The National Institutes of Health and the Neurological Surgeon*

PAUL C. BUCY, M.D.

Department of Surgery, Northwestern University Medical School, Chicago, Illinois

I have been asked to speak to you about the relationship of the National Institutes of Health (NIH) to neurological surgery. Although I have had several limited associations with the National Institute of Neurological Diseases and Blindness (NINDB) of NIH in the past few years, what I do not know about NIH is far greater than what I do. I also must emphasize that what I have to say represents only my own personal opinion. I do not and cannot represent NIH and I do not speak to you in any official capacity or with any authority.

The National Institutes of Health were established to advance medical research, to promote the study of disease and its treatment, and to improve the health of the American people. The National Institute of Neurological Diseases and Blindness also has had one rather unique purpose: to advance the training of neurologists. This grew out of the fact that a serious lack of trained neurologists had developed in this country. This deficiency was so severe as to threaten the adequate teaching of neurology in our medical schools and hospitals both at the undergraduate and graduate levels.

NIH always has made research grants to neurological surgeons on the same basis as to those in all other medical disciplines. There have been many such research grants and they still continue. But NINDB never has had any special program related to neurological surgery as a specialty. In fact, in the past, neurological surgeons as a group have indicated that they did not wish to have the U. S. Public Health Service take any special interest in their field. This attitude has changed over the past several years as the program of NIH has expanded and as the heads of more and more neurosurgical services have come to NIH for support. The real shift in opinion in this regard was dramatized about a year and a half ago when the Society of Neurological Surgeons appointed a committee (Dr. Bronson S. Ray, Dr. Henry G. Schwartz, and Dr. Paul C. Bucy, Chairman) to represent them in dealing with the NIH and other Federal agencies. Since then I have been appointed to the Advisory Council of NINDB. However, I should hasten to point out to you that on this Council, I, like the other professional members, represent the medical profession and not any specialty. Each of us may bring some special knowledge and training to the Council, but our task is to act as informed advisors to the Surgeon-General and not as special pleaders for any field of medicine.

Again I should like to emphasize that NIH is interested in research, in improving the understanding and treatment of disease. It is not interested directly in medical education at either the undergraduate or graduate levels although it has supported residency training for teaching and research in many fields, and has recently offered limited support for undergraduate neurological teaching in medical schools where such teaching is deficient. In this same connection, perhaps, it should be noted that there is a growing minority who are anxious to see the Federal Government support all residency training in all branches of medicine.

In what way is it or can it be interested in and helpful in the field of neurological surgery? It appears to me that there are two ways in which NIH can and should be actively supporting neurological surgery. There are few neurological surgeons who would con-

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tend that there is any dearth of neurosur-
gueons in this country (although I understand
that a committee of the American College of
Surgeons has reached such a conclusion). Ac-
Accordingly, I know of no one who would
tend that NIH should support actively a
program of training more neurosurgeons, as
they have done with neurologists. On the
other hand, I think everyone would agree
that there is a shortage of outstanding
teachers and investigators in neurological
surgey. Here support is needed. Such men
should have the best possible training in
clinical neurosurgery. They must be able
diagnostic neurologists. They must be skilled
surgeons. They must be well trained in post-
operative care and rehabilitation. In short,
they first must be outstanding neurological
surgeons. They cannot be great teachers nor
can they conduct or supervise outstanding
neurosurgical research without this ability.
This fact has led to some confusion at NIH,
among its committees and among those who
seek NINDB support for training grants.
Everyone agrees that NIH should not be en-
gaged in the training of neurological surgeons
for the practice of that field of medicine but
we cannot hope to produce men who will
prosecute neurosurgical research successfully
unless we train them as neurological surgeons
as well as in the basic sciences. The difficulty
here is not with this fundamental concept but
with its application. The problem is how to
select those men to support who ultimately
will go on to become outstanding teachers
and investigators and who will devote them-
selves to an academic career. This is the sub-
ject of serious consideration by NINDB and
its committees and Advisory Council but is
not one that we can profitably pursue further
here and at this time.

To return to the subject of research. How
can NIH stimulate investigation in neuro-
logical surgery? What is there for NIH to
support in this field? The possibilities are al-
most limitless. The range of investigation
that is needed covers practically every as-
pect of the basic neurological sciences and the
clinical disciplines. Obviously if NIH knew
how the problems were to be solved there
would soon be no problems. It must be de-
pendent upon the investigators to provide
the suggestions. It must be willing to support
them in chemistry, in cytology, in electron
microscopy, in physiology, in anatomy; in
short, wherever an inquiring mind and a
vivid imagination suggest, on reasonable
ground, that there is the possibility of a solu-
tion. The problems in neurological surgery
are not limited to the basic sciences. They
are human problems. They will be recognized
and understood best by alert clinicians, not
by scientists isolated in their laboratories.
Although much information can be gained
by studying laboratory animals, we cannot
be sure that such information is valid for
man until its applicability to man is tested
thoroughly. And, in general, human investi-
gation can be done adequately only by or in
collaboration with the clinician. There are
many neurological problems in which the
knowledge and technical skills necessary to
such an investigation are possessed only by
the neurosurgeon.

There are many problems in neurological
surgery crying out for solution.

Some of the most outstanding of these are
concerned with brain tumors. What is their
etiology? Are they the result of hormonal or
chemical disturbances within the body? Are
they related to some unrecognized infection?
How are such neoplasms treated best? What
are the characteristics of their growth?

Why are some infants born with a menin-
gomyelocele or some other congenital anom-
aly and how can we do something success-
fully about these defects?

Why does hydrocephalus develop in some
infants? What can we do to prevent its de-
velopment and how can we treat the condi-
tion more adequately?

Injury to the spinal cord all too frequently
leaves the victim hopelessly paralyzed. Not
too long ago such patients did not live long.
Now we have learned how to save their lives
but not their legs. Once we were taught that
regeneration of the nerve fibers within the
central nervous system cannot take place.
Evidence is developing from various sources
that indicates that on occasion this is not