

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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Connie W. Delaney**Introduction: Connie White Delaney, PhD, RN, FAAN, FACMI****Dean and Professor, School of Nursing, University of Minnesota**

Interviewer: Back story, career in nursing, transition to informatics?

Connie Delaney: It's interesting that you ask about early career in nursing and transition into informatics because:

First of all, I think I can answer that question now, looking back. But, of course, at the time informatics didn't exist. I'm going to answer the question looking back. At the time I could not have planned forward this far. I think it starts with being in a wonderful undergraduate program in a private school – studying for the BSN. And, being able to have a double major in mathematics. I had the major in mathematics because it was my recreation. I loved mathematics. Nursing was enjoyable, but mixing it with mathematics was a fully different way to live out a liberal arts sort of experience.

Now that I look back, actually that was just neat. Now that I look forward at being an informaticist, I can see that sort of thinking and being involved in mathematics as well as a caring profession like nursing was actually my first professional example of the start of this thread. But, of course, it goes back before then. And it's just continued. I focused on advanced nursing and adult health and social psychology. Then the PhD is in educational administration and computers. You're seeing a thread of all this that would traditionally be viewed as very quantitative with a very caring, qualitative orientation.

Interviewer: You were an intensive care nurse, telemetry nurse. Was that part of it? When did you actually start working with health information?

Connie Delaney: It's interesting to think about the integration of the balance of working with information and working with, say, the techie side of nursing practice. I am an intensive care nurse by background. Even at that point, probably the most pointed example of informatics emerging at that time is that I knew it was absolutely ridiculous that every shift, every one of us, needed to be interpreting an EKG when the QRS intervals are very computationally determined. I was already developing automated ways to interpret the EKG. Why I hesitate to say that's the beginning of a clear evidence of information orientation – even though it's in an analog environment – is that I fundamentally knew that intensive care nursing is not a techie thing. It involves technology but the real intensive care nursing is about marrying nursing care and technology. So basically, it was always about making the technology seamless or, hopefully, invisible.

Interviewer: Back up and talk again about intensive care and use of information.

Connie Delaney: I am by nature an intensive care nurse. That was my orientation; it's been my primary career experience up through actually the last few years. Early on, there were pieces of my intensive care practice that could be interpreted as informatics oriented. Those included activities like trying to determine an automated way to read or interpret EKGs. In reality, that was just part of my interest. The other part of my interest always was in making the technology essentially invisible to the people I was caring for. That (threads?) my whole career.

Interviewer: Was there a time when you started thinking of yourself as an informatics nurse?

Connie Delaney: Absolutely. The summer of 1998. I know that the summer of 1998 was when I first started thinking of myself as a nurse informaticists because I was the first post-doctoral student of Dr. Judith Graves. Judith Graves had completed the post-doctoral study under the NLM training grant at the University of Minnesota. She studied under Health Informatics and in cooperation with professors in the School of Nursing. She completed that transition to the University of Utah to create the Nursing Informatics program there and I was the first post-doc student.

Interviewer: What do you see as your major contribution to the field of NI?

Connie Delaney: When I consider my contributions to the field of informatics, I think about that in two areas. One is the area of unrelenting support for what the nursing minimum data set or minimum data set research is about. A few examples that would illustrate that include:

A commitment to and working with Harriet Werley. It's rare that one would get such a phenomenal experience early on in a career. The mission in my early research trajectory always was, "How can we, indeed, promote the implementation of the nursing minimum data set? But more importantly, how is it that we can ensure that in an electronic environment, the nursing minimum data set elements are represented and, even more importantly, can we retrieve them?" So, a whole chunk of my early career was about...I was very fortunate to engage in a research trajectory in cooperation with the health care system that was very forward-looking in Davenport, Iowa. That allowed me to do experiments about actually electronically retrieving the nursing minimum data set elements.

You asked about my contributions. They will never be my contributions. I have always worked in teams; I can't imagine not working in teams. When I talk about these examples, what's behind are a host of collaborating individuals. But, for example, I remember in Milwaukee, Wisconsin – at a conference that Harriet Werley organized and, of course, hosted – us presenting for the first time ever that we were able to electronically retrieve the elements of the nursing minimum data set. Of course, we were totally afraid that she would find a flaw in our methodology. She didn't. She was quite proud of that.

That transitioned into a chunk of my career focusing on vocabulary sort of work. But that's where the state of the science was and it was necessary work to ensure that we could capture the nursing minimum data set. That transitioned into: there's more than clinical care; there's the context of care that generated into working with a research team to create the nursing management minimum data set and that transitioned to – now that knowledge discovery and data base methodological tools are available to deal with large

data bases for knowledge discovery – we did early experiments in that. That’s the data track. Then, of course, there’s been another track. That is from an informatics perspective it’s unfolded like that But professionally, I’ve transitioned from the work I’ve done with persons to the usual academic trajectory. And I think that one of the....there are two contributions that have been consistent in my value framework. One is that in absolutely every capacity possible, I just automatically think about collaboration. Along with many, many, many other people I just bring a little bit to the picture.

The unrelenting respect that collaboration brings to the picture – and I think I’ve contributed some, for example, to creating the Midwest Consortium related to health nursing informatics. I think the Alliance for Nursing Informatics are many of us who have worked on that. I’ve contributed to it. I think that’s a phenomenal illustration of the inter-relationships that exist in nursing informatics. It’s a phenomenal field of collaborating individuals.

Then last, I should probably make a comment about totally....it’s just been a gift of the universe that I ended up being dean at the University of Minnesota. That is important to me and it’s primarily important to me because it illustrates that it’s not about me, but it illustrates that there was an environment in the world that recognized that informatics was not a liability but an asset to a deanship.

Interviewer: What was it like to work with Harriet Werley?

Connie Delaney: The experiences with Harriet Werley are unbelievable. Number one, she is incredibly focused and was incredibly focused. She was unrelenting in every forum, every interaction, every individual she met, in focusing on the nursing minimum data set and making nursing visible. Absolutely, totally focused.

There are two additional characteristics – I could actually talk forever about Harriet Werley – Number one, she had an incredible memory. She would connect people, people,

people, places, and organizations. Every encounter with her was, “Oh and you need to talk to... or you need to be here.” She was a phenomenal live-person internet.

The third point, on a kind of humorous side, Harriet had the capacity to actually act like she was thinking of a million other things. But she would never miss a beat in terms of being in the present, picking up the key points, driving herself. She was wonderful, very focused, and 24 hours a day oriented on the nursing minimum data set.

Interviewer: What year was that?

Connie Delaney: I met her in 1987 when I entered a tenure-track position at the University of Iowa. I was totally focused on developing a research trajectory and I can't tell you how I connected to the nursing minimum data set. It just always was in me. So, maybe that relates back to mathematics. I don't know. I just knew it so I connected with her. That led to her suggestion that I study with Judith Graves – or at least connect with her – and that evolved into a post-doc. It was 1987.

Interviewer: What was your post-doc?

Connie Delaney: My post-doc was Nursing Informatics and, as you will remember my PhD was in, not only nursing administration, but computer applications. Because nursing informatics didn't exist in nursing in 1984-1986. I graduated with a PhD in 1986. The very next 12-18 months, informatics emerged. Did I know it was emerging? No. Harriet Werley did. It was a match. I went on with it.

Interviewer: Was it fun?

Connie Delaney: My whole life is fun. And it is today, too. What I've always discovered about life – whether it's nursing informatics -- is there is absolutely unlimited possibility. I still think that about nursing; I think it about informatics; and, if you ask me about my life in general, it's always been that way.

Interviewer: Advice for someone considering the field?

Connie Delaney: When I think about people who are interested in informatics, I just cannot in a few words describe the world of informatics. I happen to be a lucky individual that lived at a time when informatics emerged as a specialty in nursing. The gift to me of that has been that my opportunities are unlimited to create what informatics would be in my lifetime and I would contribute to that. And there might be a small contribution of that direction to the overall direction of nursing. When I think about informatics, it is a field where you can totally create your own possibilities. You can mix and match education, research, practice, your entrepreneurial spirit – there is essentially no limitation. There isn't a limitation in terms of whether you're quantitative or qualitative oriented, or whether you're philosophically oriented, whether you're very operationally oriented. You can, number 1, find a place, and/or number 2, create it. I think the same thing about nursing. It's interesting when I think about people that come to me and say, "I'm interested in this field." It's equally as interesting to me when people come and don't say that. I can't look at anyone without saying, "Have you ever thought about relating informatics to that specialty or that activity or that role?" And that's also the gift of informatics. It absolutely permeates what we ever do, think, or act on.

People of my generation that are living in nursing – and especially those of us that are in informatics – have a wonderful gift of truly living through a massive revolution and evolution and paradigm shift in our whole society. Many generations don't have that gift. We do.

Interviewer: What was the reception like back then; when you were first starting.

Connie Delaney: When I think back to my early days to planning a dissertation, it's rather an interesting time. To think about that I have to go back to my baccalaureate program. The key factor that contributed to my baccalaureate program that contributed to the PhD dissertation was that I just always knew I would be a dean. In the undergraduate program, usually the culminating experience in the senior year is a preceptorship. Mine was with the dean of

the school I was enrolled in. I wanted to know more about that role. That relates to my dissertation. The dissertation was marrying administration and computer applications because informatics didn't exist then – '84-'86. It existed, but not in nursing. The question to me was the literature was filled with articles about how faculty members were not accepting, were not knowledgeable about computers, all of that -- whether it related to their attitude, their anxiety, or their skills. That seemed like a fascinating topic to me. At the time, I was also employed in a private educational role – at Luther College in Decorah, Iowa. It was perfect to realize that no one had studied people in schools other than research-one (?) type universities. If you're thinking about Roger's model of diffusion and adoption, it would be logical to think about what's happening in the non-research-intensive schools related to computers.

[slight garble; coughing here]

Interviewer: you were talking about faculty acceptance when you were working on your dissertation.

Connie Delaney: When I was working on the dissertation and integrating my areas of foci – administration and computer application – there had been a lot in the literature about what nursing faculty and research-one universities or other university settings that are known for being on the cutting edge were doing in terms of computer applications. But there was actually not any study that I could find that related to faculties' acceptance, anxiety or attitudes toward computers in liberal arts, teaching-oriented institutions. I was a faculty member at Luther College in Decorah, Iowa. It seemed logical to study private baccalaureate programs. I did. What was so interesting is that everything you expect is not the case. Oh yeah, I just love my dissertation. You would expect that people in teaching-oriented liberal arts colleges would not be computer literate. You would expect that they would have a lot of anxiety using computers. You would expect that they weren't using them. Out of those three, I discovered there wasn't anxiety of any significance. They had more or equal knowledge to what was reported in the literature and, in fact, the only reason they weren't implementing is they needed more software. Isn't that a wonderful finding?

The reason I ask is that it shows how progressive nursing faculty can be. And how welcoming, in reality, they were of entering a new time in nursing that was truly oriented toward this paradigm shift.

Interviewer: Who were some of the other key people you worked with over the years?

Connie Delaney: When I think about the people I've cooperated with, there are just so many. One of the advantages of living through a period of an emerging specialty is that, of course, you're a smaller group. Most of the people in informatics know each other. We celebrate each other as individuals and our personhood as well as who we are as professionals. When I think about the people I've worked with, it's been those people. Probably all the people you would think about as being in informatics from the 1978ish era through now I've had an opportunity to know and work with them. I've been a very, very lucky individual.

There are a few people who have been particularly engaging. One of them has been Roy Simpson. Why I admire and welcome Roy Simpson's contribution to nursing informatics so much ...I'll give you two examples; there are several. He has an unbelievable ability to take this specialty and talk about it in everyday terms to nurse administrators, practice people, education, it doesn't matter. He has an ability to translate what might be tough and hard or whatever research areas – hard concepts – and make it matter. The second area that I so admire Roy in is: Back in the '80s, the HBO created an unbelievable opportunity for a host of people that either didn't identify themselves as informaticists but had potential in the eyes of other people, or 2) were key change agents but could benefit from an introduction to this informatics world. Roy, in collaboration with Diane Skiba (?) and others created an unbelievable HBO scholars program. If one would track those scholars over the next 20 years of their careers, I think one would discover that most of those scholars went on to be key leaders or very influential in the world of informatics. There are many other people I could mention who have mattered. A host of people have mattered. There are key people that have stood out.

I think another one that I'm currently so enjoying working with – actually three quick ones – Virginia Saba in many ways is like a Harriet Werley. There is a steadiness, a dedication, and an unbending focus on the advocacy for nursing informatics. Her scope is broader than the nursing minimum data set, but she's just a phenomenally dedicated human being. Outside nursing informatics, there have been many key advocates for nursing. At this point in time, two of the most exceptional people that are advocates for nursing but are not nurses, are Charlie Safran and Don Detmer. They see the vision; they see the integration and the contribution of nursing. They not only see it, they're willing to fully put energy and commitment and public comment behind advocating for nursing.

Interviewer: How do you see overall education of nursing – as a dean; aware of informatics?

Connie Delaney: I have an interesting perspective now in having an opportunity to serve in a deanship role, particularly as it relates to informatics. A few comments about that: One is I can't imagine living any role in nursing, including the deanship, without informatics. It's just a tremendous gift and tool to me to have an informatics background and to be in a deanship. They complement each other very well. When I think about the students that I encounter, my greatest hope relies in our young people. They come to us with just a given in the world of the integration of information technologies into their life. They have a given in how they are virtually connected every minute of their life. The majority of them have transcended the idea of space and time, which, of course, is the world we're transitioning into. A true transcendence of time and space. I have tremendous hope for what the sometimes-referred-to-as-the-millennials are going to contribute to the advancement of our profession. I have the same hope for post-baccalaureate or second-degree students. What I'm saying is that nursing has created tremendous opportunities for non-traditional entry into nursing, whether that be the CNL, the DNP now, whether it be post-bac students who hold a degree in another field. One of the things we're encountering – and I think will only enhance the integration of informatics – is this non-traditional approach, non-traditional boundary thinking and feeling of people coming into nursing. I absolutely welcome the richness and the challenges that these persons – their

minds and their hearts – bring to nursing. I think there’s an openness in nursing beyond any capacity – at least that I’ve experienced in my 25-30 years as a nurse. There is such an openness in nursing to consider other possibilities.

Interviewer: Informatics a very varied career?

Connie Delaney: When I think about talking to the students that may or may not be interested in nursing or nursing informatics, one of the most unequivocal comments I can make to them is, “I’ve never lived two days exactly the same in my whole professional career.” For people like me who are actually on the move quite a bit, I’m not a “maintenance” sort of person. That is just music to my ears and it’s music to the new people coming to nursing to have this sense that you’ve just created and it can be yours.

Interviewer: Nursing informatics, where it’s come, you can use it for evidence-based

Connie Delaney: I just finished a presentation here at AMIA related to evidence-based practice and the information technology support for evidence-based practice. Now this is a fascinating area. I was on a panel. There were three exemplars that we shared. The partnership at the University of Iowa with ? Corporation, which is transforming clinical guidelines and protocols into point-of-care knowledge support for clinicians. The second one was a large project that encompasses the rural health care system at the University of Wisconsin in Milwaukee. That has a major focus of not only dealing with findings from nursing research published in the literature but also deriving knowledge from clinical data. Third – a wonderful project that’s also sort of a collaboration with the University Of Kansas Medical Center. What’s fascinating about that is: how do we teach in different ways? How do we make information systems essentially invisible to a student learner and focus on what they really need, which is evidence that supports their thinking and critical thinking in the development of the ?

What is fascinating about this whole area is that it is indicating where nursing is going. I'm going to comment on it from two perspectives. One is: it really represents the contributions to nursing that are coming from research and educational methodology.

So non-informatics. It's representing what's coming from people that traditionally wouldn't view themselves as informaticists, marrying it with informatics, and then what do we get? We have new ways of teaching, new ways of living our practice. You can view this coming together of truly knowledge-based practice from what's happening in our profession as a whole. Additionally, you can do it from the perspective of, What does this represent about the evolution of nursing informatics itself? It represents many things. One, we have the vocabulary to describe what we do so we can take guidelines and other knowledge, actually translate it into clinical information systems and make sure that those clinical information systems are used because there is standardized vocabulary and reference terminologies operating – all tools that have been developed in nursing and in health care. We can then get the data from that practice to actually drive new knowledge develop which is influencing the research mission.

Early on, I talked about one of the aspects of my research career has been a passion to be able to retrieve data that describes patient-family experiences, be able to use those data to describe practice or these experiences. Then it evolves to using very advanced tools, like the tools used in the NASA space program, to analyze nursing data. The capacity for the evidence-based practice to now use those tools is even broader.

There are two things happening here: an evolution of a profession and an evolution of a specialty within a profession coming together to create a maximum capacity for patient care/client care. It's a wonderful time.

Interviewer: Core principle or value?

Connie Delaney: When I think about a core value or values that have guided my career, there are a few. One is that I have an absolute passion in contributing to data truly representing human beings and what their lived experience is. Two, I have an absolute, unbending value in recognizing the power of collaboration, which, of course, also means acknowledging the limits of one single little human brain like mine. Collaboration is about marrying human minds. Probably the third thread that will continue to permeate my professional career, but also my personal life, is that I fully intend to live seamlessly. In other words, I intend to experiment with every avenue I can to live in a virtual world as well as a physical world. One of the ways that you and I as human beings can expand who and what we are and how we relate to other human beings and go beyond space and time limitations is the virtual connectedness. That permeates my value system in terms of education, in terms of collaborative research. We have virtual collaboration. It permeates my personal life and how I live with my son and my granddaughter.

Interviewer: What's the future of nursing informatics?

Connie Delaney: When I think about the future of nursing informatics, I think there will be as we view it now...it will disappear. In the sense that it will become so totally integrated into every role and specialty and knowledge-disseminating capacity of our profession that as we view it now, it will disappear. It, too, will become seamlessly integrated. I live for that day. It will happen beyond my lifetime. What that also means is not the end of nursing informatics, just the end of nursing informatics as we view it today. There will also be those frontiers that nursing informatics is carving out in terms of expanded ways to represent knowledge, represent who and what we are as human beings, and going beyond text and coded data to work and images and living. There will always be the frontiers related to how it is that we build knowledge with artificial intelligence. There will always be frontiers in terms in how we better collaborate and link up with one another. And I fully see us continuing to move in a lived global education and practice sort of world. My passion to promote the international nursing minimum data set is part of that. We will know and share nursing internationally.

Interviewer: Lessons learned?

Connie Delaney: I consider life a rather interesting experience. I have learned lessons. One of my greatest wishes, by the way, and I hope I've learned this lesson, is to try to learn it quickly and not have to repeat a lot of lived experiences to learn the same lesson. There are a few key lessons I've been fortunate to learn and try to live my life as if I've learned those lessons. One of those is: It's a big step in one's life to realize that you have limitations on your capacities, not only for thinking but for working with others....you bring some gifts to it but they're just some gifts and some capacities. One of the key lessons I've learned, and informatics helped me learn this, is that I'm just one small contribution. It takes all of us, as many as possible working together, to advance – whether it's nursing or to grow as human beings as well. I'm talking about recognizing the limitations of who I am as an individual human being. But in recognizing those limitations, always knowing that at least I have something to bring to the picture. That will contribute to creating something bigger than any one of us.

The second lesson that I've learned is the power of collaboration. There are people in nursing informatics and, of course, in nursing, who do remember my early days.

One of the important lessons I've learned about collaboration has an interesting beginning. In my early career – actually my whole life and early career – I knew that I was very self-sufficient. I had no need to collaborate on group projects in nursing school. I liked the ones that I could do myself, get them done. Usually I would get an A and I would have them done efficiently. I had actually little desire to work in groups and I was transformed in my first faculty position. But I wasn't transformed by the position. I was transformed by a dean who said, “You have a lot of capacity and I'm going to teach you how to work with people.” And within two or three years, I actually learned to like it.

It was through that process, of course, that I realized more my own limitations. The lesson learned, the power of collaboration and working together is basically limitless. I'm

profoundly dedicated to connections, connections, connections – people working together. And no one person ever having all the answers.

Interviewer: Anything we haven't asked you.

Connie Delaney: I suppose there would be one thought. When I think about the whole informatics field and the growth of technology, there is a phenomenal opportunity for nursing. And it is in that that whole where the technology or where the data or where the systems meet the individual or the family. And that's so nursing. When I think about the possibilities we have for the future -- the more and more we deal with human genomes, biomedical technology – that's only creating more opportunity for us. One of the biggest challenges for us will be to let go of the past things we hang on to and truly celebrate this space for nursing's contribution to individual and family care.

End of Interview