

APOLLO 13 MEDICAL STATUS BRIEFING, 4-6-70, CST 6:50 PM, 8A/1

KING We're ready to procede with our conference at this time. Your colleagues also are listening in in Houston. This will be a two-way conference, and after we accept questions here, we will switch to Houston to take questions from Houston also. Now, I'd like to introduce Dr. Charles Berry, who is Director of Medical Research and Operations at the Manned Spacecraft Center. Dr. Berry.

BERRY I guess you all wonder why we called this meeting. I think it would probably be best to try and run down for you where we are now in regard to this situation, and in line with some of the statements in the release awhile ago, and try and re - tell you what we're doing at the moment, what our plans are, and that will, I'm sure, lead to some that they're to have no contact with other individuals as of now. We separated the prime crew from the backup crew in separate areas of the quarters. There will be - as we would do normally anyway - there will be checkups of both prime and backups on a daily basis, so that we can have some idea about our status day to day during this period because as you know, the last big exam was - would normally be today. We have a situation where we have a backup crew man who has what we all feel to be clinically a fairly classical case of Rubella or German Measles. We have every evidence that he has been, of course, in very close contact with all the other members of both the backup and the prime crew, and certainly during the period that was infectious here you are - you can communicate this disease for a 7-day period - normally a 7-day period prior to the appearance of the rash or - and then it goes for at least 4 days after the rash that you're still communicable, and they have taken throat washings for a lot longer than that and found that you can still cause infection with that material. It's passed by mouth, by contact from respiratory passages, and the situation that we have is making - one making very sure that this is the diagnosis that we have. We feel clinically that's certainly the case. In this instance, we'd like to be further sure to that, and one other thing that you'll ask right away, I'm sure - "Well, what else could it be?" There's only one other thing that would possibly fit this sort of a situation. It's a very long shot, but it could be one of the echo viruses, and there is one of the echo virus strains that produces some symptomatology which is similar to this, and some of the findings that we have here, and it doesn't help our situation much if it would happen to be that. At any rate, there would be a difference as far - it could be a difference as far as the diagnosis is concerned. The incubation period is 14 to 21 days and this is not uncommon for most of the viral diseases and the average

BERRY for this particular one, the Rubella, runs about 18 days. We have a plan whereby we have taken blood, as you know, each of the blood samples that we take, we always store some of the serum, and we always have - we have a serum bank, and we can go back for any of the people for any exam that we've done. We can go back and check that serum for some particular thing, if we so desire, if there's any need to. In this instance, of course, we have serum stored from the F minus 30 days exam, and we plan to check that serum plus this serum that we're drawing this morning, and these will be run in our laboratory. In fact, they're on their way to Houston now and will be there tonight, and we'll start running them tonight. We plan to check very carefully both the prime and backup's serum and of course, Charlie Duke's blood was drawn in Houston, and we plan to do it the same way, and we will check it for Rubella antibodies. We'll check it for Rubeola antibodies and we'll check it for the level of echo virus antibodies. With this information then, what we would hope to do is be in a position to determine what the possibilities are of the prime crew developing this particular illness. That's the kind of position that we're in at the moment. We're trying to get to a point where we can determine what that possibility is, and have some sort of confidence that we can hang on that particular number. So that's the role that we're playing at the moment. We're trying to gather that data and we hope we will - we may have some of that lab data late tomorrow afternoon. Certainly, we will have it by Wednesday morning with a check on it, and we are developing tonight some plans as to what we plan to continue to do in specifically the actions that we have done with the crew members and also where our decision points are and the information that we need to make a rational decision at each of those decision points. So, that's the status of the game at the moment.

KING Thanks, Chuck. We're now ready for questions.
John, ask your question.

QUERY Dr. Berry, we understand that it's very rare for an adult male to get the German Measles. For this reason, more than likely, whether they know it or not, they have built up an immunity to the disease. So, what do you think are the chances of any one of the prime crew getting the German Measles?

BERRY I'll be far better able to answer that question when I know what their antibody levels are because I can answer it with some assurance. Now all I can do is guess with you. And if I told you that I was going to look at a number of adults I'd say that the chances of any large number - you know, any number of adults getting the German Measles are pretty slim normally. It's not an adult kind of disease, but the difficulties

BERRY are that when you get an adult disease - when you get a childhood disease as an adult it's always a worse disease, and secondly we have very - a very definite known exposure, and one thing you can say is that when you do get exposure like this with the measles virus, that you almost get a sure case. If there is one thing your doctor will tell you when you go to see him, and you've got the measles, and you have somebody with exposure, he'll tell you "Well, okay start - you can start looking for the symptoms to develop in so many days." Now, there are a lot of things that alter immunity. You know, it's not a simple process. We are capable now with some of the laboratory techniques of looking at these antibody levels and that is a very helpful thing because it gives you some idea whether the individual has built up immunity or not to this particular condition. The timing of that is, of course, helpful to you also. So, I think that the position that we're in here now - I don't know what the chances of these individuals getting this disease and that's what we really need to find out.

QUERY Is there any reason to suspect that because of weightlessness of pure oxygen environment or something like that would speed up the incubation period or alter the disease in any way if they got it?

BERRY Again, I'll have to tell you - we really - I can't give you an honest scientific answer to that and tell you "yes" it will or "no" it won't, and so that tells you the answer is that I don't really know. We are concerned about the effects of the spacecraft environment upon both viruses and bacteria. As you know, we have seen some changes and some effects in this area, and so it's something that we are concerned about, and something that is weighing on our minds right now. It would certainly enter into the decision when we finally make it.

KING Come around the front row and we'll take your question.

QUERY Dr. when did Duke get sick? Who did he pick it up from if he - when was the - how, let's start it this way. How sick is he now? Who do you think he picked it up from? When do you think he got it, even though he showed the rash on Sunday, and when was the last time he ~~was~~ in contact with the crew?

BERRY Oh, boy that's a long series of questions. Okay, one how sick is he now? He is not - he is better today than he was over the weekend. He initially had symptoms starting on - apparently started on Friday afternoon from the best we can determine on our very good history now and going back over the things several times. He just didn't quite feel right on Friday afternoon. Saturday he had some generalized aching, and fever. He had this again on Sunday, and then finally Sunday afternoon he had a rash late Sunday afternoon and so he was seen late Sunday evening.

END OF TAPE

BERRY - and so he was seen late Sunday evening and so, and at that time it was thought that this was what he might have. Now, he was seen in Houston, in the meantime while he was seen I was en route down here, and the first we heard of this was this morning just before the exam and there was a question about what we had for an actual diagnosis, and so he was being seen again while we were examining a crew here this morning we had him being examined again and a lot of laboratory samples being taken. There are some histories asking the very kinds of things you're asking me here about contacts and so forth was being taken there too. He has had very intimate contact with the backup crew up through last Friday. He also had the same kind of contact with the prime crew and his last contact with them was on Friday. There was a crew meeting that occurred in the crew quarters very late on Thursday that involved prime and backup crews for a fair amount of time. So, there has been a fair amount of contact here without any doubt and certainly during the infectious period. Now, as to where he got it, we do know he has gone back to recall, and there is some question of - and we're trying to chase this down right now but there is some question about a possible contact about 2 weeks ago from, 2 weeks ago Friday. And, so, we don't know this definitely at the moment and we're trying to chase this down. It is a possibility and if that turns out to be the case well that certainly fits in with the incubation period. It would fit in with it, some 2 weeks ago Friday.

KING Does that cover your questions now? Go ahead
Mr. Schumacher.

QUERY I have 2 questions Dr. Berry. First, to reverse the earlier questions, how can you say statistically that there is, or will you be able to say statistically that there's no chance that these men will develop measles?

BERRY Well, I think that if we had, however, you can never say there is no chance, I don't think I'd ever say that even if they had a titer now because, a titer that we felt would give them some immunity. If they have a very high titer when we get these results, that would leave us in a position that we would feel fairly comfortable with that, that they had a high immunity level and they were probably not going to get this disease. They have ever thing else going for them as far as their immunity is concerned. They have nothing else that tend to knock their immunity status down. So, we would feel fairly comfortable with that. On the other hand, if we get no titer or we're placed in a position they're, okay, probably are going to get it, if we get a very low titer, we're in that Never-Never Land that is going to be a hard one to figure out. Now, you were going to ask another question I'm

BERRY sure, which is can you do anything to change that immunity, and that's certainly going to come up and so we ought to wipe that one out. It's very controversial at the moment about the effect of gamma globulin and you know that you, there is Gamma globulin available and we can produce some temporary immunity in this regard to a lot of diseases and it is used very effectively for the real measles, for Rubella, it has been used very effectively. Now, in this instance, it's quite questionable as to the effect. There are studies that show that it is of no value whatsoever and there are other studies that show that it is of some value and we're talking to everybody who has run a study and I, we're going to have to, I suspect, take that information in tons before we're through as to decide that, you know, who we're going to believe, and you say well, you know, is there any problem in giving it once you go ahead and give it. Well the trouble is the dosage you have to give is a fairly walloping dose of this material, and so, you can certainly, you're going to have to give it in at least two times and maybe more if you do and I just don't want to do that if there's not a real reason to do it.

QUERY Well given the situation of low titer, would you spell that please.

BERRY Yes. Ti - you can spell it Tit - it's usually spelled titre but it's **titer**.

QUERY Given the situation such as that with no symptoms would you recommend they go ahead with the mission anyway?

BERRY A situation such as what?

QUERY In which they would appear not to have much immunity, but nevertheless have not developed any symptoms. Would you then nevertheless recommend that they go ahead with the mission?

BERRY As I told you what we're in the process of trying to do right now is to try and determine what we think their immunity status is and what's the odds of them developing the condition, and what I've got to develop over the next 24, 48 hours here, probably 24, is some plan to exactly what we feel we ought to do in that regard. I really would prefer not to answer that question right now until we gather some of these data and can have a pretty firm idea about what that status is because there are a lot of unknowns and we've got a lot of things going right now to try and chase down some of these angles and get some data that we can go on and I think once we have that I think that's going to have to be done probably within the next 24 hours.

QUERY (Garbled) now is exposed -

BERRY Because there's no point the possibility of the backup crewmen who have been probably better exposed

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BERRY because of their closer association in training with Charlie Duke. We would like to not continue to add dosage to the crew, knowing, there's no point in continuing to talk virus at them at this point in time because any, any development of disease is a result of the amount of exposure versus the amount of immunity that that you have and you can get such an overwhelming exposure but your immunity, that it's possible that you could develop, that there's no point in taking that kind of risk right now.

QUERY Go ahead.

QUERY Chuck, given a low immunity finding in your lab tests, the incubation period, the Rubiola or Rubella places you smack in the middle of the flight, in fact for the Rubella it places you smack in the middle of the second EVA by the numbers here. Would you give a long commit decision if there were that risk of their developing it during the flight?

BERRY Well, I guess this is the, you asked me the same question really that was asked over here and, Jules, and this is the thing obviously I'm agonizing over at the present time about what I am going to with that particular decision. and I think that we all would be concerned about launching a crew with a real potential of any illness and what we've got to determine here I think is the risk, you've got to determine what your risk really is in order to be able to come up with a firm answer here, and I, again, I really would prefer to hold that off for 24 hours.

QUERY Holding off on it then, If the crew should develop the Rubella, which seems to be the more likely of the two things, if they develop either, would that make them that uncomfortable? Would that disable them during the mission?

BERRY It certainly could, yes. It could, right.

QUERY Chuck, may I follow Jules point there, given a situation like this, where you might make a decision, does the contamination committee sit in on this and have the power to veto your decision, stop you from doing for example.

BERRY No. They're advisory. My decision would be advisory too. I guess we could have, I don't make the decisions whether we launch, as you know, I can only make a recommendation, and whether they, whether somebody uses that recommendation, that can go all the way to Dr. Payne.

QUERY (Garbled) Would they be called into a situation like this where -

BERRY No. We have talked, as a matter of fact it so happens that the head of Communicable Disease Center, Dr. Sencer, is the head of that Committee on Back Contamination and therefore we have been in touch with him today, but not because he has any input as to whether we should or shouldn't, should do it. Now, they're going to get involved if they, this has some

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BERRY -lymph nodes, particularly in the posterior part of the neck, posterior cervical node, and they have this pink, a light pink rash, which tends to jump around. When you see it on one part of the body, then you may look as much as 24 hours later and it will be gone from that part of the body and appeared on another part of the body. Some people end up with a lot more rash. Frequently an adult ends up with a lot more rash than you see in children. There are a lot of things that can happen as with any disease, and you can end up with arthralgia, aching and throbbing of the joints, swelling of the joints. You can end up with involvement of the coverings of the brain. The meninges which most any viral disease can do. You can end up with enlargement, involvement of the spleen. There are many organs of the body that can get involved, as with any kind of a virus.

KING We have one more question here and then we will switch to Houston.

QUERY Dr. Berry, in the form of background, what kind of isolation procedures were followed for 11 and 12 and 13? Was there a significant difference this time?

BERRY As you know we have what we call a modified isolation. It's not quarantine. It couldn't be quarantine in the traditional sense. The policy and the plans, the preventive medicine plans, pretty well spelled out in our medical requirements document, which I think is available to all of you. And that plan calls for the limiting of the contacts of the crew to essential which isn't well, very well, defined. It obviously means people in the training area, that they have to have contact with because they spend a lot of time in the training area. The people in the crew quarters. People of this sort we know are going to have a lot of contact with them, we make a special effort to brief and to check. They can see their families and this is one of the risks that you always run when seeing families too. Particularly in families with small children, you always run a risk that this sort of thing can happen to you. But we do have a policy that they can see families and they usually cut that down greatly during this period. The crew has generally moved into the crew quarters, around this period of time and this period has never been exactly on - to this date, but it is around the 21 day time period. This crew has been later in that regard. They have not done that as early as the other crews. So that's a difference here.

QUERY That's really the only difference? It's essentially the same kind of isolation procedures?

BERRY I think so. In general I think that's true. They haven't been in the same area, and of course you'd have

BERRY to go back and check specifically. I'd like to make very clear that I'm not a policeman in this regard, and it's not my duty to tell, to find out and to know exactly where all the crew men are at any given point in time.

That is someone else's duty and not mine. All I can do is tell you the kind of things they ought to be doing and then where they have actually been in all things is something other and to say the exact difference is here is you'd have to do that sort of thing. You'd have to go back and find out exactly what has happened. Now some of that were in the process of doing because it is important to us epidemicalogically to us now.

KING Okay, let's switch to Houston now for questions there.

QUERY Hi. Is it correct that this was first reported this morning and the symptoms showed up Friday? If that's true, why the 2 day delay?

BERRY That sounds like Jim Maloney. Jim, it is true that there were symptoms, but these symptoms were unknown to us and I guess Charlie didn't call you. But he had the symptoms on Friday and he had them on Saturday and he didn't tell us, he didn't tell any of my people until Sunday night when it became evident that he had a rash. He then went to see one of our physicians at Houston who was on call and the first I heard about that was this morning then, because I was in transit, at that time, to the Cape.

QUERY Doctor, you've described the symptoms of Rubella, would you now tell us symptoms of the echo virus.

BERRY The symptoms of the echo virus are not too different in that they tend to be respiratory in nature involving the nose and the throat again. They can involve, as can measles, too, it can involve other portions of the respiratory tract, where you can get some ear involvement as complication, you can even get sinus involvement as complication, you can get involvement of the lungs. You can again have, and frequently do, with the echo virus, have a meningeal involvement or a meningeal encephalitis type of involvement and that's the specific thing here.

QUERY This is being considered as merely an outside possibility, that you are fairly confident that it is rubella which he has developed?

BERRY I'd have to, you know if I were in practice and saw him as a patient this way, well we certainly wouldn't be spending the money to run an immune antibody and so forth, and I think there would be no doubt in my mind that I had tagged this and reported it as a rubella. I think that in this incident I think that in the back of my mind

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BERRY it might be an echo virus and you would watch it for that thing, but you would not.. Now we had a case a capability here because of our laboratory facilities, we certainly had a capability to chase this down and intend to be specific about it, but if I had to lay money now I think it's most, very highly probable that it is only rubella.

KING We have time for one more question since Dr. Berry has to get back to work here.

QUERY Dr. Berry, I've got a couple here. Number 1 is just for clarification. Did I understand you to say that with the type of exposure the crew had had that they are all almost bound to come down with something? And, also there has been at least one report today that if the crew did in the unlikely possibility, come down with a moon germ that this could react with the measles, is that correct?

BERRY Well, I don't know who said that because if anybody really knows they are better off than I am because I don't right now. I don't know if anybody could make a statement about that that would be really scientifically accurate at all. Any illness of course, if you have an illness and you were to get a secondary infection from another invader of any sort, well, of course, it could make it worse. I could make a general statement like that. But to say that because it was a moon, a possible moon bug, it could be worse, I don't think you could say that. I didn't understand the first one. Did you say that I said that there was a, that I felt very definitely that they were going to come down with something? Is that what you asked?

QUERY Did you say that with the type of exposure that they had had that the odds were very high that they would come down with it?

BERRY I think that's true if we end up with no immune titers. In short, if they have no antibodies to this virus at the present time, the odds are very high that they would get it.

KING Okay, do you want to answer this question here? We have one question here to wind up on that Dr. Berry will attempt to answer, also.

BERRY We have a question here; do any of the three I assume prime crewmen, it doesn't say, have a past history of rubella. If so, when. Again, this is a very hard thing to pin down in childhood. Two of the crewmen feel that they have not had rubella in the past. One feels that he did but he's not totally sure about that. So this is why immune titers are going to be very valuable to us even if they had a positive history, I think that it is still very valuable to us. And have any of the crewmen received rubella vaccine? No.

KING Okay, we will be keeping contact, with a certain distance, of Dr. Berry and his people, too, as soon as we have any new information we will pass it on to you.

END OF TAPE