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ABSTRACT

Since much of the education of physicians and nurses centers on the diagnosis and treatment of acute medical and surgical conditions, the relatively asymptomatic hypertensive patient may not be diagnosed and treated before serious consequences such as stroke, kidney and/or heart failure occur. Presently being planned is a multimedia educational system to teach professional nurses the knowledge and skills necessary to manage the hypertensive individual. Due to the varied education and experience backgrounds among nurses, the program will provide alternate routes through the learning system. Phase I will entail planning and development; Phase II, field testing, evaluation, and modification; and Phase III, professional production and packaging. (STS)

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A MULTIDISCIPLINARY APPROACH TO A LEARNING SYSTEM  
FOR HEALTH-CARE PROFESSIONALS

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A MULTIDISCIPLINARY APPROACH TO A LEARNING SYSTEM  
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Patricia J. Baldwin and  
Joseph A. Tucker

Hypertension, elevated blood pressure, has been designated as one of the leading health care problems in the United States at the present time. The American Heart Association has estimated that there are approximately 23 million people in this country currently suffering from this disease. Of this number, many people are unaware that have the disease and over 75 per cent are not under adequate treatment. These statistics are particularly frustrating for several reasons. The first, and foremost, is that the devastating terminal consequences of uncontrolled high blood pressure, strokes, kidney failure and heart failure, are all preventable complications. Secondly, the treatment and control of high blood pressure is a relatively simple therapy. Since the advent of hypotensive medications several years ago, most individuals can be controlled by a simple course of drug therapy with limited modification of diet and life style. Indeed, many people can be controlled with a simple regimen of "one-pill-a-day" with no modification of life style. Why, then, are there so many Americans without adequate treatment?

The answer to this question may lie in the system of health care delivery presently practiced in the United States. This system emphasizes treatment of those who are ill either acutely or chronically. Less emphasis is placed on the prevention of illness. The finding of individuals who are

ill but have no symptoms of the illness, and on following them on a long-term basis is not done systematically. This is so since much of the education of physicians and nurses centers on the diagnosis and treatment of acute medical and surgical conditions. A disproportionate amount of money is spent on treatment as opposed to prevention.

Many health care specialists have suggested that the care of the relatively asymptomatic hypertensive patient would swamp an already overloaded health care system. Those who advocate this position are perhaps unaware of the false economy that this reasoning represents. Early diagnosis and management of hypertensive individuals would prevent the catastrophic effects of the disease and would ultimately prove to be saving of time and money for the health care system. Adequate physical facilities for the management of the hypertensive patient are available; the real concern is the lack of properly prepared health care professionals. What then is a possible solution to this problem?

One of the most interesting approaches is to use the professional registered nurse as the health care agent. She is highly qualified for the role due to her broad preparation in the physical and social sciences. She is challenged by the multiple needs of the patient and will strive to develop interpersonal relationships so that with the patient she will comply with the medical regimen and will be encouraged to modify lifestyles as it is necessary to prevent complications of the disease.

The nursing profession has recognized the need to prepare and utilize nurses in a less traditional role in order to meet the needs of the American people. Rapid changes in society and in the health care system have forced the nurse to function in a greatly expanded role. Commissions of the Federal government have examined this trend and all have concluded that the



use of nurses in the expanded role will facilitate better health care to larger numbers in our society. All prototype units which utilize nurses as the primary health care agent have concluded that this method of health care delivery is realistic, reliable, and economical. Offering a wider range of care to the patient.

Formal schools of nursing education have examined their curriculum content in an effort to meet the needs of the students who will be expected to function in the expanded role and have instituted appropriate courses. But what of the nurses who are presently in practice? How will they gain knowledge regarding patients with special types of needs? Specifically, how will nurses gain the knowledge and skills necessary to successfully manage the hypertensive individual?

This is the problem that brought together a multidisciplinary team of authorities in their various fields to determine if a learning system could be developed that could meet this educational need. The basic team members included a physician who is a medical educator and noted authority on the treatment of hypertension, a nurse educator who is coordinator of a graduate program which prepares nurses at the master's level to be specialists in cardiovascular nursing and, a faculty member in a school of education whose area of expertise is educational technology. These team members were convinced of the importance of the project and believed that an efficient learning system could be developed. Many experts were consulted, a formal project proposal was prepared and presented to a federal agency for funding. Preliminary approval of the project was received.

Although funding has not yet been obtained, planning by the project members continues. At the beginning, purposes, objectives, strategies, necessary curriculum content and methodologies were delineated. The

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ultimate purpose of the project was declared to be an authoritative, educationally sound multimedia system to facilitate the preparation of the professional nurse to manage the hypertensive patient. It was decided to follow, when possible, the guidelines which had been developed by the National High Blood Pressure Education Task Force on Nursing in High Blood Pressure Control. Those guidelines were developed by a Task Force which was part of a larger program sponsored by the Department of Health, Education, and Welfare to combat the rising trend of hypertension.

Broadly, the curriculum content for the current project was identified as that information necessary to give the learner an understanding of the multifaceted aspects of hypertension which include the pathophysiology of the disease, recognized medical therapy, other diseases commonly associated with hypertension and psychosocial responses, particularly as they relate to compliance with the therapeutic regimen.

Behavioral objectives associated with the content include for each patient the identification of abnormalities of blood pressure regulation, assessment of health needs, implementation of a treatment program, evaluation of progress and referral to appropriate medical management if significant problems are suspected.

Early in the planning it was recognized that frequent testing of course content was necessary to insure reliability and validity of the learning system. Therefore, testing devices are being developed in an attempt to measure the students progress during and after the course. Reliability of the system (and parts of it during the development) will be established by testing with a different but similar group. Content validity will be evaluated by a group of expert consultants.

The fact that this learning system is applicable to all professional nurses presented an early problem for the planning team. At the present time there are several educational programs which prepared students for nursing: diploma, hospital-affiliated programs; associate degree programs; and, baccalaureate schools. In addition, there are nurses who function in specialized as opposed to non-specialized practice and those who have a great deal of professional practice experience as opposed to those who have only practiced on a limited basis due to such things as family responsibilities. Plans are being made to assess the knowledge level of the participants and to provide alternate routes within the learning system to provide for a common level of achievement at the conclusion of the program. In order that the final package will be applicable to all registered nurses, the testing during the development of the package will be stratified to assure applicability to all groups of professional nurses.

The funded part of the project involves three phases. Phase I, which lasts twelve months, includes developing the subject matter and determining the behavioral objectives for the entire course, production and testing of one or two pilot units and production of the entire preliminary multimedia instructional system. The learning system developed during this phase will make use of a number of educational techniques, each to communicate a particular phase of the teaching program but integrated to provide a complete learning experience.

The separate components may include films, tapes, slides, audiotapes, and texts, as well as such teaching-learning techniques as lectures, demonstrations, discussions, clinical experiences with patients, case-history presentations and problem solving. The individual components of the system will be integrated and interrelated so that one reinforces the other to improve the efficiency of the learning process. The materials will also

require active participation by the learner. The strength and uniqueness of the system will result directly from the prime status assigned to its components.

An important part of Phase I is the development of a prototype unit. The unit selected will be one that lends itself to a variety of teaching techniques and media and involves learning specific skills and knowledge. It will be developed with several alternative forms for some treatment. The prototype unit has two purposes: first, to enable the project members to refine its procedures for developing this and subsequent units; and second, to determine the best media for presenting the subject matter for all treatments--classroom, laboratory and clinical.

Phase II, scheduled to last six months, involves field testing, evaluation and modification of the preliminary multimedia instructional system. The carefully established methods of evaluation, including a specialized team appointed for this purpose, will be utilized at this time. Important also in this phase is the use of training course instructors. These will be specially trained individuals, possibly graduate students, who will conduct the field test phase. This is to evaluate the level of ability to conduct the course and to evaluate the administrative procedures involved in utilizing the multimedia instructional system.

Phase III, the last phase which is expected to last for twelve months, involves the professional production and packaging of the system. It is planned for this phase to be contracted out to a company which specialized in development of learning systems for the health care industry. This professional producer should also be experienced in the distribution of the product since the project coordinators plan for a wide distribution so it will be available to nurses country-wide.

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While waiting for full federal funding for the development of the total system, work has continued in planning which has been discussed previously.

In addition, testing of selected content areas has been accomplished.

During the past few months seminars were held at a large university. The participants were pre-tested and retested at the conclusion of the lectures to find areas which would need improvement. In this manner, work has continued to develop and test areas which will become part of the finished product. In this manner progress is being made to develop the learning system for nurses in their part of the health care delivery which is being recognized as a significant area of importance in the American society at the present time.

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