

## American Medical Informatics Association Nursing Informatics History project

### Purpose

The overall purpose of the Nursing Informatics History Project is to document and preserve the history of nursing informatics.

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**Linda Thede**

Linda Thede: Oh, my name is Linda Thede I got my baccalaureate in nursing in 1960, a master in maternity nursing in nursing education in 1979 and I got my PhD in 1995 and currently I am editor of CIN Plus and I am author of a book *Informatics in Nursing Opportunities and Challenges*.

Interviewer: First, the basics—how would you describe or define nursing informatics?

Linda Thede: It would depend on the audience... I would define nursing informatics depending on my audience—if I were talking to a lay person and this happens and they say “what do you do” I describe nursing informatics as the management of nursing information generally using a computer. Now if I’m talking to nursing informaticists we get to talking about it can really improve patient care and looking at more or less the outcome of informatics versus what goes into it—because I really think that’s the concern today.

Interviewer: Briefly describe your career in nursing that led to your involvement in nursing informatics—how were you first involved.

Linda Thede: My first involvement in nursing informatics really came about because during my masters program I took a course in Educational Uses of Radio and TV—and I became very excited about what you could use a video for, I’m a visual learner and I could just see how we could really tape the procedures and really show what was happening. So when I got all done I wanted to do this. And one of my former classmates who was then at the University of Texas in Austin said “you don’t want to do that Linda”, I said “why not?” she said, “because it’s all going to go to interactive video.” Well at the time she was working with Gary Hale—who was one of the real pioneers in our nursing informatics and she said “it’s all gonna go to computer and everyone is gonna know how to do the video and no one will know how to do the computer.” Well this was not in my plans—but I thought all right, I know she’s probably right, because she is, even though she was a classmate of mine she was kind of one of my mentors and so I started paying attention to things about computers and a little while later we bought a home computer

and then at one point I was at a nursing conference with a person with one of my classmates of my masters program and she was talking about problems and I said “Jackie, you need to hire somebody who will look into how you can use computers in your education program”, because she was the director of a school of nursing. She looked at me and she says, “You’re hired”—I said “Uh!” I said “I never touched a computer before in my life”, she said don’t let that bother you, the men take jobs all the time when they don’t know what they’re doing.” So, she hired me. And I started out by doing literature searches. And there was very little—you could barely find the word computer. I don’t even think it was indexed at that time. But at that point, then I came across Gary Hale and was one of the first subscribers of *Computers and Nursing* which at that time was a blue mimeograph sheet and I think I still have all of those except one. And it really was kind of a news of what was going on. And then because I was involved in the educational end of it—I ended up at some of the earlier education conferences, the Association for the Development of Computer Based Instructional Systems—that was a, that was a great group. And their magazine helped me through my dissertation I will tell you—it’s too bad the group is gone. But we used to have great meetings. And they really were interdisciplinary. But I met some very interesting people at those meetings—like Kathy Miken and we got, and Kay Hotsen, Carlton-Hodson, we kind of cohered with and we’d go back to these conferences. And then in those days if you wanted something done, if you wanted a program for people to use you had to write it. So I taught myself Basic. But I did that because at that time we had an Apple and you’ve got a big manual with the Apple that taught you how to do Apple Basic. And then I would go to the Apple User Group and I would look around the room and listen to people talk and I would pick out some gentleman who spoke English (i.e. was not technically oriented) and I would corner the poor guy and make him teach me things. I’d also go to the store where we bought the computer and get the salesman to help me program. I came to a point where I needed to use arrays—and one of the residence in the hospital when I had worked labor and delivery I had worked with him and he’d talk about computers, in fact the first time I ever saw an Apple computer was at his house when we still used the old tapes. He had a tape to put things on the computer. But he’d done some programming—it was interesting because he was thinking in terms of how to use the computer in his medical practice. So he was working on something that would tell him when this patient needed their next x-

ray, when they needed their vaccinations and things like that. So he was really far ahead. But he knew how to program. So one afternoon the two of us were locked up in a room and he would help me learn arrays. I can still see him sitting there working on what he was working on and then he'd come over and help me—so he helped me like that. So I really kind of picked on people to help me learn. And then finding the School of Nursing, a couple of the PEDs instructors were complaining—they said “well we have to do this pre-test and we really, you know it's such a pain to do it.” And I said “well I could put that on the computer”, well I couldn't—I didn't know how, but I knew it could be done, so I figured it out, captured a neighbor made him spend an afternoon with me teaching me how to send files to the disk and how to retrieve the information from the disk—so I really kind of picked up my information that way. And I really was involved in the CAI end of it—one of the interesting experiences I had which really helped me see user viewpoint was I designed a computer assisted program for teaching students some of the math, which of course is one of the first things that people will turn to when they want to do CAI. And this program, threw numbers up for random, it allowed the student to either, to pick any formula they wanted to use to get to the answer or allow the instructor to set the formula that was used. Well you had to enter your name—well the last name I only used 12 characters for. And one poor little freshman came up to me in tears—“the computer won't accept my name” I thought ‘ooh...I said, it's not the computer, it's me and I will fix it.’ I mean the poor thing, she thought she'd broken it or that she'd done something wrong and I realized that you have to be very, very careful about how you set things up for users. And I kind of moved on from there. And then we left Kalamazoo and moved to Cleveland and I decided I wanted to do some consulting and I sent my resume out to all the schools of nursing and I ended up working at Lakeland Community College doing consulting. They had just received a grant from Excellence from the state of Ohio and they hired me to help them implement in computers, that's what they wanted to do. At that time I still belonged to ADCIB (Association for the Development of Computer-Based Instructions) and they had—well it wasn't a list server, it was a forum and we used the old...I cannot think of the name of the outfit in Columbus—it's Com-something or other, it was like Prodigy, it was one of the early networks but in those days you could only talk to people who were on your network. And there was a forum—so when I would have a question I needed answered I would go to the forum and ask the question, I would

get information back from people who were not vendors they were users and so I would come out looking like a rose. And I remember one of the things I, I said to the faculty, I said to the Dean, I said “you know if you want faculty to buy into this you’re going to have buy laptops that they can take home and work on.” So I figured out what was the best laptop at that time—was the good old Zenith, 17 pound Zenith and I hauled that baby all over the country! But it really worked. They took it home. And then we started teaching a class just using word processing to their students for an elective class. And then I gradually moved that into being the instructor that was there and I kind of helped her the first time she taught it and then after three years the money was gone and I moved on and I ended up at Kent State and I was hired there as the media consultant on a grant with a person who really did not understand the computer and she was a little upset—she said “I don’t know what you’re gonna do for us” and at that point I’d become acquainted with databases, because one of my jobs as a consultant was to keep track of what we’d spent and the vendor information like that. So I was using Reflex which was an old flat database and it was the precursor to Paradox and from using that flat database I began to realize the problems with a flat database—that is okay so we bought two pieces of equipment from this vendor, well what did you do did you put in another field, no that’s not too good because how many fields are you gonna put—well did you enter the data twice, well I guess we better do that, but then you enter errors. So when I finally heard about a relational database I thought hmmm, I think I’m gonna try this out. So I bought a copy of Paradox and I remember I set aside a whole morning to learn how to relate tables it took 10 minutes. I said wait a minute! So by the time I was asked this question “what are you gonna do for us” I said “well what I think I can help you do is, you know you have your graduate students, they go out into the, you know they have patients, they have preceptors and they take care of patients—well how about if we set up a database of the nursing diagnosis that they have for their patients and along with their interventions”. Well she wasn’t too wild about the idea, but one of my colleagues was. So we actually set this database up. I think one of the interesting things that came out of that was that the students and these were bright young women—really could not see why they were putting the data in and how it would come out. And I think I began to realize then that we need to do some education. So I ended up teaching an informatics course to the graduate students as an elective at Kent State and I emphasized databases pretty heavily in there.

But it was mostly an application course. But it was interesting because after they graduated and they were asked you know what was the most important class you took here—and many of them said “the nursing informatics course” and really basically I was teaching them applications with a smattering of informatics particularly the languages and how the standardization could help us get information out about nursing. So that was how I got involved.

Interviewer: Dr. Thede, did you have an “aha” moment when you realized the value of informatics—how did you come to understand this value of informatics.

Linda Thede: I think I began to see the value of informatics when I began to see the power of databases. And how I think that nursing tends to get side, well looked over—we are the mother, the wife of the hospital. And I kept thinking if we could only pull out what we we can help people see the value of nursing and perhaps not be so quick to replace us with techs. And I think the studies that have come out since then that show that when you have higher level of RNs that you have less morbidity and mortality have shown that. But what we can’t show is why. And I think the databases can show that.

Interviewer: Dr. Thede, when or do you—when did you first consider yourself an informatics nurse?

Linda Thede: When did I first consider myself an informatics nurse—I don’t know if I do right now. Because I’ve never really been in the hospital or in an acute care setting and gotten my hands dirty actually designing a system or working with users. What I’ve really been is more on the backend giving people the skills they needed to go in and either use the system or many of my students went on to become nursing informatics people. And I saw my role more as that. Because I was a little bit older and by the time they really got into heavily into this in the hospitals I was thinking well I think I want to cutback not, not move on.

Interviewer: Let’s talk about your personal aspirations, your accomplishments—did you have an overall vision that guided your work?

Linda Thede: Not really, I did not really have an overall vision I think that I just kind of went along with where the need seems to be. I've been told that I have great ideas. And when I see a problem I like turn over my mind how it can be solved and this I think is where I saw the value of informatics and one of the other things I'm very proud of is that I was one of the original people who help start the online journal of *Issues in Nursing* and I recall that was such an interesting time because we were all so naïve. We thought well okay September we'll have the first issue out in December—well it isn't that easy! We didn't have the first one out until June and there was a lot of work that had to go on behind the scenes. We had to get an ISBN number and do many number of things to make sure that we sure that we would be in the bibliographic databases, we had to get authors. One of the strengths of that group always was that we all had a different national network. So that we could draw on people from different networks to write the articles. So I was very proud of my role in that—and again that was having an idea. But I think again, I remember when we decided this was going to be a journal on issues in nursing and everybody is still thinking print journal—how does the print journal do it. Well you have your volumes, you know and your issues and you do that. And I kept thinking that is not going to work in an on-line atmosphere because nobody wants to leaf through, you know click through each one to find the article, so I said we will organize it by topics and we will have the topics listed for people to select from and then they will go down and see the articles that are in each topic. And I said that way people can look up—for example we had one on Classification of Nursing Data, they can go and start from what the thinking was back when we first put this issue out and follow it on up to the present so that all the information you need is in one area. And that again I think is a use of informatics to make information available to people.

Interviewer: Dr. Thede, who were some of the people you collaborated with to accomplish your vision and goals—you mentioned a few of these people but anyone else you want to talk about and some of the memorable experiences you had with them.

Linda Thede: I think one of the most memorable experiences had to do with my experiences with Kay, Mike and Kathy and Kay Hotsen. We met out in Spokane and at Learning Resource Center Conference. And I remember Kathleen said to the two of us—none of us knew

each other very well, she said “what are you gonna do for the Informatics Conference the Nursing International one in San Antonio” we kind of well—we hadn’t thought about it. So we sat there and came up with an idea that we get our students each of our graduate students talking to one another and I said “well we’ll get a list serve going” well okay. So, I went back and I knew, again I didn’t know how to do this, but I knew I could get the information—got it set up, we called a grad nurse, but from that we did a presentation at NI 94 and then we went on to do one at the Nursing Informatics at the Learning Resource Conference. And what was so really funny about that was we thought well how we can help people understand that the internet is absolutely nothing more than another way of getting information. So we came up with the idea of playing kind of a different roles, looking at roles of nurses through history, we started back with the monks and I can still see Kay in her Monks outfit explaining I was the moderator asking the questions—well I just care for the patients...and I would say “well how do you get your information?” She would say “well I just learned from doing and from the other nurses.” And moving on up from through the Sairy Gamp and Kay, Mike and the Sairy Gamp was hysterical. And then we moved onto Florence Nightingale and it came on like this—the whole objective was to show that the internet is nothing more than a way to get information. But the real payoff was we wanted to show the future. So I had been in a nursing informatics list server and I knew this Jack Hansen that he had—you know he was kind of far out so I thought I’ll write to him and ask him ideas about the future. So he comes back with this idea of these bots and how we’ll be able to get information on everything and how it will be push to you. And I remember I sent it to Kay and she said “is this guy for real?” [giggled] This was only like you know in ’95 or ’96—and we thought these ideas were really far out and now here we are with blogs and things like that and you can have this information pushed to you. So I mean he was really far out, but it’s amazing how—we were certain he was nuts. So, that was one of the very interesting experiences that I look back on.

Interviewer: What do you see as the significant events that have shaped the field of nursing informatics?



Linda Thede: Two of the most important events in shaping nursing informatics were the start of an actual formal nursing informatics program at the University of Maryland and the ANA recognizing nursing informatics as a discipline. I mean I know one of the programs that I used to go to was a conference at Ohio State University on informatics—it was great, run by Pat Schwerian. They got a new—this was back in the early '80s, they got a new dean who came in and said “informatics, that nothing” and threw it out. And so I mean we really had a difficult time getting people to see that this really is a field. And I think back to Harriet Werley who in 1962 got the American Nurses Association to at least make a resolution that nursing data was important. And I think that and that was a long time between that and the rest of this, but at least she laid the ground work for us to see it. But it was so important that a formal education program was started in informatics and that the ANA said “hey this is a discipline and we are going to have a certification in this discipline.”

Interviewer: What are or were the most important questions addressed by research related to nursing informatics. And how has funding influenced the research agenda in nursing informatics.

Linda Thede: How has research influenced nursing informatics—I'm not certain at this point that it's done too much influencing. I think that nursing terminologies were important, but one of the difficulties in nursing is funding. And I think this maybe one of the reasons why as we sit here today in 2007 we have so many different nursing terminologies—but it's difficult to move forward with them because of the funding. And I really see that as a difficulty. Whereas I see that nursing informatics itself really can improve patient care, once we get down to the user level and I am a great proponent of a clinical nurse being able to ask questions about her practice and about the practice on her unit. It's very easy to say the nurse can do this I mean the nurse manager—but I think if we want to have nurses who will reflect on their practice and really learn from what they've done, they have to be able to pull up aggregated data on what they've done. And the only way this can happen is with nursing, is standardized nursing terminology.

Interviewer: We sort of talked about this, but when you think back to your first involvement in informatics what were some of the earliest events you recall?

Linda Thede: Some of the earliest events that I recall in informatics were probably the Computer Assistance Instruction Conferences that I went to. Because really there were quite a few of us involved in that—and they were exciting because you got people—well those conferences were, I hate to use the word wild, but they were exciting because you had pre-thinkers and ideas would float around and we'd all do fun things and laugh and just have a good time in general. I think one I remember in particular was one evening in at a bar talking about various things and we, you know you get off base when you've had a few drinks and we talked about well what will do when we retire—well we were going to all of us build an old ladies home overlooking the Pacific and if you looked in you would see us sitting in a rocking chair knitting but inside we would be using computers to rob banks. That was one of the fun things that we did—it was really funny. We were going to take the money and use it to further nursing informatics so we were not going to use it for our own benefits—but that was one of the fun things that we talked about. I think you were there Dr. Newbold at the time! She's laughing!

Interviewer: How has the field evolved? Are you surprised at how the field has developed?

Linda Thede: Oh has the field of nursing informatics evolved? Unfortunately I see some of the same problems that existed 25 years ago still being with us. One of the things that we've overcome is at least now we have computers that are powerful enough to take care of nursing documentation. I think back in the 70's nursing documentation was attempted—but it became unwieldy. The state of New Jersey attempted it in their public health but it was unwieldy because the computers simply could not handle all that data. So I think what you've seen is evolving of the computers and the strength and the power and then along with it you've seen people becoming more accustomed to using computers and becoming more familiar with them. But I think we still have not gotten down to the nursing documentation point. And that is so important. But the evolution has really been in the hardware and now it's time to get down and look at the software and how we're gonna help nurses and not impede their workflow but improve their workflow.

Interviewer: What kind of lessons have you learned that you've learned that you would like to pass on?

Linda Thede: What lessons have I learned that I would like to pass on? I think I would like to help people realize that you're not going to know what you need to know when you start a job—but you can learn it. And to take advantage of user groups, of list serves, of conferences and network, pick brains and then come back and figure out how you can use the information. Don't be afraid to take on something that you've never done before. You can learn how to do it. The trick is in finding out who knows it and picking their brain and if necessary, cornering them and making them teach you! That was some of the things that I did when I learned how to program.

Interviewer: Dr. Thede where do you think the field is going, what opportunities or roadblocks are ahead?

Linda Thede: I think the field of informatics is—I think it's such a big field now—you know nursing informatics, they're so many different areas that you can get into. But I see the big advancements coming in nursing documentation. And I see that involving helping the nurse on the floor who is overburdened understand the need for standardization and helping the informaticist put it into a documentation system so it's usable—so you can get information out and we can show the value of nursing so we don't talk about what we think our outcome sensitive to nursing. Well that's very nice, but why, what is it the nurse does that makes the difference—and we can't get at that information until we can pull information out of documentation.

Interviewer: Is there anything you would like to say about the limitations of the field for nursing practice?

Linda Thede: I really don't see limitations—I think the field of nursing informatics is going to continue to grow. I see now that people are actually hiring nursing informaticist, I see that when they graduate with degrees they're actually in demand. I don't see—the only limitation I see is anything that we put up for ourselves. There is no limit to what we can do with it in my vision.

Interviewer: Why do you think it's called nursing informatics—what are nurses bringing to the party?

Linda Thede: What do nurses bring to the party in terms of informatics? It's easy to call it healthcare informatics and it's been called medical informatics but nursing is different. What nursing brings to the table is the patients' point of view. I think nursing is always been concerned with the patients reaction to things—how do we help the patient cope. We're not—nursing itself is not necessarily looking treatments, we're looking at how to help the patient cope. That is a very important piece. And I see us involved in consumer health, I see us involved in the personal health record because we bring the viewpoint of the patient.

Interviewer: Those are the questions that I wish to ask you—but now you have the opportunity to talk about anything we might have missed. Something about—that makes you unique in the field of informatics, educational informatics, anything we forgot to cover, something you just remembered, maybe some person or event you'd like to honor or talk about.

Linda Thede: I don't know I think we really have covered the water, covered the waterfront. It's a very interesting field and I—sometimes I wish I was 30 years younger so I could build on what other people have done! To talk about some of my heroes though—Rita Zeilstorff, I mean she has been so active in getting terminology down. Nancy Staggers who has involved with usability and that is one of my big bugs is usability. And I think that is so important. Until systems are usable in the clinical area and follow the workflow, we are not going to get by in. Because you cannot add one more chore to the nurse in the clinical area. We all talk about how nursing but do we really bring into it what the nurse on the floor is really has to do. She is under the gun, we sit back and pontificate, she/he are under the gun and we have to help them get out from under the gun.

### **End of Interview**