

**Conversations with Medical Informatics Pioneers:  
An Oral History Collection**

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**Joan S. Ash & Dean F. Sittig**

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U.S. National Library of Medicine



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**Oral History Collection**

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Courtesy of Kaiser Permanente.

## Conversations with Medical Informatics Pioneers: An Oral History Collection

American College of Medical Informatics Morris F. Collen Award of Excellence awardees gathered in California to celebrate Morrie Collen's centennial birthday on 11/12/2013. Pictured (front row, L-R): William Tierney, Robert A. Greenes, Nancy M. Lorenzi, Morris F. Collen, Marion Ball, Betsy Humphreys; (back row, L-R): Donald A.B. Lindberg, Don E. Detmer, Ted Shortliffe, Ed Hammond, Reed M. Gardner, Howard L. Bleich, and Warner V. Slack. Other Collen awardees (as of 2014) not pictured: Homer Warner, G. Octo Barnett, Robert S. Ledley, Joshua Lederberg, Jean-Raoul Scherrer, Clement J. McDonald, William Stead, Peter Szolovits, and Charles Safran.

# Origins of these Conversations with Medical Informatic Pioneers

How this oral history collection began & grew.

**INTRODUCTION BY  
JOAN S. ASH AND DEAN F. SITTIG  
JANUARY 2015**

Medical informatics is a “scientific field that deals with the storage, retrieval, and optimal use of biomedical information, data, and knowledge for problem solving and decision making.”<sup>1</sup> The field of medical informatics began in the 1950s soon after the first computers were developed. In those early days, researchers struggled with slow central processing units (CPUs), infinitesimally small (by today's standards) memory registers, and programming that often required use of machine-level instructions. Notwithstanding such extreme constraints, these dedicated investigators were able to begin exploring important informatics concepts and develop prototypes of many of the same applications and systems that are still in use today.

Because medical informatics is a relatively new discipline, we are fortunate that many of the founders of the field are not only still alive, but they remain actively involved. For this reason, in 2004, we decided

that the time was right to begin conducting a series of oral history interviews with informatics pioneers. We had used modified oral history interviewing techniques in our NLM-funded research efforts since 2000 and one of us (JA) had been her university's oral historian before that.

Oral history is a method for documenting history in a vivid way by recording the voices of those who have experienced it. An oral history, while subject to the frailties of the human mind, presents an unfiltered story. This story is presented without the interference of gatekeepers, such as journal editors, publishers, and colleagues, or the filtering necessitated by current office politics. The founders of informatics are a group of people whose spoken words are lively, fascinating, and wonderfully descriptive.

While the history of medical informatics had already been well documented by Morris F. Collen,<sup>2</sup> we envisioned a collection of narratives in the form of interview transcripts that would portray the varied perspectives of informatics leaders. We were inspired in part by the AMIA Nursing Informatics History Project,<sup>3</sup> and the National Library of Medicine's Changing the Face of Medicine exhibition,<sup>4</sup> which celebrates America's women physicians. Historic documentation alone cannot give a true picture of all the circumstances that have influenced the development of the field. Therefore, the goal of this

set of transcripts is to capture a portion of the history of the medical informatics field in the words of its pioneers.

We began by making a list of 36 potential interviewees along with a list of topics we felt we should explore with them. We developed a generic interview guide with several very general, open-ended questions we wanted to ask everyone—about their education and early careers, accomplishments and turning points, involvement in professional associations, and advice for future informaticians—and then tailored the guide for each interviewee with more specific questions about their particular

research interests and most important projects. We contracted with a professional transcription service dedicated to this type of work and as we travelled the country to attend scientific meetings or study sites for our research, we contacted interviewees to arrange interviews. We had no external funding, so we used our own resources for transcription and

expenses, but we still managed to interview 17 geographically available interviewees from our list of 36. We usually did the interviews together in tandem, with JA asking the more general questions and DS the more technical, probing questions.

Julie McGowan stepped in to conduct the interview with Lawrence Weed, for which we are grateful. We were then



Source: Personal collection of Nina Matheson

On the steps of the National Library of Medicine building, Biomedical Library Review Committee, June 18, 1979. Top row (left to right): Dr. Roger W. Dahlen, Dr. Donald A. B. Lindberg. Front row (L-R): Dr. Warner V. Slack, Mrs. Barbara Coe Johnson, Dr. Ernest M. Allen, Dr. David J. Mishelavich, Mrs. Nina W. Matheson, Dr. Merlin M. Mitchell, Mrs. Priscilla Mayden, Mr. Robert Wedgeworth, Dr. Gail I. Bank, Dr. Sholom Pearlman, Mr. Warren A. Sawyer, Dr. John F. Sherman, Miss Jean K. Miller.



Source: Personal collection of William Ed Hammond.

Ed Hammond, Barbara and Clem McDonald, and Kay Hammond visiting Annecy, France after the September 1992 MEDINFO meeting in Geneva, Switzerland.

extremely fortunate, with NLM training program funds, to be able to hire a summer intern to help us finish the project. Ana Stenescu worked with each interviewee to lightly edit the transcripts for clarity and accuracy and gain each individual's permission to make them available.

Finally, with the administrative support of Clem McDonald and others at the National Library of Medicine, which agreed to house them, we are completing the process of disseminating the words of these pioneers. The NLM is a natural partner because of its commitment to maintain, preserve, and make accessible the nation's historical efforts in advancing biomedical research and medicine, thereby ensuring that this legacy is both safe and accessible for long-term use.<sup>5,6</sup>

We hope you enjoy reading the transcripts as much as we enjoyed producing them.<sup>7</sup> What cannot be captured in the transcripts is the graciousness with which we were treated when we visited interviewees

in their homes or offices and the personalities of the individuals represented in their surroundings. In the transcripts, however, you will find stories that will make you laugh, bring tears to your eyes, surprise you, motivate you, and teach you a great deal. For example:

- Clem McDonald tells heartwarming stories about the early development of Gopher, the early order entry system at the Regenstrief Institute;
- Tony Komaroff describes the relationship between evidence based medicine and decision support, and the beginnings of the use of clinical algorithms for the diagnosis and treatment of patients;
- Octo Barnett describes development in the early 1960's of MUMPS, an early programming language still in routine use by the majority of electronic medical records today;



Personal collection of Donald and Mary Lindberg.

Attending an American College of Medical Informatics (ACMI) Winter Symposium, ca. 1998, (from top left) Dennis Reynolds (AMIA executive), Thomas C. Rindfleisch, G. Octo Barnett, Donald A.B. Lindberg, Bill Braithwaite, John Silva, Bob Greenes, Ben Williams, Ted Shortliffe, Mark Tuttle, Dean Sittig, Bob Riley (Nancy Lorenzi's husband), Nancy M. Lorenzi, William A. Yasnoff, Morrie Collen, Kay Hammond, Patti Brennan, W. Edward Hammond, Naomi Broering, Arthur Broering, Lawrence Kingsland, III, Kathleen A. McCormick, Lauren Kingsland, Gwilym S. Lodwick, Randy Miller, Janice Kennedy (AMIA executive), Thomas E. Piemme, Judy Piemme, William R. Hersh, Parvati Dev, Chris Chute, and Tom Lincoln.

- Robert Ledley tells us about how developing the first whole body CT scanner involved getting a nearby automotive body shop to paint it;
- Homer Warner recalls reading the 1959 Ledley and Lusted paper from *Science* describing use of Bayes' theorem for clinical diagnosis and realizing that he could actually do something like that using real clinical data (which lead to his first publication in JAMA in 1961);
- Reed Gardner describes his early career as a shepherd in southern Utah;
- Ed Hammond tells how what he learned on naval submarines relates to informatics;
- Don Lindberg recounts many stories about how the political scene in Washington influences the field as well as the NLM;
- Nina Matheson describes the Delphi study she led and report she wrote which described the future role of medical libraries and led to the creation of the National Library of Medicine's Integrated Advanced Information Management Systems (IAIMS) initiative;
- Morris Collen describes the history of Kaiser Permanente's clinical information systems;
- Don Detmer gives a surgeon's and administrative view of many important policy decisions affecting the field over the years;
- Tom Lincoln tells about using an early prototype of a tablet-like data-entry system in the 1970s at Rand;
- Don Simborg describes an early computer-based system he developed at Johns Hopkins in the late

1960s for entering and communicating nursing orders;

- Larry Weed tells tales about developing the problem-oriented medical record format and shares his views about the future of clinical documentation;
- Howard Bleich and Warner Slack describe the remarkable research partnership they have sustained for 45 years; and
- Betsy Humphreys reminisces about directing the Unified Medical Language System (UMLS) project and other adventures during her lifetime of service at the National Library of Medicine.

One of our interviewees offered the following advice: "Look at history, and look at it from the perspective of what was done. Then that becomes usable by me in solving the problems that I face now in today's world. I look to see what's the lesson." This collection of narratives provides a look at the history of medical informatics through the eyes of an amazing group of thoughtful, innovative, and courageous individuals.<sup>7</sup>

### Joan S. Ash and Dean F. Sittig

January 2015



Ed Hammond, Clem McDonald, Donald Mon, and John Quinn at the May 2013 HL7 meeting in Atlanta, GA.



Don Detmer, Ted Shortliffe, Paul Tang, Morrie Collen, and Marion Ball discuss the IOM Computer-based Patient Record study at AMIA, circa 1991.



## REFERENCES

1. Blois M, Shortliffe E. The computer meets medicine: emergence of a discipline. In: Shortliffe EH, Perreault L, eds. *Medical Informatics: Computer Applications in Health Care*. V. 20. Reading, MA: Addison Wesley; 1990.
2. Collen MF. Fifty years in medical informatics. *Yearb Med Inform*. 2006;174-9. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/17051312>. Accessed September 10, 2014.
3. American Medical Informatics Association (AMIA). Nursing Informatics History Project. AMIA. Available at: <http://www.amia.org/working-groups/nursing-informatics/history-project>. Accessed September 10, 2014.
4. U.S. National Library of Medicine. Changing the Face of Medicine: Celebrating America's women physicians. 2003. Available at: <https://www.nlm.nih.gov/changingthefaceofmedicine/>. Accessed August 12, 2015.
5. U.S. National Library of Medicine. History of Medicine Division. Available at: <http://www.nlm.nih.gov/hmd/index.html>. Accessed August 12, 2015.
6. Archives and Modern Manuscript Program. Oral History Collections. US Natl Libr Med. Available at: <http://www.nlm.nih.gov/hmd/manuscripts/oh.html>. Accessed August 12, 2015.
7. Ash JS, Sittig DF. *Conversations with Medical Informatics Pioneers: An Oral History Collection*. (Goodwin RM, Ash JS, Sittig DF, eds.). Bethesda: U.S. National Library of Medicine; 2015. Available at: <http://lhncbc.nlm.nih.gov/project/medical-informatics-pioneers>

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Rebecca M. Goodwin is grateful to Joan Ash, Dean Sittig, and the medical informatics pioneers they interviewed to create this collection of oral history conversations. Thanks also to the family, friends, and colleagues of these pioneers, who generously sorted through their photographs and shared them to enrich this collection. Thank you to the many NLM colleagues who contributed to the collection.

We hope you enjoy these stories, which help illustrate the birth of the field of using computers in medicine. May they inspire you.

**Joan S. Ash, Dean F. Sittig and Rebecca M. Goodwin**  
April 2015

**“Memory is the core of oral history,  
from which meaning can be extracted  
and preserved.”**

**DA Ritchie**

*Doing Oral History: A Practical Guide*, 2nd Edition, Oxford  
University Press, New York, NY, 2003

