Profile #1
MARY ELLEN AVERY, M.D.
Professor of Pediatrics

BIOGRAPHY

Dr. Avery, Physician-in-Chief of Boston's Children's Hospital, discusses her research into the respiratory problems of premature babies and her discovery that male infants are at a greater risk than female infants. She describes her role as teacher and mentor to medical students, interns and residents, and recalls that when she was young, a female pediatrician encouraged her to be a doctor. Dr. Avery's commitment to demystify medicine prompted her latest book **Born Early**, which outlines for parents the various treatments and procedures used to save their premature babies.

VIDEOTAPE SUMMARY

Professionals Portrayed:

Pediatricians — (M.D.s) — interns, residents and attending physicians

Medical Students

Nurses

Research Scientists — (Ph.D.s)

Technicians

Medical Equipment Demonstrated:

Incubators, Respirators and Monitoring Equipment used in the Intensive Care Nursery

Social Concepts Discussed:

The Significance of Role Models

The Effect of the Women's Movement on Aspirations and Expectations

Decisions and Factors Affecting Career Advancement

The Importance of Collaboration in Scientific Research

Transcript:

Interviewer: You enjoyed your clinical experience, you loved dealing with patients. Why leave all that and go into the lab? Why pursue research?

Dr. Avery: There's really one compelling reason. It's the frustration of not being able to do enough for patients. It's to watch babies just fade away and die when they were born early, it was to watch them have terrible difficulty breathing and not know how to help them. It's ultimately the awareness of ignorance of what you can do that produces a kind of frustration that produces motivation, part of it's anger — anger that you don't know more and can't help.

Interviewer: The Joint Committee on the Status of Women has created and produced this series on women in medicine with senior women professors at Harvard Medical School. Today we're talking with Dr. Mary Ellen Avery, Thomas Morgan Rotch Professor of Pediatrics, and physician-in-chief at Children's Hospital Medical Center.

Interviewer: Immediately prior to your coming to Children's Hospital Medical Center, you were at McGill, a position you liked very much. What were the enticements to come to Children's Hospital Medical Center?

Dr. Avery: I, of course, had been here from 1957-1959 and knew Boston, Harvard and the Boston Lying-In, as it was then called, had some association with Children's. So the first enticement was old friends and pleasant memories and proximity to my own college, Wheaton College, with more friends from that connection, so that it wasn't coming to a strange area. It was coming home in a way, home and yet a more personal way, a summer home in Maine, which could be reached from Montreal as well as Boston, but it was a consideration in coming to Boston instead of the west coast. I'm comfortable in New England. I like this part of the world, but of course, overriding all of this is that Children's Hospital is a pretty remarkable place. I think it is the preeminent Children's Hospital in the world today and the challenge of leading the Department of Pediatrics in such an institution was one that would be hard to resist!

Interviewer: Before we get into a discussion of your research, I'd like to talk about your personal development and of course the most basic question is, why did you become a doctor?

Dr. Avery: I don't think at this age one ever understands that. The question is often asked; the answers depend on the audience to some extent. I can tell you when — that's pretty clear. That was back in about seventh grade, way back in junior high school. I know that I was heavily influenced by my next door neighbor, Dr. Emily Bacon, who was a pediatrician. She actually showed me my first premature baby at that stage in my life, and it made a lasting impression.

Interviewer: Did Dr. Bacon actively encourage you to pursue medicine?

Dr. Avery: Oh, I think she did, subtly, by virtue of her enjoying her role so much. She loved it and this enthusiasm of hers was contagious. I don't think she said "You should go to medical school" but I think I was aware that she was getting an enormous satisfaction out of life and I guess that I thought that might be something that I'd find satisfying, too.

Interviewer: When you chose medical schools, did you apply to quite a number, or did you just choose Johns Hopkins because you liked it?

Dr. Avery: No, I applied to three, I think. I applied to Harvard, Columbia and to Johns Hopkins and Johns Hopkins accepted me first.

Interviewer: And you wanted to go to Johns Hopkins?

Dr. Avery: Yes, partly because Emily Bacon had gone there. And partly because Johns Hopkins had a reputation for caring about women in medicine.

Interviewer: Can you get into why you chose pediatrics? Was there a course in medical school that particularly appealed to you?

Dr. Avery: No, as a matter of fact, I suppose it was the worse taught course at Hopkins. It certainly wasn't anything that Hopkins did that lured me into pediatrics. It was probably somewhat of a distaste for internal medicine (that's a kind of negative reason) but working with the aged who had many problems that seemed to me not solvable by medicine was something that I didn't find as exciting as working with a younger age group where what you do might have a 70 year payoff and I got excited by preventive medicine. I like to keep people well. Pediatrics is the practice of preventive medicine.

Interviewer: Now on to your involvement with research. You enjoyed your clinical experience, you loved dealing with patients. Why leave all that and go into the lab? Why pursue research?

Dr. Avery: There's really one compelling reason — it's the frustration of not being able to do enough for patients. It's to watch babies just fade away and die when they were born early, it was to watch them have terrible difficulty breathing and not know how to help them. It's ultimately the awareness of ignorance of what you can do that produces a kind of frustration that produces motivation, part of it's anger — anger that you don't know more and can't help.

Interviewer: Along those lines, what are your current research interests and how did they grow out of those initial stages of working with newborns?

Dr. Avery: Well, we're exploring the hormonal regulation of lung maturation. We're pursuing and finding some exciting information about why the male infant is at such a disadvantage compared to the female with respect to susceptibility to a number of pulmonary problems and infections as well. The male/female difference has been known from time immemorial but it's only now that with the help of some pretty talented colleagues, like Dr. Barry Smith and Dr. John Corday, that we're beginning to unravel that question. I think that what's more crucial is my own sense of satisfaction in my research career and the good fortune I've had to excite other people to work in similar areas. I think the greatest reward is my trainees — seeing what they've been able to do.

Interviewer: Let's talk a little about the teaching side of your day. Do you deal with residents quite a bit?

Dr. Avery: Oh, extensively, yes.

Interviewer: In what ways?

Dr. Avery: Well, the house staff is on the front lines of patient care — they ultimately make the decisions that affect the patient most directly. They're the only people who write orders in the order book, for example. So if you care about the quality of patient care, you must care about the house staff. So being involved with the house staff is probably one of my most major functions. I do it through a lot of delegation of course — it's not only my input, it's the whole department's input. But I meet regularly with the chief residents, at least weekly or more often. I meet regularly with the senior residents, again at least weekly throughout the year, and hear from them what's on their minds, hear from them about their problem patients, about any difficulties they're having with other services, for example. Once in a while the surgeons make pediatricians a little mad and tempers can flare on both sides and there is a certain role of peacemaking that comes to me. But largely, it's making sure that the residents know that somebody cares about what they're doing and knows them personally and can provide them with, more often, positive feedback than criticism.

Interviewer: Can you describe your typical day as administrator, teacher and researcher at Children's Hospital?

Dr. Avery: There's no such thing. Maybe that's one of the pleasures of the job. No two days would be more different than two of my days. The proportion of time teaching fluctuates with assignments on the wards where it could be rather extensive. Medical student lectures sporadically throughout the year, not on a continuing basis. The administrative assignments also fluctuate. There is something called "prepare the budget season" which takes on more administrative input than the summer season would, for example. The committee assignments have a way of heating up and cooling down. There are sometimes some big decisions to be made that take a lot of consultation, a lot of administrative time.

Interviewer: Coming through the ranks there are certain hurdles you have to jump to get promoted to the next step, etc. How consciously did you plan these jumps in your own career?

Dr. Avery: I was very aware of them, and I certainly would have been badly put out if they hadn't come at the right time. It's very obvious. You can see what other people are doing. You know what's required to be promoted. This is a part of the small talk of life. The necessity to publish is very evident to anybody and anybody who doesn't do it is not producing the product of scholarship and so even as a house officer I was doing some clinical research. I think I published four papers during my residency years that were built around pursuing ideas that were stimulated by patients, expanding it, talking to people, and finally publishing. I rather enjoyed that. I enjoyed it, but also knew that it was the ticket to academic advancement and the other step — going into the laboratory — was also a ticket; that doing research, gaining independence as an investigator, the ability to bring in grant support, establishing your name in the field, going to meetings, talking, speaking up, it's perfectly obvious what's required in academe. I'm always amazed when someone tells me they don't know what's required. All I can say is where have you been? Open you eyes and look around.

Interviewer: You're also working on a book, which I think you define as part of your leisure time as well because it's a book for the lay public. Could you describe that project?

Dr. Avery: There's been a very dramatic change in the care of small infants over the last decade. It's called neonatal intensive care. It's been written about in a lot of the lay magazines. You can imagine that when a mother has a baby who is then transported to an intensive care environment with lots of high technology, machinery, flashing lights, people running around, the baby seems to be suddenly a piece of the equipment and not a baby. This can be very alarming to parents. Also if they read about the outcome of premature birth in any book that isn't written before the last five years, they'll get the wrong signals. They'll be told of all the problems and they won't know of the successes. We want to humanize that experience. We want to involve parents and we want to explain to them what's going on. They need to know why we do what we do. Now we can spend a lot of time one-on-one explaining that but that takes a lot of time. I wanted something that would be an amplifier to my time — something that the parents could read that would be written in the same tone that I would talk to them. They would ask me questions and I would answer. This is being done with the help of a splendid photographer named Georgia Litwak who photographed all of the equipment and the baby. So we have one baby growing old in time. Instead of a cross-sectional view of lots of babies, we're tracking one and as she grows and develops, Georgia gets her picture and I explain what she's doing and why she's doing it and what we're doing and why we're doing it in laymen's terms. It's a lot of fun!!!

Interviewer: In looking at your life, I can't help but wonder how you've coped with the times when things weren't going so well, and what advice you'd give to people, and what people could learn from your life in a total way, rather than just looking at the climb of your career.

Dr. Avery: I don't know. That's a pretty complicated and sweeping question. Hanging in there is key, I think. Knowing what you want to do and not being easily discouraged is key, particularly in research. You're always moving into the unknown and you can spend months trying to prove something only to find that you made terrible mistakes. You have to be willing to say six months of my life and my hard work went down the drain. And you have to start over. That's terrible discouragement. You can either quit or say I will start over. If it's a question that's worth pursuing, it's probably worth continuing to pursue. The question when to hang in with persistence, perseverance and hard work, when to quit, or when to change course, of course, is a complicated decision, but I think that in the area of scholarly activities one has to have an enormous amount of perseverance. That's key.

Dr. Mary Ellen Avery
Vocabulary

hormonal regulation. Control of the function or development of an organ within the body by specific hormones; e.g. in the male: testosterone slows the development of the lungs.

intensive care unit. Either nursery or surgical ward with advanced technology and specially trained staff to monitor critically ill patients.

lung maturation. Lung development of the fetus/baby prior to birth.

neonatology. Concerned with the medical care of infants from term birth to four weeks of age; often used for the care of premature babies.

resident. Physician who has completed medical school and internship; the residency period can be from one to four years depending on the medical specialty — a "Chief Resident" is usually in the last year of training, and assumes responsibility for all the physicians and medical students below this level.

Dr. Mary Ellen Avery
General Questions

1. Why did Dr. Avery become a doctor? a pediatrician?

2. How early did an interest in medicine emerge?

3. What does Dr. Avery find rewarding and satisfying about her career? Has her career fulfilled the enticements that drew her into her career choice?

4. What hurdles had to be jumped to gain promotion through the ranks?

5. What advice does she give for coping with obstacles and finding success?

6. Who was the individual that was so influential, in her decision to enter a medical career? What other event, in her adolescent years, had an impact on her decisions to pursue a career in medicine?

7. What are the personality traits illustrated by Dr. Avery which are essential for a career in academic medicine?

Dr. Mary Ellen Avery
Science Questions

1. What were the forces involved with Dr. Avery's decision to leave clinical practice and enter the research lab?

2. List the responsibilities of a pediatric physician. What are the responsibilities of an individual doing research in pediatric medicine?

3. What is the current research area that Dr. Avery is involved with? What are some of the new findings in this area of research?

4. What are the other responsibilities of Dr. Avery at the Children's Hospital, besides research?

5. Dr. Avery is writing a book. What is the name of this book and what purpose will it serve? Why is there a need for this type of book?

6. What is the relationship between medical research and the practicing physician, with direct patient contact? Why is this link so essential?

7. The ability to pursue complex research issues is dependent upon a number of traits. What do you feel are the most important characteristics of a successful researcher?

8. Dr. Avery's current research involves an investigation of influencing factors on lung maturation. What factors can influence lung development? From what embryonic tissues do the lungs develop? What ultimately controls lung morphogenesis? Can you propose a model that might explain how some exogenous or endogenous chemical compound could initiate abnormal lung morphogenesis in the fetus?

9. How would you define preventive medicine? Does your definition align itself with Dr. Avery's?

Dr. Mary Ellen Avery
Social Studies Questions

1. Describe the development of Dr. Avery's career and the influence of role models, mentors and support systems.

2. What influence did Dr. Avery experience from any of the five sociological institutions (education, family, religion, economic or political)?

3. What assumptions about traditional roles for males and females are challenged by Dr. Avery's experience? What issues are raised or implied?