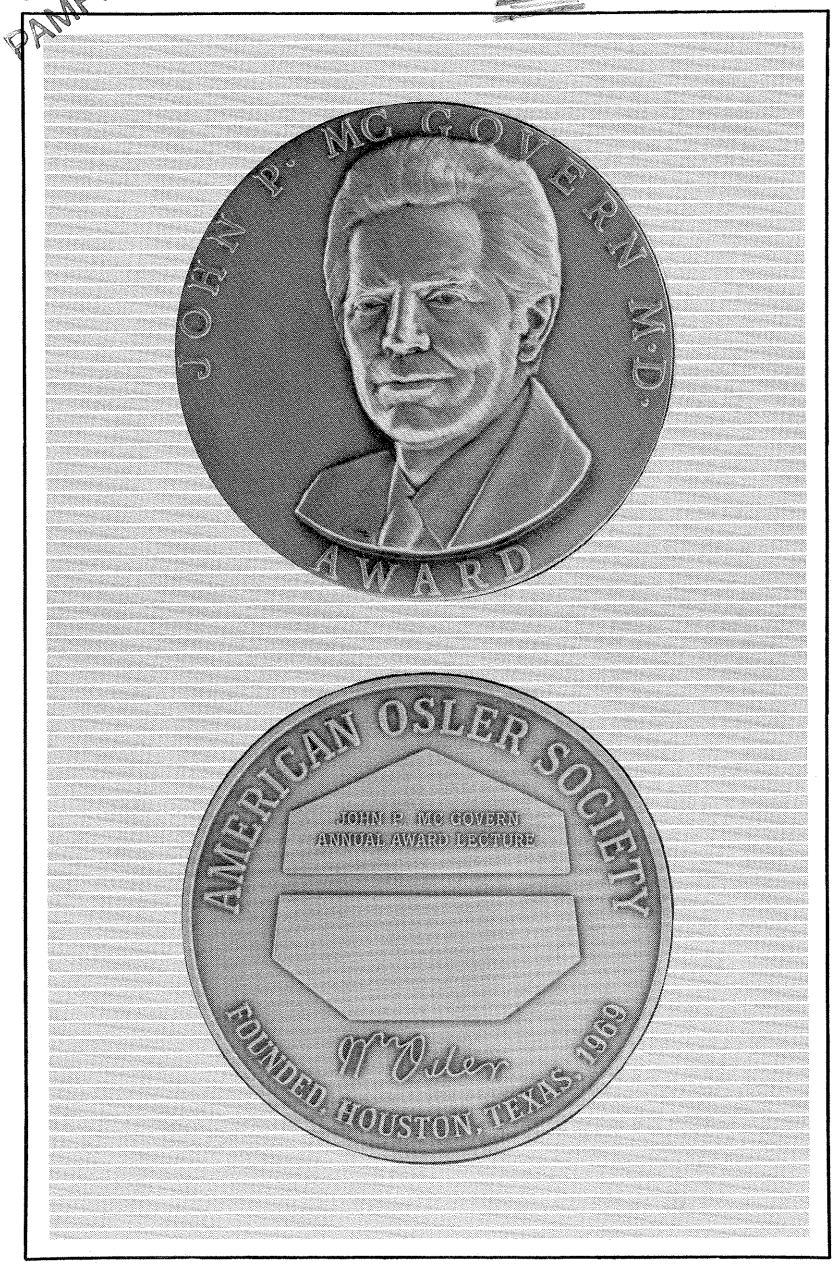
American Osler Society, Inc. - John P. McGovern Award Lectureship

From Doctor to Nurse with Love In a Molecular Age

WILLIAM C. BECK



AMERICAN OSLER SOCIETY, INC.

JOHN P. MCGOVERN AWARD LECTURESHIPS

1. *Our Lords, The Sick* presented by Albert R. Jonsen, Ph.D., April 12, 1986, in San Francisco, California

2. *To Humane Medicine: Back Door or Front Door?* presented by Edward J. Huth, M.D., April 29, 1987, in Philadelphia, Pennsylvania.

3. *Medicine and the Comic Spirit* presented by Joanne Trautmann Banks, May 3, 1988, in New Orleans Louisana.

4. *The 'Open Arms' Reviving: Can we Rekindle the Osler Flame?* presented by Lord Walton, April 26, 1989, in Birmingham, Alabama.

5. *Rx: Hope* presented by E.A. Vastyan, May 8, 1990, in Baltimore, Maryland.

6. *Osler's Gamble and Ours: The Meanings of Contemporary History* presented by Daniel M. Fox, April 10, 1991, in New Orleans, Louisiana.

7. *From Doctor to Nurse with Love In a Molecular Age* presented by William C. Beck, March 26th, 1992, in San Diego, California.

Cover—Obverse and reverse sides of John P. McGovern Award Lectureship commemorative medal which is presented to each annual lecturer.

The Seventh
JOHN P. MCGOVERN AWARD LECTURE

From Doctor to Nurse with Love In a Molecular Age

By

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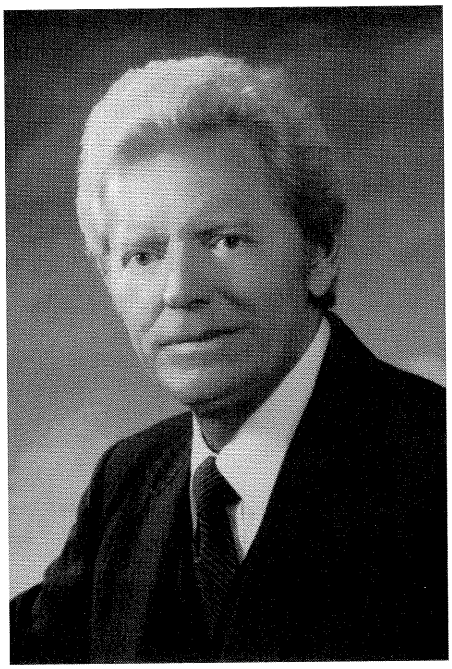
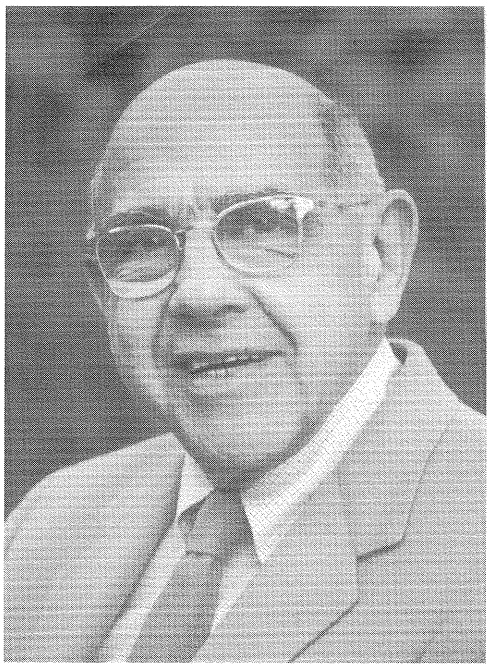
Delivered March 26th, 1992
at the Twenty-second Annual Meeting of the
AMERICAN OSLER SOCIETY
San Diego, California



JOHN P. MCGOVERN, M.D.

JOHN P. McGOVERN AWARD LECTURESHIP

THROUGH the generosity of the John P. McGovern Foundation to the American Osler Society, a John P. McGovern Award Lectureship was established in 1986. The lectureship makes possible an annual presentation of a paper dedicated to the general areas of Sir William Osler's interests in the interface between the humanities and the sciences - in particular, medicine, literature, philosophy, and history. The lectureship is awarded to a leader of wide reputation who is selected by a special committee of the Society and is especially significant in that it also stands as a commemoration of Doctor McGovern's own longstanding interest in and contributions to Osleriana.



William C. Beck, M.D., F.A.C.S

WILLIAM C. BECK, M.D., F.A.C.S.

BORN IN CHICAGO, ILLINOIS, and educated at the University of Wisconsin and Northwestern University (B.A., M.D.). He practiced as a general surgeon in Chicago, following residency training in Frankfurt, a/m Germany. He was on the staff of the St. Joseph and St. Vincent Hospitals in Chicago as well as the Cook County and Illinois Research Hospitals. He taught at the University of Illinois until entrance into the U.S. Army with the Cook County Hospital Affiliated 297th General Hospital in World War II. He also served as Chief of the Surgical Services with the Syracuse University Unit and at Gardiner General Hospital with the rank of Colonel. After the war he went to the Guthrie Clinic in Sayre, Pennsylvania, eventually becoming Chief of the Department of Surgery of the Robert Packer Hospital and Guthrie Clinic, Sayre, Pennsylvania. He was a lecturer in Surgery at the University of Pennsylvania and Professor of Surgery at Hahnemann University. Dr. Beck's research interests during and since his residency have been largely in the area of surgical infection control and the other elements in the surroundings of the hospital such as lighting, air currents, air conditioning, and the delivery of health care. He has published 3 books, over 250 articles as well as 7 book chapters. He is President Emeritus of the Guthrie Foundation for Education and Research. He was President of the Association for the Advancement of Medical Instrumentation, Chairman of

the Health Facilities Committee of the Illuminating Engineering Society of North America, and a member of committees of the American Standards Institute, A.S.T.M., American College of Surgeons. He is a member of the American Surgical Association, Societe International de Chirugie, Central Society for Clinical Research, Central Surgical Association, Chicago Surgical Society, Royal Society of Medicine (England), and the American Medical Association.

From Doctor to Nurse with Love In a Molecular Age

I AM INDEED MOST HONORED to be asked to make a presentation to your prestigious group. Unfortunately my medical education did not include the best and best known work in medicine, the Osler Principles. But, for many years, at least weekly I do consult the Bibliotheca Osleriana. These thumbed pages, are within easy reach from my desk. It is, as you all know, not a pure reference volume, but contains a most thoughtful commentary. Thus it always provides stimulus, and inspiration to even the most modest lover of books. I have, recently, reread parts of his Aequanimitas volume. The beauty of his writing I had forgotten, and I am grateful for this stimulus to renew my reading.

The pride I feel at presenting a lecture in the name of Dr. John P. McGovern is an expression of the many wonderful tributes published in 1980 by the Health Sciences Institute.

Dr. McGovern with Dr. Henderson, in describing the origin of your Society, said that one of its aims is to counter what Sir William described as "Medical

Chauvinism." It is to this end that I have chosen to review the past, present and possible future interrelationships between the two principal healing professions, medicine and nursing.

The practice of medicine as espoused by Sir William Osler no longer exists. It is not even the sole domain of the medical doctor. The practice of allergy as the vocation of Dr. McGovern is no longer the exclusive realm of the physician allergist. Medical practice has evolved into a host of subdisciplines. For example, allergy is now the joint endeavor of allergists, immunologists, molecular biologists, aeropollution counters, medical technologists, and office nurses; although the allergist's name may still be the only one on the door.

This metamorphosis has taken place during my own life span. When I left medical school, the famous painting by Sir Luke Fildes entitled "The Doctor" typified our profession*. The bearded physician sits sympathetically beside a sick child lying on two mismatched chairs. The parents anxiously watch in the dimly lighted room, while the doctor obviously wonders what to do. Today's scientist M.D., Ph.D., (probably also bearded) in a well illuminated hospital setting, has reviewed a host of imaging and laboratory reports and consulted computerized algorithms. He is confident and knows exactly what to do. He has at hand a library with access to the world literature, consultants for every detail, and a compendium of unpronounceable miracle drugs.

*The original hangs in the lobby of the Robert Packer Hospital in Sayre, Pa. A second version in the Tate Gallery in London. The two paintings were exhibited together at the Manchester City Art Gallery in November - January 1987-88.

Specialization, of course, is per se not modern. Lyons and Petrucelli[1] report that Heroditus, in the fifth century B.C. wrote this of Egyptian medicine:

> Medicine with them is distributed in the following way: every physician is for one disease and not for several, and the whole country is of physicians of the eyes; others for the head; others for the teeth; others for the belly and others of obscure diseases.

They go on to say that specialization was not necessarily evidence of an advanced system of medicine, but that the Hermetic Collection of writings was so great that to learn it all would have been too great for any one man. Of course, this is, in large part, the reason for our fragmentation of practice today. It is my belief, and the subject of this dissertation that, while we have witnessed an explosion of this specialization process, economics will drive us into a countervailing implosion. The shrinking of multifactorial medicine will, I believe, be driven by the cost of superspecialization *and* by a shift of responsibility. The latter is attained by the transfer of tasks from doctor to nurse. As we shall see, this has already been and is continuing to be taking place.

The development of these phenomena can be traced through history. Medical practice progressed sluggishly until the middle of the eighteenth century. The medicine described by Galen in the second century had been practiced until 1700. Dr. Osler said: "Galen so read the meaning of Hippocrates that for fifteen centuries medicine stopped thinking." Artists Leonardo da Vinci and Albrecht Dürer led the way into the new medicine. The turning point came with Semmelweis and Nightingale. In the middle of the eighteenth century, Ignaz Semmelweis

evolved the method which made a hospital a safe place in which to give birth. He developed the simple precept of having attendants bathe their hands in a chlorine antiseptic rather than ineffectually washing them in a dirty basin[2]. This reduced the hospital mortality from 12.4% to 1.27%. During the same decade, Miss Florence Nightingale made hospitals safe for war casualties by introducing sanitation, ventilation and nutrition. This reduced the mortality in Skutari from 42% to 2%[3]. These feats are probably the only ones which would fit Lloyd MacLean of McGill's "Lead Ball Principle." He is quoted as saying, "If you hold a lead ball out the window and when you let go it goes up, you don't need a statistician to tell you that it was a significant event"[4]. The same decade also saw the beginnings of anesthesia and identified the relationship between bacteria to infection.

A new era came into being following the Semmelweis and Nightingale innovations. All science seems to have acquired a new impetus. The benefits of publication seemingly were fully employed achieving a global circulation of new ideas. The next landmark was World War II. Then an outburst of science took place and it is still in progress. Our learning is expanding logarithmically. I believe that much of this is due to miniaturization and new methods to display images. The light microscope provided knowledge of the cell and its diseases. The electron microscope revealed the anatomy and physiology of the cell itself. At present "researchers can measure and manipulate subcellular elements too small to be seen by the most powerful magnification"[5].

We have now entered into a molecular age. Cellular and molecular manipulation has today become a part of clinical medicine and is flourishing in the laboratory as

well. Technology has even progressed to the point where it is possible to recognize individual elements employing X-ray microanalysis. Here individual atoms are struck by electrons which results in the emission of X-rays. These are diffracted into types recognizable for every element. For study with the scanning electron microscope, tissues or even non-biologic material can be replicated into sections only a few tenths of a nanometer thick. Only a very few years ago our sections were cut with a microtome. I even learned to cut sections by hand, and you might imagine their thickness.

Medical education has kept pace with this current practice. Years have been added to the development of the physician. Medical school curricula have become standardized. Acceptance of the advances of basic science research alters teaching as it largely is produced by the same educators. Years of additional schooling and practical application through residency are demanded before permitting independent 'practice' on patients.

Even with the added years required there is almost a full supply of physicians. Some even say that there is an oversupply. In contrast, there has always been a huge need for nurses. In 1948 an A.M.A. committee reported that nursing schools needed to double their enrollment to provide a minimum supply. In that report 63% of hospitals were in very short supply.[6] This situation has continued to the present time. The current need is exemplified by the tremendous inducements offered in the classified sections of our media. As a result, more and more nurse substitutes have come into being: nursing assistants, technicians in all fields, etc. This undersupply has caused those organizations and institutions who needed nurses most to discourage the educational progress which medicine has enjoyed.

Nursing history is as old as that of medicine. Lyons and Petrucelli[7] quote Charaka's Samhita who, in India, a millennium before Christ, listed four qualifications for a nurse: "knowledge of the manner in which medicines should be prepared or compounded; cleverness; devotion to the patient; and purity of mind and body."*

They go on to state that, during the crusades, orders of friars performed nursing duties. This would dispel the notion that nursing historically had always been limited to females.

Miss Nightingale's contribution included the creation of schooled professionals (unfortunately dubbed 'trained' rather than 'educated.') No longer would nursing service be provided by domestic servants[8]. Nuns, who had taken over the duties of the friars now also instituted 'training.'

Since nursing's first claim to professional status, they have been gradually achieving its true dimension. This has been accomplished through necessity rather than protest. World economics has required the creation of a *new* nurse; one to whom increasing professional responsibility can be entrusted. They have proven themselves fully worthy. Moreover, it has engendered the respect that they seek. William Knaus, et al, have shown that the cooperative effort of physician and nurse is reflected in reduction of morbidity, mortality, and patient suffering[9]. However, the Knaus' study also revealed that the successful nurse contributor to the partnership is a *very well educated* (not trained) one. "Clinical specialists with *masters degrees* and extensive experience in intensive care had as their primary responsibility the orientation and devel-

*Osler lists "...the mystic seven, your lamps to lighten, tact, tidiness, taciturnity, sympathy, gentleness, cheerfulness all linked together by charity."

opment of the nursing staff."

Quite in contrast, the basic R.N. status can today be achieved by any one of three routes, lasting either two, three or four years. The four year course leads to a Bachelor of Nursing degree; the R.N. comes through a credentialing examination. I have, in 1964, suggested that nursing must reorient their educational system. I said that only one standard should exist[10].

Although nursing's educational standards may not have kept pace, the incursion of certifiable specialization has, in the last few years, transformed nursing practice. Unfortunately, the Nursing Specialty Boards do not inspect and accredit the institutions which provide the post-R.N. training[11]. The specialties to which nurses may be accredited are growing as rapidly as are the Medical Boards. It might be well to recall Dr. Charles H. Mayo's aphorism that "the definition of a specialist is one who knows more about less and less." Not as well known is his added caveat "it is essential that the specialist must have some association with others who represent the whole of which the specialty is a part"[12]. I would add that the nurse educator should be a person of superior education (which Knaus [9] defines as a person with an advanced collegiate degree). Most Nursing Boards state that in 1993 they will accept only R.N.s who have at least a baccalaureate degree [11].

I must now address the very difficult question of interprofessional dissonance. That it is significant is attested by the fact that a search of the national literature discloses that 93 articles in both nursing and medical refereed literature addressed this issue during the last year. Most suggest that nurses have been forced to truckle to the physician; surgeons demand a fawning, obsequi-

ous *female* yielding to their apotheotic demands. Some have suggested that the relationship has become a 'game'[13]. Others feel that a special partnership should exist between nurse and patient [14], [not the physician]. That the nurse is the patient's 'advocate', and should 'blow the whistle' on incompetent physicians[15]. **I found none that recognized that the patient could discharge his doctor but could not fire his nurse.** Also that an 'advocate' is customarily chosen by the person represented, unless assigned by a court; even then the client has a choice.

I, however, do believe that the nurse/doctor contentions will gradually disappear as the hospital-based nurse becomes a more important *partner* in the care team. Today's young physician has survived a course of four years of premedical study and four years of medical school, then an internship. During his next four or five years of residency, he may appear condescending or even overbearing to the nurse. But as he mellows and recognizes the accomplishments of the nursing teammate, arrogance will be replaced by appreciation.

The Nurse Practice Act in my Commonwealth of Pennsylvania[16] defines nursing as follows: "The practice of professional nursing means diagnosing and treating human responses to actual or potential health problems through such services as case finding, health teaching, health counseling, and provision of care supportive to or restorative of life and well being *and executing medical regimens as prescribed by a licensed physician or dentist* [italics are mine]. The latter portion of the definition is a point of contact between professional nurse and physician in which dissonance might occur, because the physician does not recognize, nor possibly appreciate the many

other services rendered by the modern professional nurse.

From time to time, the State Board of Nursing proposes rules and regulations, ratified by the State Legislature, which are descriptive of the changing aspects of some of the clinical nursing activities. So, for example, our State Legal Code cites the following examples: "To collect arterial and venous blood even in adult and infant intensive care units; carry out vaginal examinations and do 'Pap' smears; do certain intraocular procedures; remove sutures; practice hypnosis; program pacemakers; use and administer drugs, administer chemotherapy; and change tracheostomy and gastrostomy tubes"[17]. In California, they may now write prescriptions. These, not too long ago, were considered solely the province of an advanced chief resident in his fourth or fifth year. My own chief, my father, and Dr. Osler as well as others of that generation are spinning in their graves. But the modern Professional nurse has proven to be fully equal to these tasks, and carries them out deftly and with aplomb.

When I recently entered a hospital as a patient, a nurse recorded my history and physically examined me. She sent an aide to take my temperature, count respiration and take my blood pressure. She also instructed a student nurse in how to insert a venous catheter and start an intravenous solution. My surgeon examined the anatomy of his proposed operation and read the nurse's chart. The junior resident recorded the therapeutic plan for my illness. *She* did find time to explain what was in store for me.

The surgeon turned over to the nurse my clinical management both before and after the operation. She (or he) bestowed on me most of the 'tender loving care' that I received. A nursing assistant carried on most of what

Miss Nightingale had defined as "nursing." A dietician discussed with me my diabetic diet, the respiratory technician my breathing, a radiology technician took care of my X-ray, ultrasound, and magnetic resonance scans. In these days of molecular science, the physician serves the functions of 'Mission Control' at Cape Canaveral, while the nurse acts as the astronaut. A host of well trained technicians and technologists make this possible. As an 'outpatient' I had a prolonged course of radiation therapy. A Therapeutic Radiologist designed the treatment plan, and a physicist calculated the proper alignments to produce the required dosage with a minimum of skin exposure. The daily adjustment of the huge linear accelerator and the placement of my anatomy into the proper alignment, was done by technicians who turned the gadget on and off.

My illness provided me with a 'catbird seat' to observe the current hospital practice. It appears that health care is becoming ever more hierarchial. In my early days, *all* of the clinical care was carried out by the physician. Nurses performed the non-clinical functions as well as the housekeeping. The education emerging from Miss Nightingale's contributions[18], as well as the realization of the nurse's capabilities has redefined the functional parameters. Without doubt, these will continue to change.

What would Dr. Osler have thought of the current system? According to Richard Golden, in his presidential address two years ago, Dr. Osler was characterized as a therapeutic nihilist. I believe he belonged to the second generation of modern medicine based on pathology; the first rested on anatomy. The third, from which we are presently emerging, is concerned with normal and abnormal physiology. Dr. Osler would probably decry our

present concentration on therapy. But today we have specific treatment for almost all bacterial disease. Our present concern is with certain viri.

Sir William's opinions of nursing seem less clear. Of Florence Nightingale he said "Ever blessed be her name." Of nursing in general he wrote "A luxury in private, the trained nurse has become one of the blessings of humanity, taking a place between physician and priest: And not inferior to either." But he also said "Darwin gives a graphic account of the marvelous care-taking capacity of the little Formica Fusca — a slave ant."

Today's most vexing and significant problem is to expand the supply of nurses, and to enrich and standardize their education. These imperatives must be accomplished simultaneously. Now education and supply vie for priority, each at the expense of the other. Hospitals, those who need nurses, seek a reduction in the requirements for the R.N. Nursing organizations attempt to augment education at the sacrifice of supply. Educational advancement and other techniques are being offered to lure more into the nursing profession, as well as to entice nurses to their own institution as you can see in the classified pages of our print media[19]. This at a time when there is massive unemployment, including females, with literally millions seeking jobs.

I might suggest a possible solution. It would involve a restructuring of the entire entry system into the nursing pyramid. It would be accomplished by giving academic credit for each of the progressive stages of development. So, for example, a *young lady* could enter the health care field at any level. She might begin with the educational curriculum for nurses' aids. After graduation and serving in this endeavor for a minimum time, she could apply to

a course for nurses' assistants or technicians, getting credit to an advanced standing in that curriculum. After service at that level, she could apply for advanced standing in a school of 'practical' nursing. Graduation from one of these might qualify for advanced standing in an academic school of nursing. After graduation from nursing school, armed with prescribed activity in an "accredited" training program, she could qualify for a specialty certification examination. Thus, each of the ladder's steps would recognize previous attainments. Each of these schools would have to have a minimum curriculum approved by the State's Nursing Board.

Such a system would legitimize the nursing hierarchy, establish goals to be set by each individual. Entry could be at any level, and progress from one to the other could be monitored. I believe that it would attract many more into the field as they view their potentials. I have used the gender consideration, because nursing's parameters are ones in which women have been able to not only excel, but their attainments have been recognized. Also 97% of nurses are women. Furthermore, we are seeing a tremendous increase in the number of women achieving positions of excellence and reward in all of health care.

This concept is essentially not original. Alt and Housten have written a book on the subject[20]. The University of Texas' M.D. Anderson Hospital has created career ladders in their own instructional systems. It divides all levels of nursing into five steps, with definitions for each, and progress from one into another. In our area, a Community College has a cooperative arrangement with a State University where an associate degree can be extended to a Bachelor of Science from one to the other. What I believe is new is suggesting this method for

general adoption and specifically as a recruitment tool to significantly add to the nursing pool as an objective.

I agree with George Weinstein who characterized the ideal professional as one "who is compassionate, skillful, knowledgeable and creative"[21]. This applies to both physician and nurse. Nurses are now greeting patients and introducing themselves by name. Unfortunately, this is often as Alice or Jane, rather than Alice Jones or Jane Smith. One has to dislocate one's neck to read the name tag through the lower segment of one's trifocals. But nurses are responsibly accepting the challenges and obligations of clinical care gracefully and efficiently. I believe that more and more complex duties will come under their purview, and will be well handled. As this proceeds, the relationships will develop into mutual trust and respect. This process will be beneficial to the patient, who is already a mutual responsibility. The professions will, in my judgment, intertwine as do the snakes on the caduceus. This, I hope, will continue to develop as we progress into the molecular age.

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