Morris F. Collen at 100: A Tribute to “The Father of Medical Informatics”

D. A. B. Lindberg1*; M. J. Ball2**
1National Library of Medicine, Bethesda, MD, USA; 2IBM Research, Baltimore, MD, USA

This editorial is dedicated affectionately to Morris F. Collen, MD, “the father of Medical Informatics”, on the occasion of his 100th birthday, November 12, (1913–2013). Serving for 30 years, from 1970 to 1999, on the Editorial Board of Methods of Information in Medicine, Dr. Collen is on rank 6 on the list of persons contributing the longest to this journal [1]. It is also the occasion to celebrate the new specialty of Clinical Informatics this year in the U.S. – a long sought after objective of our centenarian. These two milestones offer an ideal opportunity to honor this giant in the field of medical informatics.

The Legacy
For many of us, Dr. Collen is not only an icon in our field; he is also the grandfather of this rapidly changing and thriving discipline. Over the course of his life, medical informatics or bioinformatics came into being as a specialty and then progressed to become an integral part of medical research and practice. Throughout that evolution, Morrie, as we all lovingly call him, has been a pathfinder and indeed the field’s towering pioneer.

To cast Dr. Collen merely as one of the founders of medical informatics is to diminish his phenomenal legacy [3]. As JAMIA and Methods noted in their 90th birthday tribute, “He is a world-class scientist, an advisor to American presidents, and a profound humanist, who started out as an exemplary clinician. Dr. Collen’s qualities put him from the start in the midst of an environment rife with innovation and opportunity, and marked by other giants”[3].

From his time as a young doctor administering to Henry J. Kaiser’s shipyard workers in Richmond, Calif., in 1942, to the present day, Dr. Collen, has made many important contributions to the field of medical informatics, and to the public’s health.[2]

From 1953 to 1961, Dr. Collen served as physician-in-chief at Kaiser Permanente (KP) in San Francisco. He became director of the fledgling company’s Medical Methods Research in 1961 [4]. One of the primary goals of that program, Dr. Collen notes, was to conduct research focused on the application of computer technology in the clinical care setting [2]. With his training in medicine and electrical engineering, history tells us he was the perfect man for the job. The fledgling research operation grew into a research institution renowned today as a trailblazer in drug safety, risk factor epidemiology, health services, and genetics research, among other areas [2].

One of Dr. Collen’s first major achievements at KP was the development of the multiphasic health checkup, which addressed the physician shortage of the 1950s post-World War II [2]. This series of procedures and tests, given to thousands of Kaiser Permanente members, screened for conditions such as heart disease, diabetes and cancer

* Dr. Lindberg is Director of the National Library of Medicine, a component of the National Institutes of Health, Bethesda, MD.
** Dr. Ball is Senior Advisor, Healthcare Informatics, IBM Research, Baltimore. Professor Emerita, Johns Hopkins University.
Not only did these revolutionary tests save physicians’ time; they also constituted a significant experiment in preventive care. Dr. Collen eventually automated the multiphasic health checkups, moving them onto a punch card system in 1964 [2].

Multiphasic health checkups gave many of us our first chance to meet him and to observe his methods of institutionalizing this new idea within the practical daily life of health care in the Kaiser Permanente system. Morrie gave due credit to others for help in describing the concept. Yet, it was he who built the system that automated the patient checkup, the physical exam, patient history, and lab results. An early computer-based patient record and database followed. From this computerized database, large-scale population research was born. Thus, medical informatics got its start.

Electronic health records are in the headlines today, but their bloodlines run back to Dr. Collen. Kaiser Permanente’s early EHR system became internationally known because of his groundbreaking efforts. In fact, he predicted that the computer would have “the greatest technological impact on medical science since the invention of the microscope” [2].

In 1979, Dr. Collen ended his illustrious tenure with Medical Methods Research (now the Division of Research) and became Director of KP’s (Kaiser Permanente’s) Division of Technology Assessment. Since 1983, he has served as a consultant with the Division of Research, and he remains an enthusiastic supporter of research and teaching in The Permanente Medical Group (TPMG) [2].

He was a founder of the American Medical Informatics Association, the College of Medical Informatics, and the International Health Evaluation and Promotion Association, and an active member of the International Medical Informatics Association. He also served for many years as an advisor to the National Library of Medicine, including a term as chair of its Board of Scientific Counselors (1985–1987).

As an author and an editor, Dr. Collen has published extensively in the areas of internal medicine, preventive medicine, health services research, multiphasic testing, technology assessment and medical informatics. His publications include over 200 articles in the scientific literature and numerous books. As an NLM scholar-in-residence (1987–1993), he wrote a highly regarded book entitled The History of Medical Informatics in the United States (1995). For thirty years, Morrie served as editor of Methods and he is also featured prominently in every Who’s Who in the bioinformatics field.

Among his many accolades, Dr. Collen was elected to the Institute of Medicine of the National Academy of Science in 1981. He was also honored by the American College of Medical Informatics (ACMI) in 1993 with the highest honor it bestows, the Morris F. Collen, MD Medal for Outstanding Contributions to the Field of Medical Informatics [2].

Kaiser Permanente’s Morris F. Collen Research Award recognizes the efforts of...
the Permanente Medical Group physicians who make significant contributions to scientific literature as well as to the health and welfare of Kaiser Permanente members and their communities.

The Tributes

This long and distinguished career is the handiwork of someone of great modesty and charm, not only respected, but beloved by those who know him. We need only read the many tributes by his colleagues to get the full sense of the contributions and personality of this great human being. His commitment to service, his administrative abilities, his gifts for research and scholarship – all reflect his deep knowledge and also his humanity. So many of us recognize how fortunate we are to be counted among his associates and friends.

One of his colleagues, Robert Pearl, MD, Executive Director and CEO of The Kaiser Permanente Medical Group, described Morrie Collen’s phenomenal legacy in this way. “When I think of Morrie Collen, I think of two words, pioneer and vision. He was not just a year or two ahead of his time, he was decades ahead of his time….Morrie understood that to be successful, Kaiser Permanente had to not just practice great medicine; it had to create great medicine. He created a focus on research….He understood that our members would be our members for decades to come. And so, it was essential that we invest in systems and approaches that would make them healthier….” [5].

“Dr. Morris F. Collen, barred from military service because of his asthma, cabled founding [Kaiser Permanente] physician Sidney R. Garfield to apply for a job as a Home Front doctor” recounted Cecil C. Cutting, M.D., first executive director of The Kaiser Permanente Medical Group. “He started work on July 1, 1942, taking care of workers from Henry J. Kaiser shipyards in Richmond. Workers came by the tens of thousands. Dr. Collen soon found himself, in the frenzied days of the War, running the largest civilian pneumonia clinic in the country.” He continued, “This might seem chaotic, but it wasn’t, because Dr. Collen had the ability to systematize, to organize. It was this ability that Dr. Collen, in 1951, used to adapt research into something called the ‘multiphasic screening’ into systematized, mass health checkups for Longshoremen and later other Health Plan members. In 1960”, Dr. Cutting noted, “when Dr. Garfield asked him to explore the potential value of the computer in medicine, Dr. Collen became one of the pioneers in creating the field of Medical Informatics by adapting the ‘multiphasic’ to the computer” [5].

Bruce Sams, MD, second Executive Director of Kaiser Permanente, echoed Dr. Cutting’s observations about Morrie, saying, “One of the things that was most impressive about Morrie is his keen, analytical mind. He sees things very clearly; he analyzes them as a very logical way of approaching a problem… He had visions of other things that could be done – particularly in the computer world – and he was so far ahead of his time” [5].

Ted Van Brunt, MD, Director of Kaiser Permanente’s Division of Research from 1979 to 1991 agreed and said, “Morrie saw the potential far beyond most people – far beyond almost anyone, I think. Obviously, Sidney Garfield saw that very early on,” he said, “and Cecil Cutting and some of the key founding people. But Morrie saw that potential from a research perspective possibly better than anyone else early on …” [5].

Gary Friedman, MD, Director of Kaiser Permanente’s Division of Research from 1991 to 1998, added: “When I started working for Morrie in the late 1960s, those were very exciting times for the Division of Research, which was then called the Department of Medical Methods Research because Morrie and his team were really on the forefront of computerizing medical records and developing research capabilities in the HMO setting” [5].

Joe Selby, MD, MPH, Director of TPMG’s Division of Research from 1998 to 2011, said, “Morrie is and has been a visionary for the last 50 years. He had a vision of how technology could help deliver medical care to a large population of members, and he’s pursued that, and we’ve all pursued it” [5].

Morrie Today

Morris Collen continues to keep a busy calendar. A lively centenarian, he goes to the Kaiser Permanente Division of Research for meetings and works diligently daily at his home office on the second edition of his History of Medical Informatics in the United States, to be completed shortly.

Dr. Joe Selby shares his thoughts on the great man’s curiosity, energy and spirit. “I think the fact that he continues working, the fact that he’s stuck to this vision, comes from the fact that he’s inspired. And we say that he is inspired by the organization that he played such big role in putting together.”

In Closing

There are many farsighted and dedicated medical professionals serving the people of the United States. It is a pleasure for us to honor one who has made his mark and had an immeasurable impact on public health, not just in the United States but around the world as well. On the occasion of his 100th birthday year, Dr. Morris F. Collen richly deserves our thanks and praise for a job well done. Happy birthday and here’s wishing you many more productive years to come.

References