Failures and Successes in a Stroke Program

BY ROBERT S. DOW, M.D., PH.D., H. LENOX DICK, M.D., AND FRED A. CROWELL, PH.D.

Abstract: Failures and Successes in a Stroke Program

The activities toward stroke prevention and improving stroke care at Good Samaritan Hospital and Medical Center of Portland, Oregon, for the past ten years are described. The program was multifaceted and included a stroke clinic, a stroke care unit, a course for nurses from throughout the state of Oregon and southwestern Washington, panel discussions and exhibits about stroke care, an educational program for families of stroke patients and satellite clinics at two small communities in Oregon.

The presence of this program changed the percentage of patients with strokes of equal severity going home from 13% to 58% at Good Samaritan Hospital and Medical Center and no similar trend could be detected in five other hospitals in Portland during a comparable period.

The evaluation of the program revealed that a team approach to stroke care in a special unit improved the care of stroke patients throughout the hospital and was effective in bringing the family into an active role in rehabilitation and patient care. The program also achieved educational goals.

Additional Key Words: stroke care unit
stroke prevention
stroke clinic
stroke treatment
stroke rehabilitation
stroke education

Introduction

For over ten years an active effort to improve the care of patients with both threatened and completed stroke has been vigorously pursued at Good Samaritan Hospital and Medical Center (GSH&MC) in Portland, Oregon. It seems appropriate to review these activities, point out notable failures and successes, and describe the methods of attempted evaluation employed in the hopes that our experience will be of some help to others contemplating embarking on a similar program in a similar setting.

The program was begun in 1962 with a Demonstration Stroke Prevention Clinic financed in part by the Division of Chronic Diseases of the U.S. Public Health Service. This support was terminated after three years and the program was again given outside financial support beginning July 1, 1968, through the Oregon Regional Medical Program for Heart Disease, Cancer and Stroke. The goals of the program were: (1) to improve the care of patients with cerebrovascular disease by applying the best methods of treatment available to patients seen in the Good Samaritan Hospital, and (2) to educate physicians, nurses and other paramedical personnel in the methods being used and to influence their utilization in other institutions and agencies. As the years passed other programs pertaining to stroke care were added.

These programs consisted of the following discreet but interrelated components:

1. The Stroke Clinic at GSH&MC
2. The Stroke Care Unit at GSH&MC
3. Educational Programs
   a. A course in nursing care of patients with stroke
   b. Presentations of panel discussions and exhibits to professional groups by members of the Stroke Care Team
   c. Educational program for families of stroke patients
   d. Satellite clinics at Bend and Astoria, Oregon

1. The Stroke Clinic

This activity seemed to serve a useful purpose at its beginning but was finally terminated as a subsidized special clinic on March 31, 1971, because of poor utilization. Every effort through announcements, brochures, TV and radio coverage, and newspaper publicity was used to make this clinic a viable part of the project. The clinic was well utilized when first established, but in the meantime stroke prevention by surgical endarterectomy (which in Portland was a novel thing in 1962) was no longer new and as the years passed there was a greater availability of this procedure through regular sources so that a special, subsidized clinic was no longer needed. The same principles of treatment established at the clinic continued...
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to be followed by the neurology staff in their private patients and will be reviewed briefly.

The clinic applied the latest recognized methods of treating patients who had suffered a stroke and applied preventive therapy to patients who had symp-
toms of cerebrovascular insufficiency in the hope of preventing a completed stroke. Members of the
medical profession from the local and nearby communi-
ties were invited to participate and they were
urged to bring in their own patients for diagnosis and treatment. Anticoagulant therapy, arteriography and endarterectomy, EKG telemetry; physical, oc-
tupational and speech therapy; and professional social
work to improve the level of treatment of stroke
patients in the community were all employed. A
brochure describing the program was distributed
throughout the area.

The Clinic was not designed as one of research,
but rather to demonstrate accepted methods of
therapy for persons who had had or were apt to have
cerebrovascular accidents. All diagnostic and treat-
ment procedures were carefully documented. Where
possible, a diagnosis of the underlying cause of the
condition, such as hypertension, atherosclerosis,
anuryms or some other condition, was established.
The study was constantly directed toward preventive
treatment.

The Clinic patients' workup was recorded on
carefully prepared forms adapted for data processing
for retrieval of information. It included a comprehen-
sive and involved case history in which information
was obtained from the hospital records and from
members of the family, as well as from the patient.
The neurological examination was done with equal
experience and that of others we believe it is possible in
well-chosen patients with TIA to prevent a certain
percentage of catastrophic strokes and reduce the
frequency of or eliminate TIA by appropriate surgical
treatment.

We are continuing to attempt to identify those
cases of TIA which will be amenable to surgery. If
there is no serious systemic vascular disease or severe
hypertension which cannot be controlled medically,
cerebral angiography is recommended. If a lesion is
demonstrated at the carotid bifurcation, endarterec-
tomy is performed. The character of the lesion as well
as the degree of stenosis is important in selecting cases
for surgery. An ulcercated plaque only slightly
restricting the lumen may be a potentially dangerous
lesion due to the possibility of emboli arising from
such an area.

If severe stenosis is present distal to the possible
operative site at an inaccessible intracranial location,
or if the carotid lesion is occluded, no surgery is under-
taken on that side but a partial lesion on the other side
may be operated upon. Those patients not selected for
surgery are put on an anticoagulant program if their
TIA's are frequent. Again, on the basis of our ex-
perience, we believe anticoagulant therapy is of value
in such patients and in those with a stroke-in-
evolution.2

Once a stroke has occurred and is stable, the
beneficial results have not been demonstrated and it is
not our practice to use this treatment, for the com-
pliations seem to outweigh any possible benefit.

The following generally accepted criteria are con-
sidered essential if anticoagulants are to be used in the
hospital: an accurate diagnosis of cerebrovascular dis-
ease must be established; a laboratory facility must be
available which produces accurate clotting tests; any
active bleeding is an absolute contraindication (i.e.,
contraindicators may be regarded as any bleeding
history or tendency, renal or hepatic disease or un-
thcontrolled hypertension). For out-of-hospital, long-term

<table>
<thead>
<tr>
<th>TABLE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twenty-Five Patients With TIA Operated on by Endarterectomy in 1962 Through 1964</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Present status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No symptoms</td>
<td>8</td>
</tr>
<tr>
<td>TIA only</td>
<td>10</td>
</tr>
<tr>
<td>Nonfatal stroke</td>
<td>1</td>
</tr>
<tr>
<td>Fatal stroke</td>
<td>1</td>
</tr>
<tr>
<td>Died other causes</td>
<td>5</td>
</tr>
<tr>
<td>Coronary occlusion (3)</td>
<td></td>
</tr>
<tr>
<td>Cancer of lung (1)</td>
<td></td>
</tr>
<tr>
<td>Cancer of kidney with metastasis (1)</td>
<td></td>
</tr>
</tbody>
</table>

Of those who died from other causes, three were free of
TIA, two for six years and one for seven years. The other
two continued to have TIA until they died.

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treatment there must be added the absolute cooperation of the patient. Our experience conforms with that of others — that if these criteria are not rigidly followed the use of anticoagulants is not helpful and may be detrimental.

2. The Stroke Care Unit (SCU)

It had been our original thought that the lack of utilization of the clinic which followed the discontinuance of outside funding was due to this alone and when funds seemed likely to be available through the Oregon Regional Medical Program for Heart Disease, Cancer and Stroke, we would simply strengthen the clinic which had continued on a limited basis and add the educational parts of the program. However, even with this renewed funding July 1, 1968, it was soon evident that the clinic alone would have little or no impact on the care of stroke patients in our hospital and could not in itself justify Grant support. We then turned to efforts of rehabilitating patients with completed stroke, and established on April 9, 1969, a stroke care unit at GSH&MC. It consists of eight beds located in part of the hospital specially renovated for this purpose. A committee of the medical staff was formed and they adopted a statement of policy which was approved by the staff and supported fully by the hospital administration. With the merger of the Rehabilitation Institute of Oregon (RIO) and Good Samaritan Hospital and Medical Center (GSH&MC) an indirect result of this program, Dr. John Kennedy, the physiatrist assigned to the main hospital, is empowered by the Stroke Care Unit Committee to select patients for admission and make final decisions on discharge or other disposition. This has been advisable because of the great demand for these beds. The following are the rules and regulations adopted by the staff and still in force.

PURPOSE

To provide early and comprehensive care, evaluation, and rehabilitation to patients who have suffered a stroke. The unit is not to serve as either an extended-care facility or an intensive care unit.

STAFFING

Adequate nursing personnel will be provided by the hospital nursing service to include RNs, LPNs, aides, and orderlies.

RESTRICTIONS

The unit was not designed to care for comatose stroke patients, and they should not be admitted to the unit.

UNIT CARE

The unit will promote and provide early ambulation and provide training in activities of daily living (ADL), as well as an incorporated physical therapy area in the unit, staffed by members of the Physical Medicine Department.

REHABILITATION THERAPY

The unit will make available to the attending physician for the patient the services of physiotherapy, the services of a social worker, an occupational therapist, and the professional aid of a speech therapist.

FOLLOW-UP CARE

This will require the cooperation of the attending physician, the Stroke Clinic (outpatient), the Visiting Nurse Association, and the services of a social worker. Only through a team effort and utilization of community services can we provide adequate follow-up care for the stroke patient upon discharge from the unit, whether it be to an extended-care facility or the patient’s home.

FAMILY INVOLVEMENT

It may be necessary to involve some responsible family member during the latter part of the patient’s stay in the unit if the patient plans to return home upon discharge, in order that the family member will be capable of providing the necessary assistance at home.

UTILIZATION OF UNIT

If beds become available, patients other than those with stroke may be admitted to the unit with the approval of the Stroke Care Unit Committee, if that patient would benefit by the services provided.

ADMISSION TO THE UNIT

Any stroke patient thought to be a suitable candidate for the unit is eligible for admission by his physician. Patients will not be sent to the unit by the admitting nurse unless the admitting physician specifically requests admission to the Stroke Care Unit. Physicians not on the Medical Staff who refer patients will be asked to select a staff member to care for the patient in the unit. If he has no choice, the patient will be assigned to a member of the staff by the Chairman of the Stroke Care Unit Committee.

PATIENT RESPONSIBILITY

The attending physician shall be responsible for the workup and care of his patients. However, certain standard and routine procedures will be used including early ambulation and training in activities of daily living (ADL) in every case.

CONSULTATION

Independent consultation requests will remain as always the responsibility of the attending physician.

STAFF MEETINGS

Regularly scheduled meetings will be held by the entire stroke team and related personnel for purposes of discussion regarding each patient’s problems and also follow-up on patients discharged from the unit. The attending physician shall always be invited and urged to attend these meetings. Formal minutes of these meetings shall be kept by the secretary and a summary posted in the patient’s chart.
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STROKE CARE UNIT COMMITTEE
A standing Stroke Care Unit Committee shall formulate policy and procedure to direct the unit.

CHARGES
Patients will be charged the regular daily room rates as established by the hospital for the area to which they are assigned. Charges for other services will be made at the regular established rates.

A brochure describing the unit was prepared and is distributed to all patients admitted to the unit and their families.

This unit has had an 81.2% occupancy during the first three years of its existence and it continues to have a waiting list for admission most of the time. One hundred thirty-two physicians have referred patients to the unit, 108 from Portland and 24 from outside the city.

At the end of the first year of its operation, to assess the impact of its establishment in the hospital as a whole, 50 consecutive patients were selected and their functional status was analyzed on admission, and at discharge. Only about one-fourth were actually treated in the Stroke Care Unit. These were then compared with 50 consecutive cases discharged from the hospital immediately before the establishment of the Stroke Care Unit. They were first divided into those with completed strokes and those with transient ischemic attacks and those with stroke in progress on admission. The completed strokes were classified as Grade 2 (some deficit but able to work and perform most activities), Grade 3 (greater deficit and unable to work but able to care for self), and Grade 4 (unable to care for self). As a further control, 50 consecutive patients were similarly studied during the same time periods from Emanuel Hospital, Portland, Oregon, which seemed the most like GSH&MC of all the other Portland hospitals. Table 2 summarizes these results in the 200 patients studied. Of the 50 patients discharged from GSH&MC prior to the establishment of the Stroke Care Unit, 25 had completed stroke, 24 transient ischemic attacks, and one had a progressive stroke on admission. It is our opinion that the higher percentage of TIAs in this group than in any of the other three groups was a reflection of the interest in this condition generated by the presence of a stroke program in GSH&MC since 1962 and that neurology is a very active service at this hospital, attracting diagnostic problems in cerebrovascular disease.

The most obvious result was a significant change in the patient profile at GSH&MC after the establishment of the Stroke Care Unit, while there was no appreciable change in the two periods in the cases admitted to Emanuel Hospital. The percentage of completed strokes at GSH&MC went up from 50% to 74%. Comparable figures for Emanuel were 72% during the pre-unit period and 78% during the post-unit period. Conversely, those admitted with TIAs dropped from 48% to 24% at GSH&MC and from 28% to 22% at Emanuel. At the same time that completed strokes were increasing at GSH&MC the

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. Total number patients</td>
<td>36 (72%)</td>
<td>39 (78%)</td>
<td>25 (50%)</td>
<td>37 (74%)</td>
</tr>
<tr>
<td>2. Improved to Grade 3 or better</td>
<td>18 (50%)</td>
<td>10 (25%)</td>
<td>10 (40%)</td>
<td>17 (46%)</td>
</tr>
<tr>
<td>a. Discharged home</td>
<td>12</td>
<td>6</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>b. To nursing home</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>c. Grade 4 on admission</td>
<td>11</td>
<td>9</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>d. Grade 3 on admission</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>e. Grade 2 on admission</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>f. Average days in hospital</td>
<td>18</td>
<td>21</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>3. Unimproved patients</td>
<td>3</td>
<td>11</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>a. Discharged home</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>b. To nursing home</td>
<td>5</td>
<td>8</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>4. Death due to stroke</td>
<td>10</td>
<td>18</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transient ischemic attacks</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total number patients</td>
<td>14</td>
<td>11</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>2. Patients operated</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Improved</td>
<td>11</td>
<td>9</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>4. Worse</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Progressive strokes**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total number patients</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Patients in Stroke Care Unit.

EH = Emanuel Hospital, GSH = Good Samaritan Hospital.
percentage of completed strokes with Grade 4 strokes rose from 48% to 76%. This again may be compared to 72% in the pre-unit period at Emanuel Hospital and 90% in the post-unit period, where also the strokes appeared to have become more severe. At Emanuel Hospital, out of the 26 (this figure obtained by adding categories 2C through 3B and 4) admitted in the first period with Grade 4 strokes, 11 or 42% were discharged with Grade 3 or better. In the later period, out of the 35 admitted with Grade 4 only ten were discharged with Grade 3 or better, or 28%. At Emanuel there were ten deaths in the first period compared to 18 deaths in the second, which represented an increase of 14% in deaths among Grade 4 strokes admitted. In other words, in a hospital without a stroke program, patients with more severe strokes were being admitted and a higher percent were dying. Conversely fewer had improved to self-help status in the second period when compared to the first. At GSH&MC in the first period, out of 14 patients admitted with Grade 4 strokes, four or 28% were discharged with Grade 3 or better and after the Stroke Care Unit was established out of 28 patients admitted with Grade 4 strokes 12 or 43% were discharged with Grade 3 or better. There were six deaths at GSH&MC in the first period and nine in the post-unit period which represents an 8% reduction of the percentage dying of Grade 4 strokes being admitted. Thus a trend which appeared to be occurring at Emanuel Hospital when the two periods were compared was turned around at GSH&MC. The percentages of patients going home out of total admissions with completed strokes went down in both hospitals though in GSH&MC a larger percentage went home in both groups. This dropped from 33% in the pre-unit period at Emanuel to 26% in the second period at Emanuel and at GSH&MC it dropped from 56% in the first period to 46% in the second. This probably reflects the greater availability of nursing homes and their greater acceptance in the community in the interval. The difference between the two hospitals may be a reflection of some differences in the socioeconomic state of the hospital populations in the two institutions.

Information from the Visiting Nurse Association for the entire city of Portland showed an even greater impact of the Stroke Care Unit. The Visiting Nurse Association kept track of those stroke patients which required the assistance of the nurse coordinator assigned in each of six hospitals to place the patient. We believe this represented a more uniform group in terms of both severity of stroke, being on the whole more severe, and of families needing social service help in making some disposition of the patient. The data in table 3 show that the ability of the nurse coordinator to place a patient in the home at the time of discharge from GSH&MC improved from 13% to 53% during the first eight months after the unit was established. On the other hand, according to the data in table 3, no similar trend could be detected in any of the other five hospitals where the percentage of patients sent home varied from 20 to 0 with an average of 13% during the same eight months. During the next 12 months there was a 3% rise in the patients going home in the other six hospitals compared to a 5% rise at GSH&MC to a level of 58% going home.

The final evaluation of the impact of the Stroke Care Unit, however, depends upon the long-term results and not necessarily their disposition on discharge from the facility. From the foregoing it seemed that it had been quite successful in most respects. However, during the final year of the project a part-time position was established for the specific purpose of making such an evaluation. The methods employed consisted of a study of 30 patients selected randomly from a pool of 74 patients, consisting of 25 chosen from the last 37 patients discharged before the opening of the Stroke Care Unit and the 25 chosen from the first 37 patients discharged from the hospital after the opening of the unit. These two groups of patients constituted, as near as possible, equal groups in terms of diagnostic categories. They were not necessarily treated in the Stroke Care Unit.

Two questionnaires were developed to obtain information from each patient's physician and relatives. The data derived are summarized in table 4. The major difference in the three groups lies in the increasing number going home and the decreasing number deceased. Although both the 25 patients in the group immediately preceding and the 25 immediately following the establishment of the Stroke Care Unit had relatively high mortality rates (64% and 52%, respectively) the other post-SCU group of 25 patients (1969 to 1972) spanning the entire project period has only 8% deceased, with 72% of the patients continuing to reside at home. A close inspection of the data, however, indicates a trade-off relationship between mortality rate and recovery rate and condition. Those patients who survived in the pre-SCU group demonstrated a higher rate of recovery and improved recovery condition, but fewer patients survived. On the other hand, more patients survived in both the post-SCU groups to exhibit a recovery rate, thus increasing the percentage in the slower recovery categories. Also, when one compared the groups on the basis of the cause of death, the pre-SCU patients had a much higher percentage of stroke-related deaths than was the case in two post-SCU groups of patients.

A change in the services provided stroke patients following the opening of the Stroke Care Unit also is pointed out by an analysis of the returned questionnaires. Table 5 shows this striking difference in the relative value of services rated in order of effectiveness. Both families and physicians were identical in their ranking of these separate services. This reflects the success that the program had in involving the families in an active role in the care of stroke victims.
In our judgment this family involvement is the key to success in a stroke rehabilitation program.

The 25 patients chosen at random during the entire period from those treated in the Stroke Care Unit had a built-in bias in their selection for only patients felt to have some rehabilitative potential were admitted to the Stroke Care Unit. Therefore, this group should not be compared strictly to the other groups which were selected from all patients discharged from the hospital with a diagnosis of stroke. It is of interest that even with the severe disabilities that persisted in this group, because of the involvement of the families, almost four out of five were nevertheless still living at home.

### 3. Educational Programs

It is not appropriate in this article to describe in detail the educational activities which this stroke program generated. Suffice it to say that the unit once established served as an effective training mechanism. Seventy nurses from all over Oregon and southwestern Washington spent two weeks in the unit; most of them, on subsequent evaluation of the institutions from which they come, put into practice the material presented.

Members of the stroke team were used in lectures and panel discussions and exhibits were prepared by the program. Although several hundred health care professionals from hospitals throughout Oregon and southwestern Washington participated in the educational programs, the Stroke Care Unit staff did not have the time to fully evaluate the impact of the programs. However, the educational activities were well received and often initiated new programs in the institutions from which the nurses came.

### TABLE 4

Comparison of Status of Patients One to Three Years After Discharge From Hospital

<table>
<thead>
<tr>
<th></th>
<th>Immediate post Stroke Care Unit sample</th>
<th>Immediate post Stroke Care Unit sample</th>
<th>Stroke Care Unit sample 1969 to 1972</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dead</td>
<td>16</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Living at home</td>
<td>5</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>Receiving institutional care</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Twenty-five cases randomly selected in each of three groups.
TABLE 5

Ranking of Effectiveness of Service on the Basis of 1 to 5 by the Patient's Families and Their Physicians

<table>
<thead>
<tr>
<th></th>
<th>Immediate pre-Stroke Care Unit sample</th>
<th>Immediate post-Stroke Care Unit sample</th>
<th>Stroke Care Unit sample 1968 to 1971</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Treatment by hospital Stroke Care personnel</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>b. Patient care by family of stroke patient</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>c. Rehabilitation information provided for families of stroke patients by hospital staff</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>d. Post-hospital treatment and counseling by family physician</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>e. Rehabilitation services of local (non-hospital) social agency</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

In terms of the patient's post-hospital recovery, how would you rank each of the following services as contributing toward that recovery condition:

1. Treatment by hospital Stroke Care personnel
2. Patient care by family of stroke patient
3. Rehabilitation information provided for families of stroke patients by hospital staff
4. Post-hospital treatment and counseling by family physician
5. Rehabilitation services of local (non-hospital) social agency

professionals were informed concerning the team approach to stroke care and the methods employed in the unit, how effective this actually was could not be evaluated.

Two courses of 12 hours' duration spread over six weeks' time for the families of stroke patients were given. Average attendance was about 100 at each session. In the evaluation questionnaires filled out at the conclusion of each course 99% rated the program good to excellent and 81% planned to use the ideas acquired during the program.

Satellite clinics in Bend and Astoria, Oregon, had the active participation of 71 different health professionals at one or more of 12 separate clinics. On subsequent evaluation of some participants it was learned that each of these found to have communicated some aspect of their clinical experience to an average of eight other persons in these communities (table 6). The influence has continued for it is known that greater facilities for care of stroke victims has continued to be available in these communities since the clinics have been discontinued.

Summary

The project utilized current methods of improving the care of patients with cerebrovascular disease in Oregon, thereby producing a diffuseness and the multifaceted approach. If one activity did not appear to be successful it was modified, i.e., the clinic activity was abandoned. Some were modified or not funded by the reviewing body as the project proceeded or, as an example, research activities were deleted. On the whole,

TABLE 6

Summary of Returned Questionnaires From Participants in Satellite Clinics in Bend and Astoria, Oregon

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly positive</th>
<th>Neutral</th>
<th>Strongly negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Did you enjoy participation in The Bend Stroke Clinic?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. To what extent did the clinic meet your expectations as a learning experience?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Would you be interested in participating again?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Do you believe that the Stroke Clinic is an effective way of providing continuing education for health professionals in the area of stroke care?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Do you feel that the clinic patients benefited?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Did you learn anything of value relating to your work in the area of stroke care?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Do you believe that your experience in the Stroke Clinic has improved your relationships with other members of the health care team?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. To what extent is the structure of the Stroke Clinic one that could serve as a model for providing education in other disease areas?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

The following five questions required a yes or no answer:

1. Would you recommend the Stroke Clinic to your colleagues? Yes 40 No 0
2. With how many individuals have you had communication that involved information acquired at the clinic? (Total for all participants) 203
3. Would the experience have been more beneficial if you had been provided the history and problem of each patient prior to the clinic experience? Yes 32 No 8
4. Did you feel that there was sufficient opportunity to ask questions at each clinic station? Yes 34 No 5
5. Was the schedule for the clinic activities convenient? Yes 38 No 1

Circled numbers indicate average rating of those responding.

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the major parts were successful and appear to have in fact improved the care of patients with cerebrovascular disease in Oregon. The Stroke Care Unit continues to function and is the home base for a new project approved and funded under the directorship of Dr. John Kennedy.

The data on the disposition of cases indicated a great difference in the percentage of patients discharged home before and after the establishment of the Stroke Program (table 3). These figures were collected soon after discharge. Table 4 shows this same difference but to a lesser degree. The trend is the same but the two groups tend to become more similar with the passage of time. One must recall that we are dealing with patients who have a progressive disease and the treatment offered is not curative. Those who survived tended evidently to assume the same state. It also should be emphasized that a factor of selection was operative in the very fine showing of the SCU sample 1969 to 1972. In the first two groups all patients discharged from the hospital with the help of the nurse coordinator were included. In the last column only those cases actually admitted to the Stroke Care Unit were chosen. Some hospital patients were deemed unsuitable for the extensive rehabilitation effort by either the staff or the referring physician.

While this project was supported by a state agency and a statewide influence was the goal, the impact has been greatest at GSH&MC. In our judgment, it was chiefly responsible for the merger of the Rehabilitation Institute of Oregon with the parent institution. This is a tangible measure of the increased awareness of rehabilitation in general generated by the program on the staff and the Board of Trustees of GSH&MC. More than 30% of all patients at GSH&MC are from out of Portland so that its influence was to some degree statewide. Statewide influence was promoted by the nurse course and, the satellite clinics. It is hoped that during the coming years of Dr. Kennedy's project even more statewide influence will be felt as a result of this project.

References


Failures and Successes in a Stroke Program
ROBERT S. DOW, H. LENOX DICK and FRED A. CROWELL

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