workers have learnt how to correctly position the mask, position the baby and to carry out proper ventilation.
Unlike in the past the health workers could give hash and hyperventilate but with the AIR device they learnt to ventilate within the required rate and give gentle breaths.
Heath workers acquired training which improved their skills through practice with the AIR device.
This is evidenced by performing better in the post tests as compared to pretest.
The device has encouraged health workers to practice ventilation more unlike before.

10. Do you think the AIR device can help with quality improvement efforts at your facility? In which way?

Yes!
The health workers will use the acquired skills leading to reduce neonatal deaths.
One can use the device even when alone given that they would be able to know what they are doing.

11. Do you see any barriers or challenges to implementing the AIR device for healthcare worker training in your country?

Attitude. Some heath workers may not be ready to be trained. some staffs may not be receptive of new updates.
Some heath workers may not finish the training. Or register for the raining but fail to attend.
Myths and misconceptions around the use of the device among health workers or community.
Political interference.
Discrimination selection of participants to attend training.
Insecurity threats in certain parts of the country hence difficulty in accessing some training sites.
Power outages, lack of electricity or solar to power the AIR device.
Adverse weather conditions e.g floods.

12. Do you see any barriers or challenges to eventually implementing the AIR device for clinical care in your country?

Corruption in procurement of resuscitation equipment e.g AIR device.
Heath workers may initially be resistant to the use of AIR device.
Facilities with staffs not trained on use of the AIR device will not use the AIR devices in clinical care.
Some health workers may lack interest in use of the AIR device despite training.
Poor management of resuscitation equipment at the facilities hence theft.
Mishandling of the AIR device by reckless staff may lead to damages.
Lack of facilitation in terms of data bundles hence poor internet connection.

13. Any other suggestions or comments about your experience with the AIR device?

Had a good experience with the AIR device would it be used in actual babies?
The participants acquired knowledge and skills and newborn resuscitation with the use of the device.

With the frequent practice the health workers got motivated.
Restore the AIR device to the facilities for continuous training.
Refresher trainings and training of other staffs not involved in the study.
A timer should be integrated into the air device which starts automatically you begin ventilation.
Provide timers for use during ventilation.
Options for use of dry cells on areas without electricity.

Thank you for your time!!

FGD Nº :2

AUGMENTED INFANT RESUSCITATOR (AIR): TRANSITIONING A NOVEL BEHAVIOR CHANGE INNOVATION TO DRIVE NEWBORN VENTILATION SKILLS ENHANCEMENT

KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS QUESTIONNAIRE AND CONSENT FORM

Semi-structured focus group discussions and key-informant interviews

Notes: Participants will have provided written informed consent to potentially participate in focus group discussions (FGDs) or key-informant interviews (KIIs), associated with this study, prior to their participation in the overall study. Because the FGDs and KIIs will occur approximately 5 to 6 months later, we will also obtain a second, verbal informed consent from participants to acknowledge their voluntary participation in the FGDs or KIIs. To be read to all participants:

Facilitator: The purpose of our discussion today is for us to understand your experiences with the Augmented Infant Resuscitator – or AIR – device. The purpose of this discussion is to understand what worked and what needs to be improved.

Participating in this discussion is completely voluntary. Deciding whether or not to answer these questions will not affect your position in any way and will not be included in any evaluations of your individual performance. Whatever responses you provide in this discussion will remain completely anonymous.

So that we don't miss anything during our discussion, we would like to audio-record this discussion.

Do you have any questions?

Do you agree to participate?

1. Today's date: 24/11/2023

2. Location of discussion: AIR STUDY PIs OFFICE ALUPE

3. Number of Facilitator(s) conducting discussion: 2

F. Number and cadre of participants:

Nurses: 5
Midwives: 0
Doctors: 0
Administrators: 0
Other: 0

Discussion questions:

This discussion guide is intended to be semi-structured. Evaluators may add probes or additional questions based on the direction of the focus group or key-informant interview. Not all questions may be asked at every discussion.

[Start audio-recorder]

1. In your work, what are some of the barriers or challenges you face in newborn resuscitation and the retention of newborn resuscitation knowledge and skills?
   Busy schedule at work makes it difficult to conduct on job training to untrained staff
   Lack of knowledge in some staff i.e some staffs have not been trained on HBB
   Inadequate equipment
   Under-staffing.one staff finds it difficult to handle two emergencies at the same time e.g PPH and neonate
   Referral systems are poor. Ambulance take time to reach the peripheral facilities to complete referral.
   Infection prevention protocols are hard to follow where more than one baby is supposed to use the mask at the same time.
   Lack of delivery equipment e.g when a baby e.g when the baby is required to be disconnected from the mother by cutting the cord.

2. Does the AIR device help overcome any of these barriers and challenges? If so, in which way?
   Yes!
   Training about HBB and AIR device helped to instill skills in staff.
   Improved skills since the device gives real-time feedback during ventilation.
   Equipment's were supplied together with AIR device e.g facilities were supplied with ventilation equipment.
   Need for referral was reduced since staffs were equipped with resuscitation skills.

3. In your work, what are some of the facilitators or things that make things easier for newborn resuscitation and the retention of newborn resuscitation knowledge and skills?
   On job mentorships on resuscitation e.g during C.M.Es on newborn resuscitation.
   HBB corners.
   On job training's about HBB helps to retain knowledge and skills.
   Working and available equipment.
   Good working relationship in place of work.
   Some facilities had HBB champions who championed facility training.
   Teamwork.
   Refresher training on HBB.
   AIR device with real-time feedback helped retain skills.
   Continuous positive results in resuscitation boosts morale and courage hence retaining skills.
   Personal interest to continue practicing.

4. What did you LIKE about the AIR device? What worked well?
   Feedback. Feedback was motivating.
   The device assisted health workers to do the right thing.
   Made the skills to skills.

Easy to use with the Ambu bag
Easy to connect.
Can be used even when power is out.
It is portable
Materials used cannot absorb dust.

5. What did you DISLIKE about the AIR device? What didn't work well?
A bit heavy.
Sometimes it was difficult to connect with the APP.
Charging was a problem sometimes.
AIR device could not transmit practice sessions to AIR App.
Size should be reduced.
You should be in the device.
Colors should be strictly red or green.

6. What challenges did you have in using the AIR device?
Challenges to connect with the AIR App.
Rural facilities find it difficult to use the device especially when there is power outrage.
Accessibility, some facilities had it under lock and key.
Facilities with large number of staffs could not adequately practice.
Security of the AIR device may be a problem in some facilities.
Device could easily get spoilt.

7. What would you suggest we change to make the AIR device even more useful?
Have timer on it.
Device should be able to be traced.
Motivated by supervising the device use.
Organize OJTs to train more staffs on HBB
Device should be able to use dry cells.

8. Do you feel that the AIR device is easy to learn and use? Why or why not?
Yes!
Device has feedback
Device not complicated. It is easy to use.
Portable. Easy to carry.

9. Do you think the AIR device improved your resuscitation skills? Why or why not?
Yes!
Continuous practice helped to retain skills.
Feedback could instruct a staff to make necessary correction immediately.
Training that came along with the device helped to improve skills and knowledge.
Procedures such us applying the mask came out clear.

10. Do you think the AIR device can help with quality improvement efforts at your facility? In which way?

Skills from continuous practice helped to reduce death(neonatal) as a result of asphyxia.
The air device has helped improve outcome through ensuring that the HCWs carry out quality ventilation base on the feedback from the device.

11. Do you see any barriers or challenges to implementing the AIR device for healthcare worker training in your country?

Inadequate resources for training of healthcare I.e funds, money for equipment's(resuscitation) AIR devices.
Sustainability of the program internal changes among staff due to interdepartmental transfer affects practice. Will the training be conducted throughout?
Difficulty in accessing some facilities to train HCWs due to adverse weather condition.
Insecurity in certain parts of the country.
Inadequate staffing- limited time from practice to attend training in places with few staffs.
Restrictive government policies.
Cultural beliefs. Some communities may be skeptical about the use of device.
Staff attitude. Some HCWs may not be interested in the training.
Poor internet connectivity in some areas. Difficulty in communicating to staff to attend training. The AIR device also needs internet connection.
Electricity is a challenge in some areas due to frequent blackouts. Lack of backup sources of power.
In some facilities the in-charges may attend the training but eventually not participate in clinical care.
Discrimination in selection of HCWs to attend participate in the training.

12. Do you see any barriers or challenges to eventually implementing the AIR device for clinical care in your country?

Cultural beliefs misconception. Some communities may not accept the use of the device in resuscitation of the babies.
Poor network coverage.
Frequent power blackouts, lack of backup source of power.
The AIR device in some instances is locked due to insecurity hence inaccessible to use.
Staff attitude. Some staffs maybe reluctant to use the device.
Interdepartmental changes affect HCWs who had been trained.
Poor infection prevention and control.
Staffs without training may not be able to use the device.
The device may get lost in the facilities.

13. Any other suggestions or comments about your experience with the AIR device?

The AIR device has helped to build confidence and sharpen resuscitation skills and knowledge.
The AIR device should be be redeployed to facilities for continuous practice.
HBB champions to be deployed in all facilities to mentor other HCWs.
The device helped HCWs to learn Quality.
The feedback in the from the device helped to enable HCWs to know the quality of their ventilation.
Continuous supervision and followups to be done to the participants.

The device should be used in clinical care.
The time should be integrated into the AIR device.
The device to have an alternative source of power e.g Batteries.

Thank you for your time!

FGD Nº: 1

AUGMENTED INFANT RESUSCITATOR (AIR): TRANSITIONING A NOVEL BEHAVIOR CHANGE INNOVATION TO DRIVE NEWBORN VENTILATION SKILLS ENHANCEMENT

KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS QUESTIONNAIRE AND CONSENT FORM

Semi-structured focus group discussions and key-informant interviews

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Facilitator: The purpose of our discussion today is for us to understand your experiences with the Augmented Infant Resuscitator – or AIR – device. The purpose of this discussion is to understand what worked and what needs to be improved.
Participating in this discussion is completely voluntary. Deciding whether or not to answer these questions will not affect your position in any way and will not be included in any evaluations of your individual performance. Whatever responses you provide in this discussion will remain completely anonymous.
So that we don't miss anything during our discussion, we would like to audio-record this discussion.

Do you have any questions?

Do you agree to participate?

1. Today's date: 23/11/2023
2. Location of discussion: AIR STUDY PIs OFFICE ALUPE
3. Number of Facilitator(s) conducting discussion: 2
F. Number and cadre of participants:

Nurses: **8**
Midwives: **0**
Doctors: **0**
Administrators: **0**
Other: **0**

Discussion questions:

This discussion guide is intended to be semi-structured. Evaluators may add probes or additional questions based on the direction of the focus group or key-informant interview. Not all questions may be asked at every discussion.

[Start audio-recorder]

1. In your work, what are some of the barriers or challenges you face in newborn resuscitation and the retention of newborn resuscitation knowledge and skills?
   Lack of equipment- Ambu bag suction device, resuscitare.
   Staff shortage. When one staff is on duty and is torn between helping the mother on baby
   Frequent power blackout/ lack of electricity, warm chain and inadequate time for practice due to workload.
   Most staff in the facilities don't get training on neonatal resuscitation
   Staff reshuffling
   Health care worker attitude: some HCWs are not interested in neonatal resuscitation
   Inadequate staffing also contributes to less available time for practice hence difficulty in retention of knowledge and skills.
   Lack of motivation-participants stopped to practice at end of the study due to withdrawal of supervision, bundles for internet connectivity, lack of refresher training and withdrawal of air devices from the facilities.
   Inadequate practice sessions-practice equipment are at times inaccessible (locked away) due to insecurity when the in-charge is away.

2. Does the AIR device help overcome any of these barriers and challenges? If so, in which way?

yes
Feedback from the AIR device helped to build confidence in staff hence the improvement in neonatal resuscitation
Participants who attended the training passed the knowledge and skills to other colleagues
Resuscitation equipment donated from AIR study helped in facilities without equipment.
Staff sot motivation from the support they got in terms of meals during training, bundles, transport reimbursement, motivation to practice from seeing feedback from the air device.
The feedback from the AIR device helped HCWs to adjust their resuscitation technique accordingly.
Even individuals who had not been trained developed interest to use the AIR device so as to be able to see how feedback from their resuscitation skills would be.

3. In your work, what are some of the facilitators or things that make things easier for newborn resuscitation and the retention of newborn resuscitation knowledge and skills?

Availability of resuscitation equipment.
HBB practice corners for practice.
Team work among healthcare worker.

Healthcare workers who were trained acquired knowledge and skills which they can easily apply and disseminate to colleagues who were not trained.
Continuous medical education sessions on neonatal resuscitation
Frequent follow-ups and supervision motivated participants to ensure that they practice frequently.
Participants received support in terms of bundles for internet connectivity which facilitated sessions hence reinforcing the knowledge and skills.

4. What did you LIKE about the AIR device? What worked well
   Easy to use, to assemble mask, device and face mask .
   Gives real-time feedback.
   It was rechargeable hence could be used in case of blackout, also notified on low battery hence could plan for recharging.
   The colors from the icons giving feedback were good.
   It was portable.

5. What did you DISLIKE about the AIR device? What didn't work well?
The device was bulky and heavy.
At some point, the device the did not transmit the data to the APP for feedback at the end of the session.
In some instances, the device was not able to stay on and went off abruptly while doing the resuscitation.
The device may not be used remote areas without electricity connectivity or solar power

6. What challenges did you have in using the AIR device?
Initially in some stations the AIR device could not connect to the AIR app Bluetooth on phones.
The AIR device could not connect to the AIR app when there was little or poor internet connectivity.
Staff without technological know-how found it hard to pair the AIR app.

7. What would you suggest we change to make the AIR device even more useful?
The device to be smaller and lighter.
The device should be deployed with a power bank for use in areas with frequent blackout.
AIR device instructions manual to be available so that facilities can train HCWs on how to use it/ user manual.
Inter-grate a solar panel into the device so that it can be powered by solar power in areas without electricity
Should have tracer so that it can be traced whenever it disappears.
For timing a wall clock to be put in the HBB Conner/ the device can be integrated with a timer which automatically counts down the moment you begin to ventilate.

8. Do you feel that the AIR device is easy to learn and use? Why or why not?
Yes!
It is easy to connect.
It is user friendly.
It gives real time feedback.

It can be used anywhere.

9. Do you think the AIR device improved your resuscitation skills? Why or why not?
   Yes!
   The device gave real time feedback which made staffs to modify their techniques accordingly.
   Motivated participants to have self-drive to resuscitate through practice sessions to evaluate themselves.
   Practice enabled participants to have confidence on neonatal resuscitation.
   The device gave feedback which enabled participants to point at the exact parameters/items which was problematic during resuscitation therefore HCWs are able to tell whether or not they are doing the right thing.

10. Do you think the AIR device can help with quality improvement efforts at your facility? In which way?
    The feedback from the device would help to standardize the resuscitation practice in he facility.
    The feedback of the individual practice sessions would help to identify HCWs who need further assistance so that they can improve there resuscitation skills.
    The AIR device can be used to train other healthcare workers in the facility hence equipping them knowledge and skills of resuscitation therefore improving outcomes.

11. Do you see any barriers or challenges to implementing the AIR device for healthcare worker training in your country?
    Poor internet connectivity in certain areas.
    Transport may be difficult in areas with adverse weather conditions.
    Insecurity in certain parts of country
    Community/cultural beliefs and misconceptions about neonatal resuscitation.
    Some healthcare workers may be reluctant to be trained to avoid additional responsibilities and negative attitude.
    Under staffing hence difficulty in creating time for attending training.
    Lack of awareness on importance of training for neonatal resuscitation.
    Bias in training where some staff are preferentially selected to attend training. Staff in one department may be preferred while overloading those in other departments.

12. Do you see any barriers or challenges to eventually implementing the AIR device for clinical care in your country?

Infection prevention and control- how to handle the device from one baby to another. No guidelines on how to decontaminate the device.
Inadequate / lack of equipment in the facilities.
Lack of political goodwill from the government.
Procurement irregularities- the government may not sustain the program if left to handle the procurement of devices.
Poor maintenance and lack of replacement for faulty devices.
Resistance from healthcare workers to embrace use of the device.
The AIR device may be kept away by the in charge hence in accessible for use.

Staff reshuffling- HCWS without training may find it difficult using the device if moved to the department where the the device is located.
Over-reliance on the device may make it difficult for some HCWS to provide ventilation when the device is faulty or not available.
Some mothers may refuse the use of the device on ventilation of their newborns.

13. Any other suggestions or comments about your experience with the AIR device?
    The AIR device helped to build confidence among participants.
    Has helped to improve quality of resuscitation administered to neonates doing by improved neonatal outcomes.
    Participants appreciate support from the program- donations, meals, transport reimbursement.
    The AIR device should be redeployed to the facilities for further practice.
    Extending the helping babies breathe training to other HCWS who missed the initial training.
    Participants who received training can also help train other HCWS.
    Follow-up on the outcomes of babies who received neonatal resuscitation from HCWS who were trained on neonatal resuscitation.
    Introduce a skills lab in the facilities where the resuscitation equipment are kept and anyone can use them for practice inducting students.
    Incorporate the helping babies breathe neonatal resuscitation into the curriculum of medical institutions.
    Subsequent training should be conducted to refresh the knowledge and skills.

Thank you for your time!