

## 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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**Susan Matney**

Interviewer 1: Susan, can you give us your name—your full name, your education, and your title?

Susan Matney: My name is Susan Matney, I have a master's of science in nursing informatics, and my title is I am a clinical terminologist.

Interviewer 1: First, the basics. How would you describe nursing informatics?

Susan Matney: Nursing informatics is the connection of nursing science and computer science and knowledge, and being able to put that into practice for nurses at the bedside.

Interviewer 1: Briefly describe your career in nursing that led up to your involvement in nursing informatics.

Susan Matney: I'd been in nursing for over 30 years. I started as a nurse's aide, and gradually moved through LPN, associate's degree, bachelor's degree. I became the director of nursing of a very small hospital—38-bed hospital—and I was over the pharmacy. And at that time, we had a mainframe, and they wanted to know how to charge for the pharmacy—for all the meds that they administered. And so I went in at that time and used Lotus Notes, and keyed in every single drug that we had in our pharmacy, and I put in all the formulas for them to be able to calculate wholesale price to retail price, so that they could charge the patients in billing. Then I went to be a nurse manager over Labor and Delivery, and I developed my first little database that tracked all of the deliveries that we had, and any complications that they had, and their length of labor, so that I could go in and start collecting some statistics on my deliveries. That's how I started before I went into school for nursing informatics. And then I went to school at The University of Utah—nursing informatics—because I liked computers. I had no idea what I was getting myself into. What I do now—I had never even heard of at that time.

Interviewer 1: Did you have an “aha” moment when you realized the value of informatics?

Susan Matney: I've had many "aha" moments, and I'll tell you three. The first one was I started as an implementer, and I went and implemented an application inside of clinics, and being able to talk to doctors, and then see what they liked and disliked about the application, go back to the developers and say that we need this and we need this, and then go back to the providers at the bedside and show them that this is what we had done that they had asked for. My "aha" was: "OK, I am connecting between practice and computer science, and communicating with both." That was the first time. The second time is I had a great mentor. I still have, and that's Stan Huff. And when I could finally understand what he was saying, then I knew that I was practicing informatics, because he is brilliant, and a brilliant informaticist and it was really quite fun. The third, and the last thing I'll tell you—because there's a whole bunch of stories that I could tell you about—is when I started doing terminology, and I would look at the form and help the analysts to do terminology and create a model, and then help, and then they would create their application. I went to a presentation, after the application had gone live, on all the statistics that they had gathered, from the data that I had coded in all these hospitals, and I realized that I had had an effect and helped with patient care and the outcomes, because they could go and measure what I had coded. And I just thought it was fabulous that I had made a big difference in patient care and their outcomes.

Interviewer 1: When did you first consider yourself an informatics nurse?

Susan Matney: That's a hard question. Probably when I started attending the Nursing Terminology Summit. I first considered myself an informatics nurse when I started attending the Nursing Terminology Summit. I sat there and looked around the room, and everyone that I had read and studied in school was sitting around the room, and I didn't have any idea why I was there and how I could measure up to them. And I suddenly realized that they were all very academic and had not really put this into systems, and that I knew how to take what they had taught me and put it into an application and make it real; that I was an informatics nurse because I can take what I had learned in school and put it into practice and make a difference in nursing.

Interviewer 1: Let's talk about your personal aspirations and your accomplishments. Did you have an overall vision that guided your work, that guides your work?

Susan Matney: My overall vision that guides my work. I had to write a "why do I want to go back to school and get my master's degree in nursing informatics?" I wanted to make a difference in nursing. I still want to make a difference in nursing. I don't know if it'll be easier, or something that you can measure. I would love for guidelines to be shareable for how you get the data out to be shareable. My vision is for the terminology and the standards to be standardized. I don't think, in the end, we'll have 12 terminologies. I think, in the end, we'll be able to have them, some way, into one. They may be linked together, but I think that, in order to have world sharing of what we do in nursing—not just in the United States, but in the world—that my vision is to help to do that, and to help to model nursing, and to get it out into applications in a consistent, easy way; that they don't have to go and find everything on their own; that we can give them something that they can put in their system that's already ready for them to use.

Interviewer 1: You mentioned one person already, but who were some of the people that you collaborated with to accomplish your vision or your goals, and can you relate any memorable experiences with them? Maybe you can expand upon Stan Huff, or tell us about other people as well.

Susan Matney: The people that have contributed to my career in nursing informatics are many, and I have good friends now. Allan Pryor is very much a pioneer in medical informatics, and my favorite thing that he's ever said to me is: "You need to be the rhinestone cowboy." There's a load of compromising on the road to my horizon, and you have to compromise. You can't always make it perfect. Sometimes you do what the users ask. Allan Pryor was a visionary, and being able to work at Intermountain Health Care and do things in a way that is not even done very many places yet was a blessing for me. Stan Huff—both of these people are not nurse informaticists, but they're the first people that really influenced my career. Then, Sue Bakken—everybody read her. I then met her, realizing that she's a real person, and that you can aspire to be like her. I could go through many,

many names. Marcy Harris has been a good mentor for me. Judy Warren, and what she has done with the standards and how she's influenced standards has helped and guided me into the standards arena, going into HL7. I have.... You want me to go on and on with all the names? Because there's many nursing pioneers that I've been lucky enough to work with. Amy Coenen, and ICNP, and seeing how things work together with International Classification of Nursing Practice—how that can be helpful in bringing together all of the terminologies has enlightened me. Is that enough?

Interviewer 1: OK. What do you see—and this can include your personal achievements—what do you see as the significant events that have shaped the field of nursing informatics?

Susan Matney: The significant events that have shaped the field of nursing informatics. There are.... The first thing that happened is it was defined as a specialty, as a nursing specialty. And so when I first started in school, one of the big events that had happened is the first *Scope* came out for nursing informatics, and I was in school and just read every single word. And it was.... And then the test came out that people could certify in nursing informatics. So that really put a stamp on what we do as something that was really going to be valuable in the future. At The University of Utah, Judy Graves started the program, and I started really studying what that was and what that did. And then I read her article, which is the classic article on what nursing informatics is, and that started me in my career, and puts a stamp on nursing informatics. When I started going to the Nursing Terminology Summit, I've been very involved in LOINC, and had attended all the LOINC meetings, and clinical LOINC meetings. Stan Huff is the co-chair of the clinical LOINC committee. I went to him, and I said, "I would like to take LOINC to the ANA to be a recognized nursing terminology." And he looked at me, and he said, "Why? What does this have anything to do...? Why would you want to have a recognized nursing terminology? The AMA doesn't." I said, "Because this is what nurses use. It's what is recognized by the ANA." So I went through the whole process of doing all the documentation that you needed to and took LOINC to the ANA to be recognized, which it now is, as a terminology for use in nursing.

Interviewer 1: Can you tell us what does LOINC stand for? What is LOINC?

Susan Matney: LOINC is Logical Observations, Identifiers, Names, and Codes. It is a terminology that is used for measurements. It started as laboratory measurements, and now it goes into clinical measurements at the bedside, and is future going into outcome measurements. So we are.... It's continuing evolution, and it is used in systems all over the world.

Interviewer 1: Turning now to research, what were the important questions addressed by research related to nursing informatics? Or what questions are there still to be addressed?

Susan Matney: That's one of the reasons why.... Research is one of the reasons why I want to go back to the school. I know how to develop a really good model. I know how to code it and put it in systems. I want to be able to see if it has made a difference in nursing. So the future of research is to see if putting coded models in systems will be helpful. I can't say anything about funding, as far as research, because I've never gone out and done funding. So, research, for me, is future.

Interviewer 1: When you think back to your first involvement in nursing informatics, what were some of the earliest events that you recall?

Susan Matney: One of the funniest early events was when I was taking my database class with Cheryl Thompson, and I looked at Cheryl, and I said, "I do not know why you are making me learn this. I am never going to use it again in my career." And, so, every day, I go in and I write queries in a database, since I have taken that class.

Interviewer 1: Was there anything happening in the social and political environment that either helped or constrained the development of nursing informatics?

Susan Matney: What has happened in the social and political environment that has helped or constrained nursing informatics? What happens in the world that I am, with nursing terminologies, has both helped and hindered nursing informatics. There are many nursing terminologies that started out in mainframe systems that were used independently—not sent to each

other—but had a big impact on nursing; and that you could measure what nursing did, and made a difference in nursing practice. Now, there are 12 nursing terminologies that are still making a difference in nursing but don't talk to each other. So the future is how to figure out how to get these nursing terminologies to talk to each other but not take away from them. There's been a lot of research that's been done with them, and they show that they're a benefit to nursing.

Interviewer 1: Do you think it has been difficult to establish the discipline of nursing informatics?

Susan Matney: The establishment of nursing informatics has, in some ways, been difficult; in other ways not. In the medical world, I still think it's looked down upon that we are not a medical informaticist, which we really, in my mind, are. I think we understand it just as well as they do and how to connect up all of medicine. In the nursing world, we are looked upon as experts in clinical systems and how to put them in and how to create them. So there's still, in my mind, a bridge that needs to happen between medical and nursing informatics, and some way to be companions and work together with the electronic health record.

Interviewer 1: How has the field evolved? And are you surprised as how it's developed?

Susan Matney: The field has evolved because of the technology. We started out with legacy systems, and trying to put systems in with mainframes, and now we have systems that are connecting together. And so we are requiring more and more standards to connect those systems together. The nursing informatics role has had to evolve because of the standards that are coming forward. We need to understand those. In the beginning, the standards development organizations—I don't think we really cared much about. And then as we realized the impact that it was going to have on nursing, and that we wanted to be involved, and needed to be involved in the standards development organizations, we have started to do that. It's going to be a continuing, evolving field forever—that's the fun of it—because technology is continuing to evolve.

Interviewer 1: Susan, are there any lessons you've learned that you would like to pass on?

Susan Matney: Learn to take your punches. The lessons that I've learned that I need to pass on is: learn to take your punches. It's not always going to be easy. You need to believe what you believe and stand for that.

Interviewer 1: Where do you think the field is going? What opportunities or road blocks are ahead?

Susan Matney: OK. Where's the field going? There are endless opportunities. When you look at the roles for nurse informaticists, there are many, many different roles. You can be an implementer. You can be an evaluator. You can teach people how to do it. You can be on the back end and do systems. You can do analysis when it's done. It's harder to train a nurse informaticist than it is to train a nurse practitioner, and get the good foundation, because you don't know what thread they're going to take when they get out. There are many opportunities, and growing. So, we started more in kind of community health and in the hospital, and now we're getting to the personal health record. The field is growing rapidly. And there are so many things that I don't know that I want to know, and luckily there are getting to be more nurse informaticists. But there needs to still be more, and I don't think it's growing at the rate it needs to with the way that the initiatives are coming forward.

Interviewer 1: Do you have anything you'd like to say about the limitations of the field for nursing practice? But then you went into—which I would really like to hear about—you still working hands-on with patient care.

Susan Matney: So, the question is what are the limitations for the field of nursing practice. As a nurse, most nursing informaticists—and statistics show this—that they go out of the field of nursing practice at the bedside. And so I have continued to try to practice at the bedside, which is very hard to maintain competencies with also technology that is changing at the bedside, with the pumps and what's going on with ventilators. It's hard to stay competent and be a nurse informaticist at the same time. But, you need to understand nursing practice. When I roll in that big computer on wheels, which we call "the big COW," it is not easy to have to go with the computer, scan the patient's band, come back,

give them their meds, scan the meds, do all this stuff, and it helps me to realize what nurses have to do because of these computers that we think are supposed to help them. If we're not careful, it's going to be a hindrance to them. So, I really feel that we need to keep in touch with nursing practice in order to develop what we're doing in the electronic health records.

Interviewer 1: Why do we call it “nursing informatics”? What do nurses bring to the party?

Susan Matney: Nurses understand patient care. Nurses are caring, and doctors are curing. Nurses do the nursing process from beginning to end—the problems, the interventions, and the outcomes. Even when I was a nurse manager, I was the one that was measuring the outcomes for the doctors and saying, “This is what your outcomes are.” The nurses understand all the disciplines and interface with them all the time—much more than the doctors. So, I think that nurses really have a better understanding of what's happening inside of the facilities than a physician does.

Interviewer 1: Now, that ends my formal questions. Is there anything you would like to add, embellish, mention?

Interviewer 2: So, one of the things that I think is unique about your career, from my perspective, is you have really worked with the terminology in a very high-level informatics that are not nurses—Stan Huff, Clem McDonald, those. What is it about working with them that gave you confidence that you really had something to contribute, and you felt comfortable making that contribution? If you share that, others can learn that from you.

How did you gain confidence? How did you have the confidence to really feel like an equal partner at the table?

Susan Matney: That's just.... The way I gain confidence—it's just me. Once I understand it, and believe in it, then I do it. Probably the thing that gave me confidence to do what I do and be assertive—not aggressive—about what I do is that I've seen it work, and I understand how it works. And once you've put it into practice and done it and used it and know that it can happen.... I've had people say to me: “Susan, I know that you can't do this.” And

I have done it. And I can say, “Yes, you can do it.” And I’m not going to say no to it, and I’m going to keep going and make it happen.

Interviewer 2: Good. Second question I have. You have worked for a vendor.

Tell me what that’s like, and how that role has changed in being a nursing informatician working with a vendor. Share a little bit about that for others who might not understand it.

Susan Matney: I have worked in both a not-for-profit system and a vendor-based system. In the not-for-profit application, I had total control over the data dictionary and what went into it, and if I put things in there, and it was a controlled environment. Working for a vendor, we create really pretty nice systems that have pristine terminology, and then we give it to them, and they can do what they want with it. It’s made me have a decrease in, a lack of control, but also worry about standardization and how do we stay standard and maintain what they’re doing with all of the different users that we have. It’s a much faster-paced environment. They are concerned more about making money than they are about patient care. There’s many, many more developers than there are clinicians in the vendor world. That was a hard question.

Interviewer 2: ...from experience. Nurses can work in a variety of positions within informatics. What are some of the positions within the vendor world? And how do people get there, and then, like, what’s the career path for somebody who works in that kind of area?

Susan Matney: What are the nursing positions... within a vendor world?

Interviewer 2: How do they get there, and what’s the career path? And any advice you have for them?

Susan Matney: What are the nursing positions within a vendor world? There are many and varied nursing positions with a vendor world. There are the analysts. You have marketing. You have implementers that go into the facility. I work for Siemens, and at Siemens, they actually hire a person that is going to be the implementer for that facility that is there

for a couple of years, that goes in, in the beginning, and helps them start setting things up, looking at their mission and vision, and working through that. There are administrative roles that go sometimes out of the development environment into administrative roles and overseeing what is going on with the development. Project management is another role that a nurse has. How they get there is—a lot of nurses get there just because they like computers. Most of the nurses are not graduate-level prepared. They have bachelor's degrees, and then they came up through the ranks, and they've used their systems in the hospitals, and Siemens saw them and thought that they were good super-users and hired them. Also, they get there with a graduate degree, but they're harder to find.

Susan Matney: OK. So, the question is how are nurses different, whether they come from the bedside or whether they come from school?

Interviewer 3: Yes.

Susan Matney: And I think it's a shock to both of them, but a different kind of shock. When you come from the bedside and into an IT world, mostly man world, where we came from a woman's world, emotions don't really come into play anymore. It's very logical, and you have to think about how you are going to communicate in a logical way versus an emotional way. It also doesn't understand—you usually don't understand what's happening on the back end. They've seen the front end of a computer, and they know how they like it for usability, but they don't understand why it's that way. And so that training has to take place. Then, on the other hand, those that are coming from graduate school have this pie-in-the-sky about how it is and how it should be. And then we give them a dose of reality and what it really is, and it's not all standardized, and they can't get everything that they want out of it, and they can't measure everything that they think they can yet, and so it's.... And it's not as fast as they think it will be, and sometimes faster than they think it should be. So, it's a different, it's different having either one of them. And both of them need to be oriented and trained, but in different ways. I would rather have someone that has informatics training that is a nurse than someone that does not, because they already have been given the foundation that they need in school.

[End of interview].