

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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Charlotte Weaver

Charlotte Weaver: My name is Charlotte Weaver and my current title is Vice President and Executive Director of Nursing Research at Cerner Corporation. My educational background is nursing, of course and then a Bachelor in Anthropology, a Masters in Epidemiology, and a Ph.D. in Medical Anthropology, and then there's a Post Doctoral Fellowship in Medical Anthropology as well.

Interviewer: Dr. Weaver, how would you describe nursing informatics?

Charlotte Weaver: I think my definition of nursing informatics would be from a very pragmatic side rather than a theoretical side. So it comes from the perspective of having worked in the field from nurses who get pulled into areas that have to do with using technology. And over the twenty some years of my career, that has encompassed nurses informing how technology should be designed, how technology should be used, not just for nursing actually on behalf of a multi-disciplinary team, I think it's one of the areas that's been unique to nurses who have gone into this field as early pioneers and as we continue to work to this day. So the set of knowledge and competencies if you're in a particular area that's informing from a technical side, there's a certain amount of demean knowledge that you have to learn about information systems and information sciences. I think it has to do also more when we start of getting into the blend of knowledge and practicum than how knowledge concepts are represented, so it can start getting into a theoretical depending on what aspect an individual's working in that goes across a very broad continuum of sets of skills that nursing informatics has come to embody.

Interviewer: Dr. Weaver, briefly describe your career in nursing that led up to your involvement in nursing informatics, how were you first involved.

Charlotte Weaver: My nursing career and the evolution coming into nursing informatics, I think it starts with a very traditional career in nursing and doing acute care nursing, practicing nursing within many different settings within acute care. And I think where I got kind of pulled out of that, more into these other extraneous sort of activities was a result of my higher

education, doing research projects that started looking at how do you influence in the education and preparation of future health care professionals for them to take on a broader prospective of patients and an approach to finding out what has brought a person in for care than just a Western medical diagnosis. And maybe in our naiveté in the early '80s, we thought that if we were to design a computerized patient record that would force, as part of the documentation, the question of what is the patient's concern, that we could influence medical students, nursing students and other health professionals to have that perspective and to take that perspective out as working professionals.

Interviewer: You sort of answered this but did you have an “aha” moment where you realized the value of informatics whether or not it was called informatics at the time?

Charlotte Weaver: Informatics as opposed to nursing informatics?

Interviewer: Any kind of informatics.

Charlotte Weaver: Any kind of informatics. I think in looking back at my own evolution and my thinking as a nurse informatician, would not have defined myself as that initially when I was working. My first formal role was with a company called TDS, when I was hired by them to do their future product management, is what we called it in that day and that was really the area of anticipating where the marketplace is going and what kinds of technologies would be useful and helpful to physicians and care team members. But primarily at that point in the early 80s it was focused on physicians. And what I was told when I asked them “Why are you hiring me?” was because, they said “We have tried to design these products without clinicians involved in the conversation or even driving the process and learned that it's easier to have a clinician and teach them what they need to know about technology than it is to try to teach an engineer what they need to know about health care delivery.”

Interviewer: Can we ask you to say that again because there was some distraction.

Charlotte Weaver: Sure.

Interviewer: So why did they pick you to be the nurse on the team, why did they need a nurse?

Charlotte Weaver: In my first role, the value that I discovered, the value of a clinician that is put into an informatics role was from the perspective of the company that hired me that had learned through experience that when you try to design clinical systems without clinicians as part of that conversation, you don't quite get the shoe to fit right. And so what they had decided to do is to hire clinicians to do the front end design work and requirements work saying that it is easier to teach clinicians what they need to know about the technology than it is to take engineers and try to teach them what they need to know about clinical health care delivery.

Interviewer: Dr. Weaver, when did you first consider yourself an informatics nurse?

Charlotte Weaver: When I first considered myself a nurse informaticist, would have been probably somewhere in the late 90s. It took me a while because I had such a checkered career in this area and by checkered I mean that I initially started in the early 80s with the title of a Product Manager for a company called TDS. I went on to be a consultant into that client base to help them with their adoption of the solutions to get full value and benefit. And I was always introduced as a nurse, I was either a nurse-consultant, a nurse-this, a nurse-that but never the name of nurse informaticist. So I came to understand the term nurse informaticist probably in the late 90s after I had done consulting for about thirteen years and came back warrant to a (inaudible) of working in that area of using and designing technology for clinicians.

Interviewer: Let's talk about your personal aspirations, accomplishments; tell us about the overall vision that guided your work.

Charlotte Weaver: I've been a.. the overall vision that have guided my work and the accomplishments that have gone over the span of when I started in this field about 1982 to current, it's been an evolution of working in very applied positions in industry, working inside of healthcare organizations and where I find myself today which is back on the side of industry. And

probably the key influences that have helped shape my thinking and my career along the way, have been come from my professional organization activities. So it is one of the values that's hidden in not as obvious as to why when you're working in a particular position whether it's in a hospital or in an industry for a company or even a university, that you absolutely want to be an active participating member in your professional organizations. Because there will be thinkers that you'll come into contact with that have other perspectives that what you are encountering in your daily work and that you can take those onboard and grow with them. So I would say, some in the challenging conversations that you have in the coffee shop or over the breakfast table, Harriett Werley was absolutely an influencer, very early on, and a mentor and went on to influence one of the most important jobs I ever did and interestingly enough, Norma Lang, who challenged me on my thinking about what was necessary for basic nursing education for professional nursing. And then along the way other people that were not necessarily in nursing but who I came to exchange views with that were maybe medical informaticians, academicians as well as non clinicians. I remember well a fellow by the name of Dave Brown who worked at TDS, it was my first mentor in this industry, who taught me that not all the brains lived and worked in academia, that some very, very smart people worked on the industry side and I had come into the industry with the prejudice that all the brain power that really counted lived and worked in the world of academia. So those were some very basic lessons that I learned along the way.

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

Charlotte Weaver: In thinking about the forces that have come into play, to define nursing informatics and to have gone into what this discipline in this field is today, I think it's two-fold. I think it's some of the very talented and committed individuals that have taken this on and have embraced the name of being a nurse informatician. I think it is the development of this as a discipline in our universities and with our schools of nursing with formal research and publication so that you have a body of knowledge that gets built and it can be recognized

as a legitimate domain and discipline of nursing. I think the evolution of the industry in which clinical solutions have been built to create an automated medical record and the discovery that you can't get there unless nursing is a part of it, so you have to involve nursing organizations and you have to automate the work that nursing and the care team does. I think they interplay off of each other and that they have gone on to put nursing very much in the center of the transformation that our healthcare systems are involved in trying to do in the United States as well as around the world.

Interviewer: Let's talk about research. What were the important questions addressed by research related to nursing informatics? And how has funding influenced the research agenda in nursing informatics?

Charlotte Weaver: I am going to answer the question of how research has influenced the evolution and development of nursing informatics from my side of the industry which has been the industry development side of clinical solutions and the body of knowledge that goes into delivering those solutions so that they can be adopted and used to their fullest potential. We refer to that as clinical adoption. And I would say that number one, usability, how these solutions need to be developed and delivered so that they can be adopted and used and that they deliver value has been the single most important aspect from the industry side. The second area as we've gotten into the potential of using features like clinical decision support, expert knowledge databases, the representation of knowledge, outcomes focused care, outcomes focused research, has been the interplay from academia back into industry of very basic concepts of what is the best way to represent knowledge to front line clinicians. And then, in interactive conversation, on our part, on the industry's part, we do maybe a first generation development and then we have all of the academician community doing critical reviews, sometimes formal research on this and that feedback into industry has been essential for industry being able to take the lessons learned and making second and third generations of those clinical solutions in an effort to get it right.

Interviewer: Dr. Weaver, when you think back to your first involvement in informatics, what were some of the earliest events you recall?

Charlotte Weaver: The earliest events that I can remember on nursing informatics is actually very clear in my mind, was the International Congress of Nursing Informatics that was held in Calgary, Canada hosted by Katherine Hannah. And I'm thinking it's like 1986, somewhere in there. So I had been working in this field for three years by the time I attended that international body, and first of all I learned that there was such a name as nursing informatics so it was my first engagement into formal, professional organizations that were made up of nurses of different areas working in this field. Not just nurses that happened to work for hospital organizations or nurses that worked inside of companies like the one I was working at the time. And I talked with people from all over the world, especially Europe that were working and struggling with concerns like confidentiality, security and privacy. And at that time in the United States, we totally dismissed that as irrelevant concern and it was "Well of course, nobody's going to violate or give away information or look at charts that shouldn't be looking at charts." We were extremely naive on this whole area of the importance of having a strategy and a national strategy for confidentiality and security. And Europe was investing at that time and continued to invest so that now we are, now in 2007, finally coming at the national level under strong encouragement from our Federal government to get these standards developed and in place.

Interviewer: Well, you sort of answered this next question already, was there anything happening in the social or political environment that either helped or constrained the development of the field?

Charlotte Weaver: I think that going back to the Calgary Nursing Informatics Congress, one of the statements made to me at that time that I think was very counterproductive and for Nursing Informatics in general, was just an offhanded remark that folks didn't really look at nurses who worked on the industry side as being legitimate participants in these kind of professional organizations. That there was a feeling that you were a nurse that had gone over to the dark side and that you really weren't a committed nurse for in the same way that nurses who worked in academics or for government or for healthcare

organizations. And it took me a long time to get past that, and to understand that it was important for me to come back and fully engage because we were kind of all in this boat together. And we each had strengths to bring to the overall goals that we were embarking on and that it was imperative for all of our success that we work together collaboratively. And I'm happy to report that in 2006, one of the individuals that were engaged in that conversation came to me and actually said "I finally get it." So we've kind of really evolved in our own collaboration in understanding of the strengths that we all respectively bring to this field.

Interviewer: Tell us some more about how this field has evolved? Are you surprised at how the field has developed?

Charlotte Weaver: So how has the field of nursing informatics evolved and am I surprised at how it's developed? I've always looked at nurses at having a unique role in this field because we are socialized in our education and preparation to be a nurse to be collaborative. We also have to learn about the work other disciplines on our team, what they do and what their work flow processes are. So when it comes to a generalist that can work across a healthcare setting and venues of care, nurses fit into that very, very well. So pragmatically, I am not surprised that nurses are numerically the largest number recruited in healthcare organizations and in industry to do the groundbreaking work of getting systems in or designing systems. Nurses are much more economical than physicians so it makes sense that you're going to hire a nurse because you can hire three, four nurses for the cost that you can hire one physician. So now that's just straight hard economics. I think if I were to register my surprise, it would be that despite these numbers and despite the numbers of the nursing workforce in the United States, which is over two million, that when we have health policy bodies such as the Office of National Coordinator, looking at the what the workforce issues are and what the competencies of the workforce that are needed, nursing is not invited to the table or to the conversation. And that happened as late as 2004. So the invisibility of nursing is still very much with us. We are at a turning point because technology is coming together with standard terminology so that what

nurses do and the difference that nurses make to healthcare outcomes is finally in a position to be discovered. And so with that quantitative visibility and relating to outcomes, I think that nursing is a position to become empowered for the first time in our official 150 year history since Nightingale.

Interviewer: Dr. Weaver, are there any lessons learned that you would like to pass on?

Charlotte Weaver: I had an anthropology professor that counseled us, I was in my Ph.D. program to pay attention to the friends that you make and to make sure that you went to the annual anthropology conventions and to know that any future job that you got, any future research opportunities, any future grants would be because of the networks that you made as students. And even though I listened to him and said that he's right and I know that's important, I didn't act on it as assertively, actively as I should have and could have. And it took me a while to realize that even in my professional work within nursing and informatics that the networks that you make through your professional organizations enable you to bring value inside of any position, role or company that you work in. It also makes things possible to do that you wouldn't be able to do otherwise, that make your career more successful, and then go on to influence the job opportunities that come at the end of the phone call because at the end of the day most jobs happen by people knowing somebody that do a particular thing and give that recommendation.

Interviewer: Are there any organizations today that people can join that can help with that networking?

Charlotte Weaver: I think that given that particular role that individual is in, if they're in any field of nursing informatics and they would want to look to their national organizations as well as your local organizations. You don't want to ignore your own local community. You want to be active in both and so yes, we've got our AMIA with the NIWG organization as a part of that, we have HIMSS and the nursing informatics community that is a part of HIMSS. The alliance for nursing informatics is made up of twenty-two, I think its twenty two, maybe it's more, nursing organizations, many of them national, some of them regional,

that nurses belong to. So look to the organizations, their different missions and what they're vision and mission statement are and determine which of those would be best served for what you are looking for and for what you are engaged in and then become a very active member of those organizations.

Interviewer: Speaking of organization, you were instrumental in creating a group in Wisconsin; can you tell us about that? How did that come about?

Charlotte Weaver: That was under, let me come back to the question, so the organization that I was actually instrumental in forming, at one point in my career, and followed on when I relocated to Wisconsin. And I went to a SCAMC meeting and attended a CARING Roundtable Luncheon and spoke with one of the founders, Sue Newbold, on what this phenomenon was about and how it worked and was structured. And realized that one of the primary values that came from that was continued education and in the state I was living in at the time we didn't have any organization to affiliate with. Nurses were definitely involved in implementing systems across the state but they were very isolated. So I happened to be sitting next to Harriett Werley at that luncheon who was from the University of Wisconsin, Milwaukee and so she and I decided that we would go back home and start our own local organization like Caring, which we did and it was very successful and went on for ten years, way beyond my tenure when I had to relocate to Australia. And it served the purpose of bringing together a continuing education curriculum for nurses as well as a networking so everyone can learn from each other and as well as then to connect those nurses into national organization for the value that comes with that. So we got rid of the isolation of our community that we're all working in our own respective powers.

Interviewer: Just a couple more questions. Dr. Weaver, I know that among your many accomplishments, you've co-edited a book related to nursing informatics, would you like to tell us about that?

Charlotte Weaver: So when I think back on my twenty-some years of careers in the field of nursing informatics and look at some of the things that I've engaged in and done, I realize that an important part of that has been publishing. I came to the realization that publishing was something that I should do because by virtue of the work that I've been able to do, working in my current role, I did a lot of international travel, I did a lot of consulting with nursing leadership groups in different countries, I worked with colleagues that were engaged in the efforts to bring technology into their organizations. So one of the things that came out of that is an international collaboration, I'll just show this, that really the purpose of this book was to capture a snapshot of what was happening around our world, our globe, not just in industrialized countries, in implementing electronic health records because I realized at one point, we really had a major initiative going on right around the world of putting in electronic health records driven from the need to contain costs and get quality where it needed to go. And nurses were being recruited in absolutely record numbers to engage in these kinds of activities and endeavors and it was changing nursing. It was changing the practice, the demeanor, the science of nursing and creating new roles and opportunities and unless we, if you are interested in keeping a history of nursing, capture this snapshot, we might be down the road and wonder how did we get here? And so we did this work with editors, three other editors from around the world that going into their networks again, the importance of networks, tap shoulders to get something like fifty countries represented in this book. So it's a collaboration of over 150 authors that put together this comprehensive look at what nurses are doing in this field of putting in electronic health records.

Interviewer: Where do you think the field is going? What opportunities and roadblocks are ahead?

Charlotte Weaver: In terms of thinking where nursing is going in the future and what opportunities and what roadblocks are ahead, I'd like to start with what I see are opportunities, and the positives. I think that increasingly as we get adoption of EHRs in place with standard terminology that it's going to be incredibly empowering to nursing to have what nursing does and healthcare delivery, quantitatively identifiable. And that we will be able to capture what

the contribution of nursing is. I think that's going to be an empowering element to nursing inside healthcare delivery industry. Secondly, I think that the opportunities that are going to be created for nursing research as a result of that quantitative database being available for nursing research is going to be just profoundly transforming to nursing and to nursing science. In the area of nursing informatics, I think we're seeing a resurgence of our programs in academia, of formal preparation of nurse informaticians, so that we will have strong partnerships between those who do research and collaboration with those of us on the industry side to focus on the relevant important questions that can rapidly advance what we're doing in the area of using technology for healthcare delivery and for nursing. I think that we've got incredible opportunities ahead of us. I think also nursing has challenges around maintaining its sense of a profession and it's status of a profession, not just in the United States but internationally and keeping control of our practice, so when I talk about that I mean that care delivery models that are used inside of healthcare organizations are under the domain of nursing and not a business manager. And we're seeing that trend internationally and we're starting to see some of that come into the United States. So the erosion of nursing as a profession goes along with keeping control over your practice.

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

Charlotte Weaver: The domain of nursing has specific knowledge and science that, excuse me, so why do we call it nursing informatics and what does nursing bring that's specific over any other health profession or domain and I would answer that by saying that there's a domain to healthcare delivery that is unique and specific to nursing. And that perspective when brought in with technology is a domain that comes under the name of nursing informatics. And what we have to have represented in the development of solutions, the use of solutions in healthcare delivery, is to support what nurses do that's unique and specific to nursing and not just under the rubric of other disciplines specifically, just limiting it to what medicine does inside of healthcare delivery and for too long we've done that.

Interviewer: That ends my formal questions of you, is there any last statement that you'd like to say, something you've been thinking of during this last forty-five minutes? Anything else that's perhaps influenced your career?

Charlotte Weaver: I think the message that I would like to end on is the importance of having mentors and that for you to be the best that you can be is to make sure that you have at least two mentors at any given time, at any role that you're playing in this industry. And that you want to have mentors who come from different perspectives, at least have one mentor that's outside of the organization that you're working in that can bring objectivity and a different, maybe knowledge base to what it is that you're doing. And the power of mentoring is that it allows you to have that distance perspective and guidance from experts who, it's not necessary that they're older than you but that they're bringing in expertise that is complimentary to what you're doing in your daily role and sometimes it's just another pair of eyes and objectivity. But so often those of us who are working in industry, I think it's the same whether you're in academia and I know it is for healthcare organizations. You can get such tunnel vision for what the role and job is that you're doing that you're not watching and getting the feedback and watching all the cues that you need to be paying attention to when you're in your daily work life. And one of the things about being a clinician whether it's a physician or nurse or physical therapist, when you're working inside a technology company, is that you are really the outsider. And when you are put into a position of responsibility and power, in a technology company, you want to be very informed of how you're doing so that you can do course corrections all along the way to make sure that you're being politically savvy and plugged into what the dynamics of a given setting, situation, meeting, team and to what really to be able to be effective in influencing that organization to carry out the decisions that you're helping inform by your clinical perspective, you've got to be a very smart, political player. And so therefore, mentors, who will give you frank feedback, honest feedback and an outside perspective, are critical success factor.

End of Interview