ORAL HISTORY PROJECT

Balu H. Athreya, MD

Interviewed by
AnneMarie C. Brescia, MD
Carlos D. Rose, MD

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Chadds Ford, Pennsylvania

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Oral history has its roots in the sharing of stories which has occurred throughout the centuries. It is a primary source of historical data, gathering information from living individuals via recorded interviews. Outstanding pediatricians and other leaders in child health care are being interviewed as part of the Oral History Project at the Pediatric History Center of the American Academy of Pediatrics. Under the direction of the Historical Archives Advisory Committee, its purpose is to record and preserve the recollections of those who have made important contributions to the advancement of the health care of children through the collection of spoken memories and personal narrations.

This volume is the written record of one oral history interview. The reader is reminded that this is a verbatim transcript of spoken rather than written prose. It is intended to supplement other available sources of information about the individuals, organizations, institutions, and events that are discussed. The use of face-to-face interviews provides a unique opportunity to capture a firsthand, eyewitness account of events in an interactive session. Its importance lies less in the recitation of facts, names, and dates than in the interpretation of these by the speaker.

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ABOUT THE INTERVIEWERS

AnneMarie C. Brescia MD

Dr. AnneMarie Brescia is a graduate of Fordham University with a Bachelor of Science in Chemistry and the New York University School of Medicine (1998). After an internship and residency in general pediatrics at St. Christopher’s Hospital for Children, she completed her pediatric rheumatology fellowship at Thomas Jefferson University/Nemours/ Al DuPont Hospital for Children with Drs. Balu Athreya and Carlos Rose. During that time, she was a post-doctoral research fellow at the National Institute of Arthritis and Musculoskeletal and Skin Diseases at the National Institutes of Health. In 2004, she stayed on as faculty and has continued to be the fellowship director of the training program in pediatric rheumatology at Thomas Jefferson University/ Nemours/ AI DuPont Hospital for Children.

Carlos D. Rose, MD

Dr. Carlos D Rose is a graduate of University of Buenos Aires, School of Medicine (1977). After an internship and residency in Internal Medicine at the University of Buenos Aires and a Fellowship in Rheumatology at the National Institute of Rehabilitation in the same city he moved to the USA. He became a resident in pediatrics and then completed a Fellowship in Pediatric Rheumatology at the Children’s Hospital of Philadelphia, University of Pennsylvania under the mentorship of Dr Balu Athreya (1989). Since 1994 and until 2017, he has been the Chief of the Division of Pediatric Rheumatology at duPont Children’s Hospital, Thomas Jefferson University with the rank of Professor of Pediatrics. He is a fellow member of the American College of Rheumatology, the American Academy of Pediatrics and the Academic Pediatric Society. Dr Rose is also the Chairman of the Institutional Review Board and is active in the field of research ethics and auto-inflammatory diseases. He is co-director of the Pediatric Committee of the Pan-American League of Associations of Rheumatology.
Interview of Dr. Balu H. Athreya, MD

DR. ROSÉ: Hello, this is an interview of Dr. Balu [H.] Athreya. It’s being conducted by Dr. AnneMarie Brescia and Dr. Carlos Rosé on October the 4th, 2010, at my house in Chadds Ford, Pennsylvania.

DR. BRES: So, let us begin. Dr. Athreya, tell me a little about where you were born, and about your parents or siblings, and your family life there.

DR. ATHREYA: Thank you. I was born in India, southern part of India. The town is called, Ramnad [also called Ramanathapuram]. I have one older brother and 3 older sisters. I’m the youngest of the family, and actually, I am the first, and the only one, to go into medicine. I think that should be enough for that question, isn’t it?

DR. BRES: Thank you.

DR. ROSÉ: Well, do you want to say what your dad did, what position?

DR. ATHREYA: Oh, do they want all that stuff?

DR. ROSÉ: Well, I would.

DR. BRES: OK.

DR. ATHREYA: Our family, actually, would be considered a poor family. My father worked for the local government office as a clerk. We were 5 of us, and my mom didn’t work. My brother was one of the first ones to go to higher education, then I went into medical school, of course. I think that should do it.

DR. BRES: Yes, that’s good. OK, thank you. Were there any events in your childhood that influenced your career choice?

DR. ATHREYA: That is definitely an interesting story. For one thing, I was a sickly person. I distinctly remember going through all the common diseases in the tropics. I remember going through hepatitis. I remember going through acute glomerulonephritis. And then, a really, really horrible attack of typhoid. My mother didn’t think I was going to survive one night. I
remember her telling me she was just lying around, not knowing what to do. So, I think these had definitely something to do with it, because I remember all of them.

I do want to add one item to that story which is very interesting. There was no doctor in our town. There was only a pharmacist who used to be like a doctor. And there was also the local Ayurvedic physician who was the local doctor. When I had hepatitis, I still remember that he took the urine, and then he took cooked rice and put it inside. Then after a while, he took the rice out, washed it, and it was yellow. So, he said, “This is jaundice.” I still remember this kind of an observation because it’s like starch gel electrophoresis as far as I’m concerned, modern day. (Laughter) So that is one episode I remember from the science point of view. A very compassionate doctor and a local doctor who obviously didn’t have much to give, but he was very supportive. So that was the first thing. I think my own illness when I was young was one major factor.

DR. BRESCHIA: Do you remember what year that was, Dr. Athreya?

DR. ATHREYA: I don’t, but it was certainly before I got into 7th or 8th grade. The typhoid episode was when I was in 8th or 9th grade. I remember, because I lost one year completely of school, and then came back.

DR. ROSÉ: So what year were you born?

DR. ATHREYA: 1933. So that was it. And then the other major factor in medicine, getting into medicine, was my own sister, who, retrospectively I know now, had Fallot’s tetralogy [tetralogy of Fallot]. She was horribly sick. I think, finally, she died of a brain abscess, which used to be told to us in medical school, subsequently. But, that was a reconstructed story for me. But, she was my most favorite sister. So that, I’m sure, had something to do with wanting to go into medicine.

DR. ROSÉ: Dr. Athreya, how and when did you first become interested specifically in medicine in a more decisive way?

DR. ATHREYA: Well, high school. It was soon after the typhoid episode I started thinking about it, and also my sister’s illness. And then, after recovering from that horrible typhoid, another doctor took care of me, and he was one of the most compassionate people. It was amazing how he didn’t have much. I remember I actually helped him like a pharmacist in his clinic.
when I was in college, I think. He would make all kinds of these mixtures. In those days, you know, they used to mix all these things. He’d give it to people and he wouldn’t charge anyone. He was not just a doctor, he was also the family confidante. He was a surrogate father and everything. He definitely had something to do with my getting into medicine.

DR. ROSÉ: And how about the decision to do pediatrics? When and what?

DR. ATHREYA: I think I should say one other thing also. Having decided I would go into medical school, I went to school, college. I went to Loyola College [Chennai, India], which is a Jesuit school. It was an excellent school. Then, afterwards, I applied, but I didn’t know whether I would get into medical school or not. So, I remember applying to—as usual in India—I applied to the Presidency College in University of Madras, but would you believe, of all things, I applied for geology, geophysics. (Laughter)

DR. ROSÉ: A very different life.

DR. ATHREYA: I got admitted there and I was ready to join because they had all these quotas. By the time I heard about medical school, I had already joined the Presidency College, paid the fees, and all, but I don’t think I went to any classes. Then medical school came. It happened.

Then the pediatrics is really fascinating. That was like love at first sight. The very first day I was posted to pediatrics at the medical school, I knew this was what I wanted. That was partly because we had a professor named S. T. Achar. Many people in this country know him. He was a good friend of Dr. [Waldo E.] Nelson. He actually wrote a chapter in the old Nelson’s textbook [Nelson Textbook of Pediatrics] and he was the first professor of pediatrics in India. He was an amazing clinician. The very first day I saw him, and we went around, I knew this was what I wanted. Then I thought a little bit more, and I don’t mind telling you, I remember still, writing about a 12-page letter to my brother. My older brother was more like my father; he was 12 years older. I remember writing a very long letter, 10 or 12 pages, telling him why I was going into pediatrics. (Laughter) That included many, many things. Some of the thoughts I remember were that I wanted a specialty, but at the same time, I didn’t want to deal with an organ — like at that time in pediatrics, you know? And I enjoyed it. Incidentally, that’s what moved me to rheumatology also. It’s not a single organ, so — (Laughter)
DR. ROSÉ: Definitely not. (Laughter)

DR. ATHREYA: One of the many other things was, and I also truly felt, I thought for my size, pediatrics will be better. Children won’t be afraid of me.

DR. ROSÉ: And they weren’t.

DR. ATHREYA: I remember writing to my brother saying this was one of the reasons I was thinking of pediatrics. But there was no question that that was going to be it. There was no other choice in my mind after the very first day.

DR. ROSÉ: I’m going to push you ahead a bit, although I know part of the answer, what brought you to rheumatology?

DR. ATHREYA: Yes, that’s also an interesting story. What pushed me into rheumatology is also an interesting, involved story. When I go back and think about it, one of the very first things that tweaked my interest in rheumatology was a family of 3 patients. Dr. Milton Rapoport, one of the genius physicians at [The] Children’s Hospital [of] Philadelphia [CHOP], had one of the largest practices in town. He had a family of 3 children, and I took care of them when I was a resident. The first one — I forget if it was a boy or a girl — first one came with a fairly severe HSP [Henoch-Schonlein purpura], and then went home. The first one was admitted because there were some kidney problems. That’s why the first one was admitted, then went home. Then a few days later, a sibling — now again, I don’t know boy or girl — came in with acute rheumatic fever, then that child went home. Then the first one who had HSP came back with severe acute glomerulonephritis. Now, we knew that this same Strep [Streptococcus] doesn’t do this, but still, here was a family with one with an HSP and acute glomerulonephritis, the other one with acute rheumatic fever. Then we find that the third child in the family had an insignificant throat infection. Of course, in those days, there was no rapid throat culture and all, so we don’t know, but the assumption was that that child probably started the Strep in the family, and then to the 2 other children. How did this happen? I used to sit down with Dr. Rapoport and talk. I had some fantastic times with him. He would make rounds only between 8 and 10 o’clock at night, and I was living right in the hospital, so I’d go whenever he went. We would sit and talk, and he’d talk about all kinds of things. This was one of the things we talked about. What is it? What made it happen? So that was the first thing.
Then the second trigger was when I was a resident at the [The] University of Chicago. I spent 3 months at the La Rabida Hospital for Children [La Rabida Children's Hospital], which is a chronic disease hospital. There were, at any one time, 70 to 80 children with rheumatic fever in that hospital. And there were patients with rheumatoid arthritis. I still remember one lady, one young girl, 14 years old or so, who was on chloroquine in those days. She was a platinum blonde from the chloroquine. And incidentally, we know many of our pediatric rheumatologists, but one of the early ones who was not well known was Dr. Burton [J.] Grossman. He was the man in charge of the La Rabida. Actually, we wrote a paper on rheumatic fever together. I brought it to show you. So that was one of the other triggers, being there for 3 months and seeing all those patients. Also at that time, Dr. [Albert] Dorfman, who was the chairman at Chicago, was very much into Strep. So that was the second thing that happened.

So, the first was that family with Dr. Rapoport. Secondly, was the experience at Chicago. Then, when I was doing my research fellowship back at Children’s Hospital of Philadelphia, my work was on antibodies. Immunology was a very young specialty. Actually, we didn’t even know there was something called IgA [immunoglobulin A]. I am saying this because it has some relevance, that’s why I’m going through this. This is the first paper I ever wrote with Dr. [Lewis L.] Coriell, 1964, I think. Interestingly enough, we showed that there are antibodies to polio in mother’s milk, and that’s why nursing babies are protected. But we didn’t know there was an IgA. Actually, Dr. Horace [L.] Hodes, who read this paper, wrote saying, “It looks interesting, but I don’t think these are identical antibodies. The blood antibody is not the same as the secretory antibody.” We didn’t even know there was a secretory antibody in those days. Subsequently, Dr. [Pearay L.] Ogra followed it up. Because I went back to India, Dr. Ogra, who went to Buffalo, I think, did the work and showed tonsillar antibody and all this. Of course, Max [Dale] Cooper and the whole IgA business evolved after that. Immunology was involved in this, so I was always interested in infectious diseases, immunology.

Then I went back to India to settle down. The idea was that I would do research on the effects of malnutrition on the immune system. It was a 15-year project funded by Pan American [Health] Organization and WHO [World Health Organization], sponsored by Children’s Hospital of Philadelphia, and I was going to do it in India. This was going to be a collaborative 15-year project. So, I went to India, but then there were problems, and I could not do the project there, so I came back.
Now what has that got to do with rheumatology? When I came back to US here, Dr. [Alfred M.] Bongiovanni was very much involved in my decision to work in the field of rheumatology, Dr. Coriell was involved. Dr. Henry Cecil was also involved in my decision to enter rheumatology. When I came back, the question was, what do I want to do? Dr. Coriell was not just my teacher, he was more like a father. So, we were sitting there talking, and Dr. Bongiovanni, too. So, we were talking, “What do you want to do? You want to use your infectious diseases and immunology background.” By that time, I had done a lot of tissue culture work, and much of my research was in tissue culture, growing viruses, polio, and all this stuff. That was the time when rubella virus was being touted as the culprit for rheumatoid arthritis in adults and children. I was going to get in, use my background in tissue culture and virology, and show that viruses cause JRA [juvenile rheumatoid arthritis]. That was the reason I said I would get into it.

Also, I mentioned I liked the specialty because there was practically no one truly doing it in a very formal way. Of course, there were people, but there was no training in pediatric rheumatology at that time. When we were talking, Dr. Coriell said, “This is the right field, and you can do the virology thing.” In other words, in this field, no one seemed to be worrying too much about all the rheumatic diseases. In those days, patients with these diseases were taken care of by different specialists. For rheumatoid arthritis, many of the patients were taken care of by orthopedic surgeons. Glomerulonephritis would be with nephrology, and lupus would be with dermatology or renal disease. So, there was a need to bring all of these together that was just about happening.


DR. ATHREYA: 1969, 1970, 1971. So, the idea was to use my background in infectious diseases, virology, and immunology to apply to this field, which was relatively new. There was no clinic at Children’s at that time. I must correct that by saying, there was a clinic for rheumatic diseases at Children’s run by another early person whom many people don’t talk about, Dr. Peter [W.] Vanace. He had a clinic at Children’s, but it was with orthopedics. Then he left, and there was nothing happening. So, there was a gap. There was a need in the field and in the hospital. And so I said, “Yes, OK, this is a new field. I should go in and see.” So that’s how I got into rheumatology. Does that answer?
DR. BRESCIA: I think it answers.

DR. ROSÉ: Definitely. I was trying to think who else was doing similar kinds of work at the time.

DR. ATHREYA: I can tell you who was also at that time.

DR. ROSÉ: That would be helpful.

DR. ATHREYA: See, just like any other pediatric subspecialty, rheumatology was fostered quite a bit by internist rheumatologists, starting, obviously, with Barbara [Mary] Ansell and Dr. [Eric George Lapthorne] Bywaters in England. But here people were doing quite a bit at that time with Dr. J. Sydney Stillman, Dr. [John J.] Calabro, Dr. James T. Cassidy, he’s an internist, and Joe [Joseph E.] Levinson, he’s an internist. So, they were all the ones who were really fostering it. There were a few pure pediatric rheumatologists, but they were not trained in rheumatology because there was no such thing. They used to go somewhere like Dr. Stillman’s clinic or go to England. They were Jane [G.] Schaller, Jerry [C.] Jacobs, Virgil Hanson, Chuck [Chester W.] Fink. That was the group. As I said, people didn’t know enough about Dr. Burton [J.] Grossman, but he was really a great clinician. He had a lot of patients with rheumatic fever and rheumatoid arthritis. There were people, but very few.

DR. ROSÉ: And Dr. [Earl J.] Brewer was already —

DR. ATHREYA: Yes, Brewer also was there. I forgot him, I should have definitely mentioned him. How can I forget him? Yes, he was one of the early pediatrician rheumatologists, yes, absolutely.

DR. BRESCIA: OK, thank you. The next set of questions regard your medical education. So which medical school did you attend?

DR. ATHREYA: I went to this medical school called Madras Medical College. I think it’s a pretty well-known world institution since 1835. Well-known because the malaria parasite was discovered in that hospital. *Leishmania donovani* bodies were discovered in the hospital, the VDRL [Venereal Disease Rapid Laboratory] test was developed there. So, it was pretty good, and the teachers were excellent people.

There is something that I want to add here. I was thinking I had written that
note that goes to the research side of it. You know, I always was shunting back and forth. I have done some basic research, but my heart is clinical. And I have to tell you about the research side, because it’s something very interesting. When I was in third-year school, I’m pretty sure it was then, India had just become independent, and the WHO sponsored a 15-member team of internationally-renowned physicians who came and stayed in my medical school for almost a month. If I remember, they were invited by our university, the president of our university; we used to call him the vice chancellor. He was a well-known physician and he invited them. I remember listening to these people, which really fired me up a lot. If I tell you who they were, you won’t be surprised. The leader of the team was Sir Alexander Fleming. And the other person was another Nobel Prize winner, [Corneille Jean Francois] Heymans. I’m pretty sure it was Heymans, a Belgian who discovered the carotid sinus and its relationship to blood pressure. He got the Nobel Prize. So, 2 Nobel Prize winners on that day. I remember listening to Dr. Heymans’ talk on how the carotid sinus worked. And Dr. Fleming, of course. Then there were other great people like Sam [Samuel Zachary] Levine who was a pediatrician at [The] Bellevue [Hospital], if I remember correctly; and Joseph Charles Aub, the famous physician from Mass General Hospital, Boston; and Leo [G.] Rigler, a radiologist from Minnesota. They were all on the team. I think that was when I really realized I needed to combine clinical with the research. It’s a personal story, but I hope it’s relevant. (Laughter)

DR. BRESCIA: Yes. (Laughter)

DR. ROSÉ: It is.

DR. BRESCIA: How would you characterize the education that you had at your medical school?

DR. ATHREYA: The clinical training was absolutely superb — as good as anywhere. I had some of the master clinicians. The research, of course, was terribly lacking and there was absolutely no exposure. But for this team, and the way I related to them, I probably would not have had this much interest in research. So, I do feel bad, but the clinical training was superb.

DR. BRESCIA: And how would you characterize your residency education?

DR. ATHREYA: You asked about the medical school, and I just gave a
summary statement, “Oh, it was excellent, as good as any place.” Maybe I should give a few details also. Our clinical training was actually different there — 5 years of school. We did basic things, anatomy, physiology, etc., in the first 2 years. Then we had clinical for 3 years. And then we did one year of postdoc [postdoctoral] training. The rotations were very much like what is here now, except that we did not have that many subspecialties. So, we did medicine, we did pediatrics, as I mentioned. That was when I got involved with pediatrics. And the bedside rounds were truly bedside rounds. When we were posted in the outpatient department, we didn’t really have as much instruction as would be ideal because the clinics are just full. Just to give an example, at the children’s hospital, morning outpatient visits — I’m not exaggerating because I have been there afterwards also as a staff member — 600 to 700 patients in the morning. And there were about 10 doctors, probably, and not all of them were senior people. There would be one senior, and he or she had to supervise and manage all problems. That was kind of the volume. So, you didn’t have enough time to really teach, but you got exposed to any variety of problems.

On the floor, on the other hand, there was much more detail because the patients were on the floor. The attendings would come and really give you more personal teaching, though it varied from place to place. There are other important things I guess I should mention. We have changed now, but as usual, we think, “Past is good,” but we don’t know. The laboratories were not as well-organized — now somebody else does it — but we did everything. So, blood smears, spinal tap analysis, staining, even a little bit of a biochemistry, looking at the stool sample for ova or parasites, all of those things you had to do, which definitely gives you a different perspective.

DR. ROSÉ: Were you given responsibilities as a medical student for the patient, inpatient direct?

DR. ATHREYA: No, no. We were not given direct responsibility. You were only there as tagging along with the postgraduate student. There were postgraduate students, but even they were not given responsibility. Usually, the junior attending was the person who was really making the decisions. So, that’s right. This is one of the things you find in India. They still are more hierarchical, and you don’t get the graded taking of responsibility. That’s very typically American. And actually, that’s one of the reasons that when I decided to go out of the country, I came here instead of going to England, because most people go to England. I came here because I knew I can learn to take greater responsibility. How would I know that? We had a pediatrician
in our hospital by the name of Dr. K.P.G. Menon. He was trained at Baltimore with Dr. [J. Edmund] Bradley, and he told me how the training was and how it would be. So I said, “Doc, I want to do more practical work, take responsibility.”

So, then coming here, I would say that the residency was at Children’s Hospital Philadelphia and University of Chicago, both places. Before that, I did a rotating internship. In those days, we did rotating, so that meant we did everything — medicine, surgery, ob-gyn [obstetrics and gynecology], orthopedic, everything — which I think gives you perspective. At that time at Children’s Hospital, there were only 16 residents available, if I remember correctly. And just as I expected, I was able to immediately get into more and more responsibility. There was always someone to help you, to supervise you, but you could make some decisions, which was a big thing. That was the same way with University of Chicago. University of Chicago, even at that time, had full-time staff. Therefore, those attendings were available a lot more to supervise and teach, whereas, Children’s even at that time was a more private practice-oriented kind of a center, so it was a little different. Does that answer some of the question?

DR. BRESCIA: Yes, it does.

DR. ATHREYA: OK.

DR. BRESCIA: Any other special training, besides residency?

DR. ATHREYA: OK. What did I do, special training? If you want to call this research time here, because it was. I did some research here with Dr. Coriell. They were a lot more into tissue culture, virology, tissue preservation, and that kind of work. Then when I was in India for a short time, I did some work again with virology, trying to look at the viral etiology of infantile biliary cirrhosis, but I didn’t complete the project.

DR. BRESCIA: How do you think medical education has changed since the time you were in school, and do you think it’s better now, not better now? What do you think is different?

DR. ATHREYA: I’ll first answer the last question. I don’t think they can say it’s better, not better. Conditions have changed. I don’t think we can say that’s much better. At that time, that was good. At this time, this is good. That’s the way I would think. The reason I’m saying that is, we spent 2 years
doing anatomy and physiology, organic chemistry, biochemistry, and all that stuff. Fine, because at that time the amount of information was limited. My God, the amount of information we have now is so much. If you say that we have to do that and also all of this, we will need a totally new medical school curriculum. It’s not practical. So, in some ways, I do feel that by cutting down so much on anatomy and basic physiology, some of the students do have a weakness even to figure out which organ is where properly. On the other hand, you have so much more to know about genetics and infectious diseases and all this kind of stuff. So, I won’t say it’s better or worse. Conditions have changed, so this is OK.

But what I would say is that some of the things are on the medical education side. How do you choose a medical student? For me, having gone through all this, my own personal feeling is that for anything, whether it’s for medical school or for a junior laboratory fellow or whatever, you must be able to choose properly. Once you choose, you let them grow. I think that’s the way it should be. And if that is so, then how do you choose? In medical school, it becomes very difficult. I think the emphasis is on the grade point average, you know, how they do for the MCAT [Medical College Admission Test], which is important, because without the basic knowledge, they’re not going to be good. But on the other hand, that doesn’t make them necessarily good doctors. So how do you balance? I don’t know what the correct balance is. But I do feel we did the right thing in some ways trying to emphasis the base — a good science foundation. But now, maybe we have to pay a little bit more attention and make sure the human side is also taken care of.

As I said, the strength is in training the basic sciences. They are very strong. But the clinical training is definitely weak compared to what I got. Partly, it looks like the students are not observed and taken care of while they are doing it like we were, or we were tested directly in the exam. We had to pass a clinical examination as in Britain. We don’t need that, but at least there should be an expectation that at the fourth year, the students must perform an examination which people can observe, that they’ve really gotten it properly. The other portion of the clinical is that the emphasis on objectivity is correct scientifically, but how do you get some of the subjective things from the patient? That’s the other area where we need to have more training and modeling, etc.

DR. ROSÉ: So, history-taking and physical exam. How about the thinking and the assessment? Do you have any comments on that aspect of the clinical teaching?
DR. ATHREYA: History-taking, which is good, but it can improve, definitely. Because what I see is when they take a history, it’s a lot more like getting every piece of information, not necessarily correlated kinds of information. In other words, you’ve got a bunch of pieces, but even when you ask questions, you don’t see a pattern developing.

Physical exam, definitely weak. And that has not been just my feeling. That again, has papers written on how it is.

DR. ROSÉ: Poor.

DR. ATHREYA: On the thinking, definitely, I think students and residents think extremely well. If I were to make any comments on that — it’ll come up probably again in the future more — it is that we have so much information now, unlike when I was in school. I remember going every Saturday to the College of Physicians [of Philadelphia] library with about 50 or 60 references. I’d go sit there, and they’d bring one volume at a time, and that was the way you had to do it.

Now you click a mouse, you get the information. But, what is good information? There I think the thinking is not good. They get every piece of information, but in essence, most of them have seen only the abstract. They have not really read the article to say whether it is a useful piece of information or not. Is it relevant- and evidence-based? Is it reliable? That is not there. And the logical thinking also could improve.

One of the important points is the fact that there are more women now than when I started. It’s an extremely important point.

The other important change that has happened over the years, of course, is the ability of our young graduates to use computers, Internet, and information technology. In other words, as somebody said, “They are the digital natives, and we are the digital immigrants.” (Laughter) And so, it’s an important change because of course it’s going to affect medical education.

The other change I’ve seen that I want to mention is earlier introduction of the student to bedside medicine. Some of them have started even in the first year. So that’s a big change from those past days.

And the other change that has happened over the years is integrated courses.
I was talking about the fact that now we have more integrated courses where they try to get the basic and clinical, which is a good new development since my days.

And one other change I will say is, as I observe it, the fourth-year of medical student education is not used well.

DR. BRESCIA: Can you elaborate more? Can you elaborate more on how the fourth years aren’t used well?

DR. ATHREYA: It appears that in the fourth year, other than some elective, they spend their time going around from one place to another, rather than really getting some more knowledge and skill. It’s the nature of the situation, I understand. But still, the fact is that they’re just coasting along in the fourth year, rather than getting more substantial information and clinical experience.

DR. ROSÉ: OK. Why don’t we move you away from the medical education into the practice of pediatrics? So, how would you describe, using examples if you can, the practice of pediatrics when you started your career? And if you want to, say something about what the biggest changes are that you can describe when you compare it to today’s practice of pediatrics.

DR. ATHREYA: OK, thank you. Do we want to include pediatric rheumatology also in that?

DR. ROSÉ: Please.

DR. ATHREYA: OK, all right. Obviously, many, many changes have taken place. I’m wondering where to start. Let me do first the general pediatrics side, and then the pediatric rheumatology side. I never practiced in private practice in this country, so it’s difficult for me to fully go into that, except from another angle, that is the referrals — for example, how they come and what kinds of patients. Also, having been at [Children’s] Seashore House [part of the pediatric network of The Children’s Hospital of Philadelphia], I did see many of the chronic diseases, etc., so I could go from that point of view.

So, if I had to say something, quickly, what came to my mind when you asked the question was that I remember when I came, infectious disease was a big deal. Lots of infectious diseases, and a lot of use of inpatient care for many
things. Prolonged stay also was pretty common. For example, Legg Perthes [Legg-Calvé Perthes] patients used to stay at the hospital for months and months. That was partly because that was the state of the art, and that was also because it was not too expensive to stay in the hospital in those days.

When I look at it now, one of the most important things to my observation is all the immunizations which came on. I think we will come into that later also. When I came, even when I started, even polio vaccine had not fully come into use. I remember seeing polio patients at Camden Municipal Hospital when I was a resident at CHOP. So, the immunizations and the control of infectious diseases is probably one of the biggest changes to me.

The other thing would be, compared to then, now we do more outpatient care. We try to take care of children at home, which is wonderful from my personal point of view. But at the same time, I must say, there are times when the focus, unfortunately, goes away from whether it is better to take care of the child at home. The finances are pushing to the point that children are sent home before they are ready. So that portion is the weakness side of the current situation, but it’s good that many of them are outpatient care rather than inpatient care.

The other thing that I would say is that there are a lot more chronic, multisystem problems that it looks like pediatricians are handling compared to when I started. I remember when I started my residency, when the diagnosis of acute leukemia was made, we were talking about 6 months to a year at the most. Now patients are living to be adults, and therefore the care has shifted, which is good, but it’s a different focus. I’m saying this partly because in pediatrics, one of the big problems is that as patients get older with many of these chronic diseases, who takes care of them? Pediatricians are not really willing to take care of adults with their problems. And internists are not familiar with them, or they don’t want to; whatever it is. It’s changing, definitely, in every field. That is the other issue, many of the patients growing up into adults with these problems.

The other change I see is that pediatricians are dealing with behavioral and emotional issues a lot more than when I started. In those days, again, the focus was on acute illnesses.

And, of course, during these years, the science has evolved so much. It’s incredible the subspecialties that have come—which is wonderful because we obviously can provide better care for these children. But it also comes with a
price, which is disjointed care. That is one area where I wonder what general practitioners can do. You do find as a specialist that you see these patients who probably can be managed in a private practice, but the private practitioner doesn’t have the time. They don’t have adequate support, and there is always this problem about malpractice insurance. All of these together mean that many of the problems, which could be taken care of in a private (primary care) practice easily, end up in many of our specialty clinics. And we are not equipped to take care of them because, again, we’re more focused, and it’s just not a good use of specialty time either. So that’s the other thing I see. Private practitioners, I think, are really stretched to the limit with their time. You know, 15 to 20 minutes for whatever they have to do. How can they take care of all these chronic, multisystem problems? So, I think that leads to some of the unnecessary — maybe I shouldn’t use that word — but the premature referral, let us say. They don’t have enough time to look into that.

And of course, when we started, we wrote notes, etc., etc., but they were certainly not appropriate, meticulous recording of all the stuff. Now, I think we have absolutely wonderful records, which is as it should be, but it comes with a price too. Filling out the papers takes your time away. Balance, how do we find the balance? I don’t have the answer, but that is one of the changes I see.

I do feel, though, individually, for each one of us, that our patients are very happy with us as a whole. My observation is the trust and the dyad, the physician-patient dyad, is not as good and strong as it was when I started. For various reasons, there is no one simple reason. But patient trust is not there anymore as much. Though individually, it’s different.

What else can I say?

Also, the effects of media on the general public. Of course, it is informative, but also a lot of wrong information, misinformation, and premature announcement of tests and medicines. These things are clearly new factors in our practice.

Of course, cost of care is another big issue. We all know that.

In the area of scientific advances in practice, I mentioned immunization was most important. Imaging is another.
One other important area of development is critical care. I remember when there was no intensive care unit, even after I finished my residency. So, that’s a major development. As we know very well, for many of the diseases, the survival is improved more due to critical care advances than advancement of basic knowledge, like in our own field.

I think that’s it.

DR. ROSÉ: I have to ask a question.

DR. BRESCIA: OK. You go first.

DR. ROSÉ: You were in the development of the subspecialty, pediatric rheumatology, in during those years, and you see us practicing now. How does the ideal that you had then and what you see now match or not match? I would like to hear your thoughts.

DR. ATHREYA: OK. Thanks. I think I can see immediately that this is the kind of care that I was hoping children would get. It’s wonderful. When we started, rheumatology was not even an organized specialty, and as we talked about already, most of the people who fostered it were very committed internist rheumatologists. There were some pediatric rheumatologists, but they were all kind of self-taught almost, including me. (Laughter) So, we were struggling to see what to do. And also, in many places, these children were in different specialties. So, bringing them all together and having coordinated care was a big problem.

Also, we did not have many things to treat these children with. It was very common to see children in an orthopedic clinic requiring all kinds of surgery, including hip replacement. Early in my career from Children’s, I remember at least 10 or 12 who needed hip replacement. And the gold, which was probably useless anyway, was all that was available. When you look at that and see what has happened over the years, first of all, on the science side of it, it’s amazing how much we can do — so much better.

And there were very few places with pediatric rheumatology. Children who were living way out, obviously, did not have good care. That is why most of us in the beginning, starting with Dr. Brewer, Dr. Hanson, myself, and many of us, started these outreach clinics to go out. And now it is good to see that there are a lot more. I don’t know exactly what the current number is. I think now many, many pediatric departments do have pediatric rheumatologists,
and some of them more than one.

So much research is going on. And the development of the [Pediatric Rheumatology] Collaborative Study [Group (PRCSG)], which wasn’t there at that time, the CARRA [Childhood Arthritis and Rheumatology Research Alliance], and all of those things. The research emphasis trying to solve the problem is wonderful. And the fact that there are so many specialists available in at least the children’s hospitals to care for these children and also to prepare the future generation of physicians. And certainly, for me, that is what I was hoping would happen eventually. Does that answer some of the questions? Do we need more?

DR. ROSE: Yes. No, no, I think that’s the answer to question. The care, that is what you foresaw?

DR. ATHREYA: Definitely. It’s a combination of the way you care for them, and also the availability of treatment modalities which will be truly helpful, and you do have them now. Obviously, we still have to go a long way because every time you have a new medicine, it looks like responses are in the same proportion — one-third respond, one-third don’t, one-third have partial response— (Laughter) It’s the same pattern whatever drug, practically. So, we do have some more to go, but at least I’m very pleased to see 2 major things: you don’t see too many children sitting in wheelchairs requiring orthopedics and you don’t see children with the kinds of eye problems I saw.

DR. ROSE: If you had to give us a few major scientific advances, since the 1970s, which ones would you list for pediatric rheumatology?

DR. ATHREYA: Rheumatology, pediatrics? Pediatric rheumatology? I’ll do both.

DR. ROSE: Good.

DR. ATHREYA: Because I was thinking of pediatrics. To me, without doubt, the development of immunization and prevention of infectious disease in children, I think is extremely important. I remember seeing everything from smallpox to polio, to afterwards all the meningitides. My God! The amount of H-flu [Haemophyilus influenzae (H. influenzae)] meningitis I have seen, pneumococcal meningitis. When I look at all that, clearly the most important development in my mind is immunization. It is amazing that
people complain so much. I don’t think they know what life was 40 years ago. So that would be the most important.

Then, what would be the other major advance in rheumatology? Though we still don’t have a basic understanding of what causes these things, I think the introduction of methotrexate made a big change, and all the biological agents which have come, definitely. So that will be an important scientific advance.

Again, considering when I started, we didn’t even know there was something called IgA in those days. So, considering that, our understanding of immunology has exploded so much it’s incredible. We may not have solved the problem of rheumatic diseases, but we certainly understand the functions of many of these cells and how they interact, and also some of the — what do you call those, where they send the message down, what is it called?

DR. ROSÉ: Second messenger?

DR. ATHREYA: Second messenger and all of those things, because they’re all very important in our treatment modalities. More recently, I think we have an even greater understanding of inflammation, such to the point that we are now talking about autoinflammatory diseases, which we didn’t know anything about when we started. This in turn also relates to the biological agents, because some of them are treated with these biological agents.

The other major one I forgot to mention earlier is clearly imaging. Particularly for our specialty, it’s been a big boon. Not just the ultrasound and CT [computerized tomography] scan, but I think MRI [magnetic resonance imaging] quite a bit. So those are some of the advances of importance.

It’s not a scientific advance, but in pediatric rheumatology, as you know very well, the other major thing is that from the very beginning I think we had some good leadership with people like Earl Brewer, Jim Cassidy and Virgil Hanson in trying to bring together the understanding that the number of patients for any study in any one medical school would be small. So, in pediatric rheumatology, if we’re going to advance knowledge, particularly for treatment and clinical trials, you have to do a collaborative study. Recognizing that and bringing together the Pediatric Rheumatology Collaborative Study Group, I think is one of the most important developments in our field bringing us to where we are now, clearly. I think I
must say, having been part of some of that early when it started, how wonderful the group was at fostering collaboration.

DR. BRESCIA: So, Dr. Athreya, let’s move on. We’re going to move over to a new topic, discussing your career. Who helped you most in your career?

DR. ATHREYA: More than one person, so I’d like to mention all of them, because we’re talking about mentors. Nonmedical, because that’s important too — “what’s my general philosophy in life.” There, it was clearly my older brother, who is about 12 years older than I.

DR. ROSÉ: Hueno [Athreya]?

DR. ATHREYA: Yes, him. He’s a great thinker, and we talk a lot. I get my inspiration from him and I don’t mind saying it. He’s one of the founders of management sciences in India — he started it, actually. And he thinks ahead. Anyway, so he’s my first mentor in global thinking about life in general.

In medicine, here, 2 major figures. One is Dr. Lew Coriell, who used to be the chief of infectious diseases at Children’s Philadelphia. He was also the editor, I think, of the 16th edition or whatever of the Red Book [Report of the Committee on Infectious Diseases]. I remember that’s where I cut my teeth in writing, helping him write. He used to go through it and tell me about the editing and what you had to do, etc. etc. And also on life decisions. Very, very few things I did without just talking to him. He never said, “Do this, do that,” but I asked just to see what he would think. And so, he’s one.

Then after coming back and finally settling down, Dr. [Henry S.] Cecil. He had a lot to do with the whole idea on the emotional issues in illness, chronic illness. How do you take care of those? What are the issues involved? I mean, as specialists, obviously, we have specialized knowledge, but it has to be applied in the background of a human being and how you think about their needs. So, I would say Dr. Cecil.

And one other person is Dr. Bongiovanni, who was the [physician-in-]chief of Children’s at that time. He had a lot to do, not only with me, but with my wife too. He was the kind of a person who helped a career. So those were the people.

DR. BRESCIA: Thank you.
DR. BRESCIA: Over the years, were you involved with the AAP, the American Academy of Pediatrics? And in what way were you involved with them?

DR. ATHREYA: American Academy of Pediatrics. The only area where I really was involved was when the section on pediatric rheumatology [Section on Rheumatology] was started. So, Dr. Brewer, myself, and Dr. Cassidy. Who were the other people? I forget. You know, we were the first group to make that section, pediatric rheumatology. I was on the first committee, for the first 3 years, or 4 years, whatever, I forget. Carolyn [L.] Yancy was there too, I think. So, that was my involvement, particularly because of rheumatology. Was AAP involved with some of the Park City [Utah] meetings [American Rheumatism Association (ARA) – Park City Conference]?

DR. ROSÉ: Of course.

DR. ATHREYA: Yes, because I was still working with ARA. I was involved with the second and third Park City meetings. I was on the organizing committee, and at that time, I think I worked with AAP also.

DR. ROSÉ: This first year, they would not be AAP.

DR. ATHREYA: Yes, right, so I was involved with AAP. And I think afterwards there was one other committee. I forget what it was. But mainly with pediatric rheumatology, the Section on Rheumatology. I started as one of the founders.

DR. BRESCIA: Thank you. What other medical organizations were you involved with?

DR. ATHREYA: OK, the most important is the American College of Rheumatology [ACR]. It used to be called American Rheumatism Association at that time [name changed in 1988]. I was involved with them, and obviously it was very early when I started. I wasn’t involved with the first Park City conference. I was not involved with the organization yet. But I was involved with organizing the second and third pediatric rheumatology group and also when they created the section. I think now it’s called section isn’t it? At that time, it used to be called Council on Pediatric Rheumatology.

DR. ROSÉ: Now section.
DR. ATHREYA: Now Section [of Pediatric Rheumatology], but it was called Council on Pediatric Rheumatology. I was there as the member of the council first, then I was the chair of the council, which is when it became section. I remember in one of the Park City meetings, everyone was there, and I was trying to get people’s ideas on how it should be structured for the section. If I remember right, [Robert F.] Meenan was the president at that time. In other words, around that time of council to section formation, those things, I was involved with that. So that’s ACR.

Then, American Board of Pediatrics. Again, when the rheumatology board [Sub-board of Pediatric Rheumatology] was created, I was on the first group and I was also the chief of the sub-board for a year.

The other major involvement was the American Juvenile Arthritis Organization (AJAO), practically from the very beginning. We were deeply involved. I think definitely 2 national meetings we organized through CHOP, our parent group. We had a wonderful parent group. So, we were involved with organizing the AJAO meeting.

DR. ROSÉ: The Arthritis Foundation?

DR. ATHREYA: Yes, the Arthritis Foundation. I say AJAO as a part of the American Arthritis Foundation, but I worked a lot more with AJAO than with the Arthritis Foundation. I was not on any of the committees, whatever. Everything was with AJAO.

One other I do want to mention, because this is very important from the chronic disease point of view. Dr. Brewer was extremely involved in this. About 1976 was the first pediatric rheumatology organized meeting. And that’s about the time people were realizing that we were having more and more trouble with chronic diseases. Patients needed coordinated care, etc. So Dr. [C. Everett] Koop, who used to be at Children’s, became [US] Surgeon General, and he organized a conference. And Earl Brewer was involved in organizing it. They invited a number of people from various medical schools and from children’s hospitals, where they invited a pediatrician and a parent to come together as a team. And that was where the family-centered — what is it?

DR. ROSÉ: Community —
DR. ATHREYA: The community-based coordinated care idea [family-centered, community-based, coordinated care for children with special needs] evolved, at that meeting. And I’m very happy to say, the Duttons [Linda and Philip] family and I were the ones from CHOP who went in. So that is the other one where I felt something good was done.

DR. ROSÉ: Yes. Were you also involved with the MACs, the Multipurpose Arthritis Centers?

DR. ATHREYA: No, no. I was not.

PAUSE IN INTERVIEW

DR. ATHREYA: Good afternoon. Today is Monday, October 11th. This the second session of the interview.

DR. BRESCIA: OK, so we are starting again to interview with Dr. Balu Athreya. Interviewing are Dr. Carlos Rosé and AnneMarie Brescia.

DR. ROSÉ: We have discussed some of the changes that you witnessed in the practice of pediatrics since your beginnings, and I wonder if you can give us some idea of what you saw in pediatric rheumatology specifically.

DR. ATHREYA: Very good, yes. When I started, pediatric rheumatology was not even an organized specialty. There were a few who were doing it, as we mentioned the last time in the discussion. There were a number of internist rheumatologists who were doing it. There were a few pediatric rheumatologists. None of them had formal training in what is called pediatric rheumatology. They trained either in immunology or with the adult medicine rheumatology. I remember the first time I went to a meeting in 1970, there were hardly 12 or 15 people. It was a small group. We just met and that was about all. Then in 1976, it took off after that first meeting that was organized. As compared to how few there were, now it’s obviously wonderful because not everybody still has it, but at least many medical schools. Most children’s hospitals have pediatric rheumatologists now, and some have more than one.

Very few medicines were available to treat arthritis in children. Many available medicines were not approved for use in children. Then the pediatric medicines that are available. It changed a lot; I remember still starting aspirin. Not even Indocin [generic is indomethacin] was used much in those days because the negative effects were overemphasized. So, it would be
aspirin, gold, prednisone — that was it. Considering that, now we have come a long way. At the Pediatric Rheumatology Collaborative Study [Group], a consortium that was organized, my memory is that the first one we tested was Tolectin [generic is tolmetin sodium], so I was a part of that. And now of course, PRCSG is one of the model organizations for many other groups in how to organize multi-center studies and how to organize clinical studies. And more recently, CARRA. And the advancement of some of the newer medicines that have come, not only methotrexate, but all the biologicals.

Also, the Park City meetings, originally it was Park City, and it has now become an every-4 years international group. At that time, Europe did not have much of pediatric rheumatology either. Now they have their own group. Just like the PRCSG here, they have PRINTO [Pediatric Rheumatology INternational Trials Organisation]. There’s also greater collaboration between the European group and the North American group. So, in many ways, I think we have advanced our knowledge and improved the treatment. But we still have a long way to go, and we’ll have to talk about that. Maybe we will talk about the future. I would like to say a few things about what I think in rheumatology, what some of the needs are.

DR. BRESCIA: OK, so we’re moving on to question 6, gazing into the future. Dr. Athreya, where do you think pediatrics will go in the next 10 years, also the next 50 years for that matter, and do you think that physicians entering pediatrics today can have as worthwhile a career as you have had?

DR. ATHREYA: I’ll answer the last question first, which is that the physician entering pediatrics today can have as worthwhile a career as I’ve had. My answer is yes. I would add a little caveat after that: they have to shape it. My one concern is whether they will have adequate voice to do so, or somebody else will come through. I have a little concern over that. It’s happening already. They can have a wonderful career, but they have to shape it.

Moving back to the question on what I think will happen — who has the crystal ball? But some things, some ideas do have to occur. I guess as you get older you love to prognosticate. (Laughter) So whatever it is, the general developments in medicine will have an impact on pediatrics. It has to. I’m talking about basic changes. What are some of those I’m thinking about? Examples are some of the things that are happening in genetic research and things that are happening in neurosciences and behavioral sciences. For example, nanotechnology, because this probably will have impact on the way
we investigate. Non-incision surgery — what is it they call it? Orifice surgery [natural orifice transluminal endoscopic surgery (NOTES)], where you won’t even have an incision in the body. These are all things which are going to be a lot more useful to children, by the way. So, some changes are going to happen.

Other general stuff that is happening in society is going to affect the standards of health. Who’s going to pay for the care for these children? What’s going to be the status of the health insurance subject? Information technology is definitely already having an effect. It’s going to have a lot of effect on how we teach, how we practice, etc.

Given all of those things, what do I think are some of the things that might happen? I think there will be more preventive medicine in physical, behavioral, and medical, including, for example, genetic counseling, etc., etc. I’m hoping that with all this information technology there will be more continuity and better continuity of care, better follow-up coordination of care. All of these could be enhanced by information technology. I’m hoping that will happen.

And the presence of more women will have some effect on pediatrics as practiced.

I’ve already mentioned genetics and some other things that may happen, and we are already seeing it. We are finding it’s a lot more complicated. There is already controversy as to which way to go. I understand that big people are wondering, “Ten years, we haven’t really gained anything.” Well, we gained some, but it’s not as it was touted out to be. There are people who feel we should not bother spending time looking at the common problems, just look at only unusual problems where you can find better knowledge than just trying to do the snips and all this kind of stuff in different places. How that will affect things, we don’t know. But our understanding of the signal transduction pathway may lead to more precise drugs which will be useful for children. Mental health, I already mentioned.

Oh, the other thing that I think may happen is with immunizations. How many immunizations can you give any human being? It’s not my words, it’s actually Dr. Bongiovanni who said that many years ago. “Are we creating immunologic pollution?” It’s an interesting thought, because now they are talking about dental [caries] vaccine, for example, and malaria vaccine. This is wonderful. I’m the one who said earlier that immunization is the best thing
that happened. But now I am saying that we are taking children, when we don’t even understand the development of biology in the immune system, and we alter it by giving so many immunizations before they are exposed to their natural environment. Can you keep on doing it? Putting it another way, is there some other way we can alter the immune system to prevent diseases other than to keep on giving immunizations for each infectious disease that you find? So that’s what I’m trying to say. That may be a direction which will be good. Imagination at this point.

I want to go back and elaborate on one point about the future. One of the concerns is, will all the children be covered with some kind of health insurance? Cost of care is clearly escalating, with more and more tests, and more and more medications, which are very expensive. It’s going to be hard to cover all of these expenses. So, which direction are we going? I’m not sure at this point. What I obviously would like to see is that all the children are covered. That way, we can also implement some of the preventive medicine that would be best to support the physical, mental, and behavioral areas. So that is a concern.

DR. ROSÉ: To pick up on that aspect, could innovation or some other initiatives allow for a more rational use of those technologies and that way find some cost savings by utilizing those techniques only when they are necessary?

DR. ATHREYA: Absolutely, yes, yes. I think it’s going to happen already. I think there is some approach already being made. Every time a new medicine comes, or every time a new technology comes, it is not possible to give it to everybody. There has to be some evaluation of these as to the usefulness and the effectiveness before you can say, “Yes, we will pay for it.” Now, this is where it gets political. I don’t know where it will go. But some kind of a decision tree where we say, “OK, there’s a new test, does it really deliver what it’s supposed to give?” That’s what I said earlier about the media, how they publicize things before things are ready, and people want it. We don’t have enough time to test each one of them for the effectiveness and the efficiency. I think this is happening already as you know in England. They’ve already been doing it for 10 years. Here there’s an effort to start it, but yes, we cannot keep on adding more technologies, more medicines without some control. Naturally, some people would say it’s rationing. That’s where it gets political. But I don’t know how you can indefinitely keep on adding more and more costs.

DR. ROSÉ: Medical education could help. Teaching them how to use
those.

DR. ATHREYA: Yes, but it goes with many other things, unfortunately. Medical education alone, yes. Even now we know there are many tests which are useless. But we’re afraid of many other constraints. This is a social issue. It’s not just a plain and simple medical issue, I mean.

I was talking mainly about pediatrics in general, how everything might influence pediatrics. But what about pediatric rheumatology? This kind of thing gets mixed with what needs to be done. I was making a list, and it was interesting.

We still haven’t totally solved basic problems of understanding what these diseases are. For example, what is JRA [juvenile rheumatoid arthritis]? Now, we keep changing the name. Do we really have a better grasp of what it is? We need more studies to clearly define the various subsets. Is it 5, or 7, or 9, or maybe it’s 21? I don’t know. We don’t know. Until we have that, how we can be sure about treatments? We definitely need a better understanding of inflammation cascade. Now, we didn’t even know about many of these different types 10 years ago. For example, the innate immunity. It obviously plays a part in many of these rheumatic diseases because we are now finding many of the other rheumatic diseases. Some of the patients have some gene defect belonging to the autoinflammatory syndrome. There’s some interplay there which we have to understand. We just need a better understanding of autoimmunity itself, because it looks like we solve it, and then we find there are more gaps.

We need to have a better understanding of vascular biology. We’re doing better now than before, but we still don’t understand. Say, for example, why should some diseases affect small vessels and some of them affect medium vessels predominantly? And even in lupus, for example, someone has vasculitis primarily in the kidney, another one primarily centered in the vessels. So, what is it about the biology of that system that makes it more vulnerable for that patient? We don’t know that.

As I mentioned earlier in another context, I really don’t think we have a good handle on the developmental biology of the immune system. In other words, what are the stages? For example, IgA, we know a little bit about IgG. But, do we have a good understanding of how these things evolve, how they cross over? What is IgD doing, these kinds of things. I don’t believe we fully have a handle on that.
So those are some of the things that are needed. Hopefully, with those and with biological agents and our understanding of signal transduction pathways, we’ll have more treatment. We have come a long way to the point where we don’t see children in wheelchairs and having joint replacement, but I think we can do a lot more than we are doing now. Hopefully, we can truly say this is the cause for this particular subtype of arthritis, and this is what you do.

DR. BRESCIA: OK.

DR. ATHREYA: Gazing into the future again, this is on the educational side. As we talked about already with an information technology point of view, information is available now — very easy, touch of a mouse. So, in medical education, in addition to more emphasis of clinical skills and more emphasis on communication and human relations skills, there has to be an emphasis on how to get relevant information, how to make sure that information is really valid for your situation, for application, and a time to think because we have lots of information. I was just reading last week — very interesting, there’s a whole book on this subject now — and what they are saying is very interesting. Our brain can deal with only so much material. We need information. Without it we can’t make a decision. Up to a point it’s good, and then you lose your advantage because either the brain can think deep with a little set of information or it can think superficially about a lot of information. Which way do you want it is the question? There’s a whole book on the subject. And so, we need to be talking to our students about how to get and how to interpret information.

DR. ROSÉ: Thank you, Balu. So, this is the culmination of this series. Do you think that children are better off today than they were 50 years ago, that means to 1960?

DR. ATHREYA: Interesting question. It’s a tough one to answer. Yes, in many ways, yes. Particularly if we talk about from a physical health point of view, yes. But from the overall point of social, behavioral, and emotional issues, I’m not so sure. I’m a little concerned because of how many external influences, everyone wanting to influence all of us, but particularly children who are very vulnerable. You have things like Internet, which is wonderful. We need that to encourage education, but it’s also taking them away from productive things, play, interacting with people, and, in some ways, they are being brainwashed, bullied. Everything is happening; we know that. So, in
some ways, from a behavioral, emotional point of view, they need more help to be independent thinkers and take care of themselves with great family support. At the same time, you find families are also stressed out. So, from the developmental point of view, I’m a little concerned. But the physical health point of view, of course it’s better.

DR. ROSÉ: And that’s not counting millions and millions around the world for whom we haven’t been able to solve the problems yet.

DR. ATHREYA: Yes. (Laughter) Yes.

I think that’s it.

DR. ROSÉ: OK.

DR. BRESCIA: OK, so this is the conclusion of our interview with Dr. Balu Athreya. Thank you very much.

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CURRICULUM VITAE

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Suite #700
Philadelphia, Pennsylvania 19107

Date of Birth: July 7, 1933

Place of Birth: India

Marital Status: Married (Ramaa Athreya, Radiologist)

Children: Bama, Hari, Sheela

Specialty Certification:

1963 American Board of Pediatrics
1992 Sub-Board in Pediatric Rheumatology
(Recertified in 1999)

Licensure: Pennsylvania, New Jersey and Delaware

Education:

1949-51 B.S.; Loyola College, Madras, India
1951-56 M.D.; Madras Medical College, Madras, India

Postgraduate Training:

July 1956-June 57 Rotating intern, Government General Hospital; Madras, India
July 1957-June 58 Postgraduate student, Wadia Hospital for Children; Bombay, India
July 1958-June 59 Rotating intern, Binghamton City Hospital; Binghamton, NY
July 1959-June 60 Resident in Pediatrics, The Children’s Hospital of Philadelphia; Philadelphia, PA
July 1960-June 61 Senior Assistant Resident in Pediatrics, University of Chicago Clinics; Chicago, IL
July 1961-June 62 Resident pediatrician, Pennsylvania Hospital; Philadelphia, PA
Coordinated program in study of Cerebral Palsy and Related Disorders conducted by N.I.H.
July 1962-June 63 Fellow, The Children’s Hospital of Philadelphia, and Institute for Medical Research; Camden, NJ
July 1963-Dec 63 Research Fellow, Institute of Pediatrics, Madras Medical College; Madras, India

Faculty Appointments:

July 1965-June 68 Associate in Pediatrics, University of Pennsylvania School of Medicine; Philadelphia, PA
July 1965-June 68 Research Associate, Harrison Department of Surgical Research University of Pennsylvania School of Medicine; Philadelphia, PA
July 1970-June 78 Assistant Professor of Pediatrics, University of Pennsylvania School of Medicine; Philadelphia, PA
July 1978-June 89 Associate Professor of Pediatrics, University of Pennsylvania; Philadelphia, PA
July 1987-Dec 87 Visiting Associate Professor in the Rockefeller University; New York, NY
July 1989-Mar 96 Professor of Pediatrics, University of Pennsylvania School of Medicine; Philadelphia, PA
April 1996-June 04 Professor of Pediatrics, Thomas Jefferson University/Jefferson Medical College, Philadelphia PA

Hospital Appointments:

Current Positions:

March 1996-present Staff Physician, Alfred I. duPont Institute. Children’s Hospital; Wilmington, DE.
March 1996-June 2004 Staff Physician, Thomas Jefferson University Hospital; Philadelphia, PA
March 2001 - present Consultant Physician, Pediatric Rheumatology Clinic, NIAMS,
Past Positions:

Dec 1964-Jan 1965  Reader in Pediatrics, Kasturba Medical College; Manipal, India
Aug 1965-June 1968  Assistant Member, Institute for Medical Research; Camden, NJ
June 1968-Dec 1969  CSIR Pool Officer in Pediatrics, Institute of Child Health; Madras, India
Dec 1969-June 1970  Assistant Member, Institute for Medical Research; Camden, NJ
July 1970-June 1972  Clinical Director, Children’s Seashore House, Philadelphia Unit; Philadelphia, PA
July 1970-Mar 1996  Chief, Section of Rheumatology, The Children’s Hospital of Philadelphia; Philadelphia, PA
July 1971-June 1978  Consultant, Philadelphia Naval Hospital; Philadelphia, PA
July 1978-Mar 1996  Senior Physician, Children’s Seashore House, Atlantic City NJ and Philadelphia PA
July 1985-June 1997  Consulting Physician, John Heinz Institute of Rehabilitation; Wilkes Barre, PA

Society Memberships - National:

American Academy of Pediatrics
American College of Rheumatology
   (President, Section on Pediatric Rheumatology 1985-86)
American Association for the Advancement of Sciences
Carnatic Music Association of North America
American Juvenile Arthritis Organization
   (Member, Board of Directors 1987-90)
Lupus Foundation of America
   (Member, Medical Advisory Board 1987- )
American Board of Pediatrics (1997-1999)

Society Memberships - Local:

Philadelphia Pediatric Society
College of Physicians of Philadelphia (Fellow)
Delaware Medical Society
Awards, Honors and Membership in Honorary Societies:

Madras Medical College, India

1952-53 Certificate of Honor - Physiology, Biochemistry
1953-54 Samuel Jesudoss Prize - Pharmacology
1954-55 McNally Prize - Preventive Medicine
1955-56 Allan Evans Prize - Medicine
1955-56 Thambia Prize - Medicine

Teaching Awards

University of Pennsylvania and the Children’s Hospital of Philadelphia/Thomas Jefferson University:
1980-81 “Outstanding Teacher of the Year Award”, The Children’s Hospital of Philadelphia
1987-88 Dean’s Award for Teaching Excellence, University of Pennsylvania School of Medicine
2000 Thomas Jefferson University: NBI Healthcare Foundation Humanism in Medicine Award

The Children’s Seashore House

1991 Mary J. Gerace Award for Extraordinary Service
1995 Miracle Maker Award from Children’s Miracle Television Network

American Juvenile Arthritis Organization and the Arthritis Foundation:

1992 Earl Brewer Award for Health Care Professionals
1996 Special Achievement Award, Allied Services, Wilkes-Barre, Pa
1997 Joseph Lee Hollander Award, Eastern Pennsylvania Chapter of the Arthritis Foundation
1997 Howard Childs Carpenter Award, Riddle Memorial Hospital
American College of Rheumatology:

2000 - Elected to be a Master of the American College of Rheumatology

American Academy of Pediatrics

2002 – James T Cassidy Award, Section on Rheumatology, American Academy of Pediatrics

2003 - Special Recognition Award at the 5th “Park City Conference on Pediatric Rheumatology” held at Snowmass, CO


2008 Distinguished Clinician and Scholar Award, American College of Rheumatology.

Special Course work:
2000 - Attended a course on Medical Informatics organized by the NLM at Woods Hole MA

Committee Appointments:

Member Organizing Committee Park City II and III Meetings on Pediatric Rheumatology. Park City, Utah. March 1986 and March 1991.

Committee on Continuing Medical Education, Children’s Hospital of Philadelphia. 1991-1996


Member, Pediatric Overseas Steering Committee, Health Volunteers Overseas of America 1994-1997.

American Board of pediatrics:

Examinaton Committee:

Member, Sub-Board Examination Committee for Pediatric Rheumatology - American Board of Pediatrics (1990-1996)

Chair – Sub-Board for Pediatric Rheumatology: 1996
Academic Committee at University of Pennsylvania:

1988-1996  Member, Student-Faculty Interaction Committee
1989-1996  Member, Academic Committee for Appointments and Promotions,
           Department of Pediatrics

Special Assignments:

Jan. 7-17, 1993  U.N.D.P. consultant to India. Child health project for “under 5
                years” age group at Indian Institute of Technology, Madras and
                St. John’s Medical College, Bangalore.

Aug. 4-8, 1994  Co-Chair AJAO - 11th Annual Conference, Philadelphia, PA

Nov. 1, 1994 to  Visiting Professor, Department of Pediatrics, Christian Medical
Dec. 31, 1995  College, Vellore, India

July 23, 1996  Panel of Critical Commentators - Workshop on Juvenile
               Rheumatoid Arthritis - organized by the Food and Drug
               Administration, Bethesda, MD

Editorial Positions:

1974-84     Editorial Consultant for Clinical Pediatrics
1983-94     Section Editor for Joint Diseases. Center for Birth Defects
            Information Services. Tufts/New England Medical Center,
            Boston, MA
1986-94     Editor, Pediatric Rheumatology Newsletter
1989 and 1997 Guest Editor, Pediatric Rheumatology, Rheumatologic Clinics of
            North America
1995-1998   Editorial Board, Arthritis and Rheumatism

Editorial Reviewer for:

Pediatrics
Journal of Pediatrics
Clinical Pediatrics

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Arthritis and Rheumatism
European Journal of Pediatrics
Journal of Rheumatology

Co-Investigator of Grant:

1991-94 Molecular Diagnosis and Therapy of Lyme Borreliosis from The National Institute of Health ($300,000).

Principle Investigator of Grants:

1984-89 Pediatric Rheumatology Outreach Program, Office of Maternal and Child Health
1988-90 Estrogen Receptor Research Study, Ronald MacDonald Charities Foundation
1989-92 Role of Sex Hormones in Pediatric Rheumatic diseases - RFP Grant from the Commonwealth of Pennsylvania
1996-97 John Heinz Foundation Children’s Arthritis Network - A grant to develop network of care for children with arthritis in the commonwealth of Pennsylvania

Lectures by Invitation:

March 2003 – Pediatric Rheumatology Conference – Park City and beyond – sponsored by the American Academy of Pediatrics, Snowmass, CO - Seminars on “Periodic Fever Syndrome in Children” and on “Juvenile Scleroderma “.

October 2003 – Invited speaker at the European Pediatric Rheumatology Society at Stresa, Italy - “Syndromic Arthropathy

November 2003 – Seminar on Common Rheumatic Conditions – Annual meeting of American Academy of Pediatrics, New Orleans, La

April 19- 20, 2004 – Visiting Professor, Arnold Palmer Children’s Hospital, Orlando FL

October 10, 2004 – Invited Speaker – American Academy of Pediatrics, National Conference – Seminar on Connective Tissue Disease – Diagnosis and Treatment. (C0-faculty: Doctor Suzanne Cassidy)

December 19, 2004 – Invited Speaker – Division of Rheumatology – Children’s Hospital Medical center, Boston, MA

March 9, 2005 Invited Speaker – Rheumatology Grand Rounds - Hospital for Special Surgery, New York

May 25, 2005 - Visiting Professor, Children’s hospital of Orange County, Irvine CA

September 15, 2005 Invited lecturer on “Heuristics – Clinical Decision Making” at the Annual meeting of the PreS, Versailles, France

October 23 and 24, 2005 Visiting Professor, Sanjay Gandhi Postgraduate Institute in Medicine, Lucknow, India

October 29 and 30, 2005 Invited lecturer at the 3rd Annual Refresher Course in Pediatric Rheumatology organized by the Rheumatology Section of the Indian Academy of Pediatrics – Talks on “Clinical Spots”, Case Discussion and General Management of Systemic Lupus Erythematosus in Children. Chandigarh, India

November 7, 2005 - Discussion Leader in a Workshop on Common Problems in the management of Periodic fever Syndromes - FMF and beyond Conference, Bethesda, Md.


October 2009 Invited Speaker on Becoming an Effective Teacher. Annual meeting of the American College of Rheumatology Philadelphia, Pa

December 2009 Invited speaker on Heuristics in Clinical Diagnosis at the South Karnataka Branch of the Indian Academy of Pediatrics, Mangalore, India
BIBLIOGRAPHY

Articles Published:


Athreya BH, Swain AK and Dickstein B. Acute hemolytic anemia due to the ingestion of naphthalene. Indian J Child Health 1961; 10:305.


Greene AH, Athreya BH, Lehr HB and Coriell LL. Effects of prolonged storage of cell cultures in dimethyl sulfoxide and glycerol prior to freezing. Cryobiology 1970; 6:552.


Athreya BH. The concept of crucial points. Problem Solving 1980; 8:1-3.


Athreya BH and Rose CD. Current problems in Pediatrics; July 1996.

Athreya BH. Vasculitis - Current opinion in Rheumatology; October 1996.


Athreya BH Classification of Juvenile Onset Arthritis J Indian Rheumatal Assn 8 (suppl 1): s11-s16, 2000


20: 121-123, 2002

Athreya BH Juvenile Scleroderma in Current Opinion Rheumatol 14:553-561, 2002

Random Thoughts on Academic medicine: Rapid response. BMJ 328: e publication. 22 April 2004

Elizabeth Candell Chalom1, Breno Periera2, Robert Cole2, Patricia Retting4, Raphael J. DeHoratius5 and Balu H. Athreya . Educational, vocational and socioeconomic status and Quality of Life in adults with childhood-onset Systemic Lupus rythematosus (Long term follow up data from a single pediatric center) Pediatric Rheumatology Online Journal May/June 2004


Monographs:


Books:


Pediatric Physical Diagnosis. BH Athreya. 3rd Edition to be Published in 2009. Anshan Medical Publishers, Kent, UK.


Book Chapters:


Section Editor for Joint Diseases. Center for Birth Defects Information. Tufts/New England Medical Center, Boston, MA.


Athreya BH Chapters on Non-infectious Diseases for 7th and 8th Grade School children – in Text Book on Middle School Health Holt,Reinhar,Winston January 2005