A neurosurgical nurse practitioner training program

An educational technical note

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A training program for neurosurgical nurse practitioners is described. The goals and alternative methods of training are described. The curriculum selected is explained in detail and the results are briefly considered, along with some remaining problems.

KEY WORDS neurosurgical nurse practitioner education training

Concern that excessive numbers of neurosurgeons are being trained has been voiced. Increasing numbers of neurosurgeons are reaching the private sector and furnishing neurosurgical care at hospitals that previously had little or none. There has been a continued demand that such care be optimal, both in the large teaching hospitals and in the smaller community institutions. In teaching hospitals, this situation has led to a real dichotomy between service needs and the projected demand for trained neurosurgeons.

At many large urban hospitals the housestaff is resisting the former long hours of 80 to 120 hours per week, thus leaving further gaps in available service. In our own hospital, as in others, the need to take action was further stressed by the news that a significant cutback in the number of general interns would occur in July, 1976, thereby leaving the specialty services with only the occasional elective intern. Our neurosurgical division, therefore, embarked upon a program of training five nurse practitioners to fill this service-training hiatus.

Since this was a new program, it was necessary to define the training goals. Although initially responding to our own requirements, we bore in mind that perhaps a need was developing for a new type of allied health person in neurosurgery. Since we had the opportunity to innovate, we thought it would be best to take a broad view of the training program, so that while filling our immediate needs, we might design a program that could be used by others who were more oriented toward the smaller community hospital.

Training Program

Goals

Our initial objectives for the persons being trained were defined as follows:

1. To be able to interview patients and take a basic general and neurological history according to accepted procedure
2. To be able to perform a complete physical and neurological examination according to accepted procedures
3. To maintain a clear, comprehensive, and updated medical record on all patients assigned to their care; assess the clinical conditions, delineate a management and follow-up plan on each, including the ordering and interpreting of appropriate laboratory tests and special procedures
4. To know the drugs commonly used in neurosurgery with their usual dosage, side effects, precautions, indications, and contraindications
5. To assist in instructing patients and their relatives about their health problems and the various resources available to them.

The type of training program also required definition. It was recognized that there were at least five existing basic models for the production of new health practitioners,1 as follows:

1. A 1- to 2-year nurse clinician program for nurse practitioners, based on nursing school
Nurse practitioner program

TABLE 1
Nurse practitioner curriculum for first 6 months

<table>
<thead>
<tr>
<th>Period</th>
<th>Morning</th>
<th>Afternoon</th>
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<tbody>
<tr>
<td>December first</td>
<td>gross anatomy; physiology; introduction to history &amp; physical examination</td>
<td>cardiology; pulmonary medicine; general surgery; instruction in physical examination</td>
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<tr>
<td>2 weeks</td>
<td></td>
<td>postmortem attendance</td>
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<td>second</td>
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<tr>
<td>January first</td>
<td>neuroanatomy; neurological history &amp; examination</td>
<td>independent history &amp; physical examination with workup for discussion; psychiatry</td>
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<tr>
<td>2 weeks</td>
<td></td>
<td>otolaryngology; lab studies: urinalysis, hematology, biochemistry, CSF, bacteriology</td>
</tr>
<tr>
<td>second</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February first</td>
<td>disease processes; differential diagnosis; therapeutics; case studies</td>
<td>management plan; order writing; review of disease process by organ system &amp; response</td>
</tr>
<tr>
<td>2 weeks</td>
<td></td>
<td>pharmacology</td>
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<tr>
<td>second</td>
<td></td>
<td>gynecology</td>
</tr>
<tr>
<td>March first</td>
<td></td>
<td>physical therapy; social service; floor procedures</td>
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<tr>
<td>2 weeks</td>
<td></td>
<td>practicum</td>
</tr>
<tr>
<td>April first</td>
<td></td>
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<tr>
<td>2 weeks</td>
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<tr>
<td>May first</td>
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<td>2 weeks</td>
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2. A 6-month to 1-year program, combining academic and on-the-job training for nurses (so-called “Primex”)
3. A 6- to 9-month program for pediatric nurse practitioners
4. A 2-year physician’s assistant model
5. A MEDEX program consisting of 12 to 24 months of combined academic and on-the-job training for students with extensive previous training and experience.

Because of the less formal requirements existing for nurse practitioners, and because of the ready acceptance of nurses within the hospital role, we decided after considerable discussion with our department of education that the simplest and most readily acceptable route was that of training nurse practitioners rather than physician’s assistants. We therefore agreed to pursue a modification of the second model.

Curriculum

Administrative approval for the pilot project having been gained, we designed a curriculum that we felt met the various goals defined above. A timetable for this curriculum for the first 6 months is shown in Table 1. In brief, it involved about 20 hours a week of didactic training for 6 months, the primary load being carried by the physicians in the neurosurgery department, but with definite and significant input from other colleagues, both medical and nursing, and from allied fields such as physical therapy, social sciences, psychology, and pharmacology. The first few weeks included 30 to 35 hours of didactic training and, as the program progressed, the didactic portion fell to 20 hours a week with another 20 being taken up in practice training on wards or in laboratories. As Table 1 shows, a simultaneous approach to anatomy, physiology, and physical examination was utilized. Gross anatomy was taught simultaneously with physiology, so that the anatomy of a given organ system or region was correlated with its physiology. Once the initial training in anatomy and physiology had been given, the introduction to history taking and physical diagnosis was also begun, thus correlating the anatomy and physiology with the history taking and physical diagnosis. The aid of the various specialties was then sought; a session in cardiology and pulmonary medicine was held in those clinics during the period when the heart and lungs were being
studied. Likewise, special instruction by physicians in the field was given in diseases of special areas such as the breast, thyroid, and abdomen, as these were being studied in the anatomy and physiology portions of the course.

Once the students were able to take reasonable histories and perform physical examinations, they received regular assignments of patients, about two a week, to be presented and discussed in class so that the other students would benefit from the presentation, as in the traditional medical school approach. This served as a natural springboard for the last 3 months, when study of such subjects as the disease processes, differential diagnosis, and therapeutics was begun. At the same time students were trained in management plan and order writing using the case method of study, supplemented by text. At the end of 6 months of didactic training, the nurse practitioners were placed functionally in their role on the neurological ward, with continued in-service training of 2 to 4 hours a week on a regular basis, and attendance at all neurological rounds. This second period lasted 6 months also.

At the end of that time, those nurse practitioners who successfully completed certain criteria were certified. The criteria were as follows: 1) Successful completion of the 12-month training program with evidence during the first 6 months of satisfactory progress in completion of each section by the use of formal, graded quizzes. During the second part of the program there were periodic written evaluations of the student's progress. Proficiency in special procedures was also determined at the end of the second half of the program. 2) Successful completion at the end of the program of an actual history and physical and neurological examination, to be discussed and graded in detail. 3) Completion at the end of the program of an examination to evaluate the nurse practitioner's patient management plan.

Particular steps were made to insure the success and ultimate acceptance of the nurse practitioners in their new role. They were isolated from any part in the actual care of admitted patients for the first 6 months. During this time they went to the ward solely to evaluate and examine patients, took no part in the patient's care, and returned directly to the classroom. They were seen by the floor nurses as students and not as nurses in an on-the-job training setting. Also, on at least three occasions during the first 6 months, formal sessions were held between the floor nurses and their supervisors on the one hand, and the nurse practitioners and the instructors on the other, to orient both sets of people as to the role of the nurse practitioners.

Results

When they finally returned to the floor on a full-time basis, the nurse practitioners were adept in their new skills, performed them regularly, and had completed the transition from floor nurse to nurse practitioner. Most important was the change in mental attitude that took the student from a passive role to that of initiating a diagnostic impression and treatment plan, always, of course, after discussion with the physician. This change to an active manipulator of patient care with independent responsibility was one of the most interesting and exciting changes that took place during the program. The ability to perform certain practical special skills also added to the new status of the nurse practitioner.

The results to date have been heartening. Physicians, of course, remain ultimately responsible for the patients. The most immediate supervision is from the residents assigned to the ward, with whom the nurse practitioners relate in much the same way as do interns or first year postgraduate physicians (PG-1's). The history and physical and neurological examination performed by the nurse practitioners are equal to, and often better than those performed by the former first-year housestaff. If a PG-1 should rotate through the service, he or she is senior to the nurse practitioner, but it is of interest that the PG-1 often seeks counsel from the nurse practitioner on problems with the neurological findings, or decisions regarding care, due to their additional experience.

Medications or other orders must be reviewed with a licensed physician, but once this has been done, implementation may occur, provided that the orders are countersigned before the nurse practitioner's tour of duty ends — that is, within a maximum of 8 hours. Nurse practitioners make regular notes on patients, and these, as well as the initial examinations, must be countersigned by a licensed physician.

The nurse practitioners presently work only within the hospital wards, and do not assist at surgery. It is contemplated that in future they may be required to screen patients in the outpatient department or emergency room, conduct consultations, and assist at surgery, but further training would be necessary to make this practical, and until now it has been felt that more problems would be caused than solved by such duties.

Malpractice insurance is specifically provided by the hospital. The legal authority for nurse practitioners is at present quite variable from state to state. They are licensed as nurses in our state, and as such, are covered by the Illinois Nursing Act. This act is fairly traditional in its provisions, and implies structured supervision by physicians of all activities that differ from the classical nurse's role. Such laws vary greatly from state to state, and the issues regarding licensing and malpractice liability must be resolved at a local level.

The acceptance of the nurse practitioners by the floor nurses has been excellent, and they are relied upon and looked on as needed colleagues. The upgrading and education of the floor nurse by this close interchange with the nurse practitioners has also been an
Nurse practitioner program

ongoing event. Similar positive experiences have been reported by others.2,3

It is plain that there are still new areas to cover. There should be continued revision and upgrading of the curriculum so that it will be most efficient and most beneficial for the nurse practitioner's role. The organization of administrative responsibility for the new type of personnel should be carefully defined for each setting. A continued in-service training program should be planned, based on the educational and responsibility limits of the nurse practitioners in their particular institutions. Finally, the selection and definition of those qualities in a candidate that would produce a successful nurse practitioner is essential.

It is our belief that the nurse practitioner can and should fill a definite need in a neurosurgical man-power situation. Continued experience with training programs for these people will indicate exactly what their role or roles may be.

References


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