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Bulletin of the
**University of Minnesota Hospitals
and
Minnesota Medical Foundation**



**Selection of
Medical Students**

BULLETIN OF THE
UNIVERSITY OF MINNESOTA HOSPITALS
and
MINNESOTA MEDICAL FOUNDATION

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I. PROBLEMS IN THE SELECTION OF
MEDICAL STUDENTS

C. Knight Aldrich, M.D.
Donald W. Hastings, M.D.
William F. Maloney, M.D.

Introduction: Dr. Maloney

Speaking as a representative of the Dean's office, it may be appropriate for me to say a few words at the outset telling you why there is such a lively interest in the selection of medical students. Our Medical School has the understandable goal of providing the state it serves with the highest type of physician. I think this Medical School has an enviable record of furnishing Minnesota with well trained, well integrated doctors. However, there are enough instances where graduates have developed serious difficulties of one type or another so that one cannot say that the problem of selection is solved and can be forgotten. We also have been disturbed in recent years by the number of students (small numbers, it is true) who have been found to be overtly psychotic sometime during the four years. We know informally that a number of students each year require and obtain psychiatric treatment either from University or private sources.

Each year we lose at least five percent of the freshman class because of low scholarship. We have the impression that most of these young people, but not all by any means, were misjudged as to intellectual ability by the Admissions Committee. Perhaps just as many were not really motivated for medicine. This fall, for example, six members of the freshman class voluntarily dropped out of medical school during the first quarter. The reasons why these people dropped out vary, but I believe we would agree that none of them really was motivated to become a physician. Certainly to some extent, all of these failures represent mistakes in selection - we would not knowingly accept a candidate (and hence exclude another applicant) if we had any idea that he were going to drop out of school voluntarily. Medical education is expensive; it costs the state about

\$2500 per student per year, or \$10,000 for each student's education, and there is no return on the investment in a student who fails to graduate.

Another reason for reviewing the accuracy of the selection procedure lies in the fact that the number of people applying for medical school has been declining at both state and national levels over the course of the past five or six years. How much more reduction will take place is not predictable; but even if the situation gets no worse, it is imperative that we make every effort to choose the best people out of the limited group of applicants.

Again, to keep our perspective clear, I would like to say that we are proud of the record of our Medical School down through the years of its existence. An interest in the process of selecting our students is one of the measures of our pride. So much for introduction. Doctor Aldrich will now approach the specific problem of selection.

Basic Considerations: Drs. Aldrich and Hastings

The selection of people for a specific task in life is an endeavor about which there is little factual data. It is a subject that is of major interest to the armed services, to industry, to government, and to universities as well as to the medical colleges. Perhaps the most intensive research that has been done to date has been by the U. S. Air Force in the aircrew selection program. Unfortunately, this extensive program was not at a stage of development early enough in World War II to permit adequate validation of the various test devices against actual performance in combat. It is obvious that the purpose of a military flier is to fly effectively in combat. One can validate the tests against the fact of graduation from flight training school, but even a measure of the ability to fly an aircraft did not reveal as much as one would expect about the ability of the pilot to perform well in the combat setting. There is an evident moral to this story as it applies to the Medical School. The ability of a

person to graduate from medical school, or even to do a good history and physical, does not, in so far as is shown, reveal much about his ability to function effectively and safely as a physician.

So, while it is understandable that the medical schools are immediately most interested in the selection of candidates who can successfully graduate without getting into difficulty of one sort or another during the four year sojourn, the larger and more important problem still remains: What is the quality of these graduates when they engage in combat, i.e., engage in the practice of medicine? This statement is not meant to imply any criticism of medical school graduates. What is intended is to point out that this is an area in which insufficient research has been undertaken, and hence we have opinions and intuitive hunches but little factual data. Opinions and hunches tell us that by and large physicians do a pretty good job, but we must recognize that much as we wish to believe this, it is not today backed up by critical fact. It is axiomatic that even to start on the development of selection tools and devices, we must have clearly in mind, and subject to some sort of measurement, the goals for which we desire to select. The goal may be the selection of a man to fly an F-94 in combat, or it may be the selection of a potential physician. Here we immediately encounter, in this effort to select with clearly stated goals and objectives in mind, one of the very real problems for the medical school. We do not have any way of measuring physician effectiveness in practice.

But even if we did, we would have the additional problem of deciding what specific types of physician experience and effectiveness we wished to measure. By plan, the four years of medical school should give a student the opportunity to obtain a general basic orientation to medicine which is non-specialized and non-specific. We are not, by plan, attempting to select against the requirements for the neuro-surgeon, the research bacteriologist, the cardiologist, the future dean, and so on in a very respectable

list of specialized jobs in the general framework of medicine. These specialized areas may represent vastly different and possibly mutually exclusive requirements when one tries to define goals and objectives for selection. So, in attempting to define goals for all physicians, we would be somewhat limited to the consideration of characteristics which all physicians should possess. How many of such characteristics all doctors should have, I will not attempt to list, but I am sure the group assembled here today could easily spend the remainder of this hour in listing them. Whether there would be general agreement among us, I am not so sure, or whether anyone could qualify by the time we finished. In any event, I simply wish to point out to you that the medical schools, by virtue of their basic plan of operation, are faced with an unusually complicated problem in the selection field. Compared to it, the selection of F-94 pilots, complicated as it is, would seem to be relatively simple.

The three major areas of concern in selection are (1) intellectual achievement, (2) physical health, and (3) emotional qualifications.

1. Intellectual Standards - The medical school has several requirements in this area. First is the presentation of a minimum of 135 credits of college work which must be accomplished with a minimum honor point ratio. This ratio is calculated separately for total required science, social science, and elective courses and is subjected to a correction factor to equalize minor differences in college standards. This is the most important rule-of-thumb we use, and it is a practical one even though it is difficult to measure exactly. Secondly, the potential medical student is required to take a battery of paper and pencil tests required by all class A schools. These tests are in the experimental stage and are not as yet validated although local study of them as gauged against academic achievement in this Medical School seems to show that they have little value.

2. Physical Standards - In the selection of medical students no particular physical criteria have evolved. Candi-

dates must be in "good health," but this not defined and to define what constitutes good enough health would require careful thought and study. What should be the attitude toward the candidate with a hearing defect, a marked visual defect, with partial or complete color blindness, with neurological disorder, and so on? At the present time, the Admissions Committee attempts to weigh each case on its own merits and perhaps this is about as far as one can go. In practice, the Admissions Committee would rarely turn down a candidate on physical grounds unless there were reason to suspect he had an active form of a communicable disease.

There are no criteria with respect to sex, race, or creed and there are few with respect to age. Most of the candidates are young people anyhow. It is possible that further study would suggest differential criteria for acceptance of women, or of people above or below the usual age bracket.

3. Emotional Standards - About the only current method of evaluating this aspect lies in the letters of reference obtained on each candidate. Letters of reference seldom present any unfavorable data, but those that do give invaluable information. Routine personal interviews with candidates are no longer conducted but seem to have been of little help in any case except in detecting gross abnormalities. There is some evidence that the unstructured interview, by other than trained interviewers, may even be misleading in some cases.

Before leaving this general introductory theme, there is one other point that must always be kept in mind in the hopes one has about a selection program. Human beings are dynamic and not static organisms. They change in many ways and in response to an infinite number of variable factors and these variables are unpredictable. Hence it is not realistic to expect any selection method that in essence gives a crosssection view of an individual in 1954 to be a completely accurate predictor of this person in 1964. To illustrate: in 1954 a candidate has normal hearing and may be deaf in 1964. Or a candidate in 1954 has an excellent

mind but as the result of severe head trauma in an auto accident in 1964 is grossly incompetent. Or an adequate student strikes the unpredictable variable of girl trouble and fails the year. The recognition that human beings are dynamic organisms who change in response to an infinite number of unpredictable variables lends a sobering attitude toward any selection devices which operate in cross section, i.e., attempt to predict future behavior by a study of present conditions.

Pilot Study:

Our initial interest in surveying the selection of medical students was aroused by the fact that individual members of the Division of Psychiatry were being called upon to treat a sizeable number of students. While psychiatric treatment per se certainly does not constitute any sort of absolute contra-indication to a career in medicine, it was evident frequently that if the Admissions Committee had recognized the extent and pathological nature of the emotional history and make-up of the person, he would never have been admitted.

As a small check on the utilization of the data that is or was available to the Admissions Committee, Miss Ruth Smith in Dr. Maloney's office kindly made available to Dr. Hastings and me 100 records selected as follows.

1) 50 graduates who were elected to Alpha Omega Alpha, honorary medical fraternity.

2) 50 students who were admitted to the medical school but who were not successful in completing the four year course. (As it turned out, there were 53 successful and 46 unsuccessful students.)

3) All students had completed or left the medical school prior to 1945, i.e., before the present authors were on the University faculty and hence the amount of personal knowledge of an individual would be kept to a minimum.

Miss Smith then went through these

records and removed all information from the folders except that which was available to the Admissions Committee originally.

With the 99 records so selected, we then independently studied each folder (much as a member of the Admissions Committee might do) and assigned each student to one of the following categories:

- Group A: definite prediction of success
- Group B: tentative prediction of success
- Group C: tentative prediction of failure to complete medical school
- Group D: definite prediction of failure to complete medical school.

In each case we gave reasons for our prediction. After we had completed these studies, we compared our predictions to actual performance (Chart 1) and to each other, and actual performance to premedical honor point ratio (Chart 2).

In the charts, each of the 53 successful students is represented by an X in the appropriate column above the double line, and each unsuccessful student by an X in the appropriate column below the double line. Of the 46 unsuccessful students, 31 were dropped because of low scholarship (in 9 of these cases there was evidence of contributing emotional disturbance); 9 students, indicated on the charts by an X-, left because of emotional disorders; of these, five were diagnosed schizophrenia, two depression, and two less severe, apparently neurotic illnesses. There were two suicides.

Three students who dropped out for reasons of physical illness and three who transferred to other schools in good standing are separately considered under U_x in the charts.

We observe from this data that:

a) When we were in general agreement and when one or both of us was decisive (AA and AB, Chart 1), we predicted 26 out of 29 successful and (DD and CD,

Chart 1) 14 out of 16 unsuccessful students. This gives us a total of 39 of 44 accurate predictions; 12 per cent of our predictions were inaccurate.

b) When criteria of premedical education achievement alone are used (Chart 2), 29 out of 36 of those with an honor point ratio above 2.0 were successful and 16 out of 20 of those with an honor point ratio below 1.5 were unsuccessful in completing medical school. If this criterion alone were to be used for prediction, 20 per cent of predictions would be inaccurate.

c) If we force our predictions by considering our indecisive judgments as decisive, we predict 31 of 37 successful (AA, AB and BB, Chart 1) and 18 of 24 unsuccessful (DD, CD, CC, Chart 1).

d) Individually, one of us could predict success as well as both of us together; the other could predict lack of success as well as both of us together, but our combined over-all judgment was superior to either individual judgment.

When we review our predictive errors, we find that we both predicted failure for six successful students and we both predicted success for six unsuccessful students. In the 32 individuals in whom we differed, one of us tended to grade too low, the other tended to grade too high.

We then re-examined all subjects on the basis of which at least one of us had made either a tentative or a definite inaccurate prediction. We attempted to discover the reasons for our errors, with the following results:

a) In six cases we saw no reason why we would not repeat the same judgments with the same material available.

b) In ten cases at least one of us overlooked available data.

c) In six cases at least one of us overweighted subjective impressions.

d) In six cases one of us over-

weighted test scores, but in six other cases judgment based on test scores proved correct.

3) In two cases both of us underweighted evidence of personality disturbance. In four cases at least one of us inaccurately predicted failure because of personality factors in students who were successful. (Further follow-up of these individuals would be interesting to determine whether their professional success was equivalent to their academic success.)

In summary, our experiment in second-guessing earlier admissions committees indicates that:

a) Although with the material available our predictions turned out slightly better than predictions based on honor point ratio alone, we still made many erroneous decisions.

b) Many of the predictions were tentative because of insufficient material available, particularly in relation to personality factors.

c) We often overlooked or misinterpreted pertinent data even when it was available.

d) Our subjective impressions were not reliable guides.

e) The tests available at that time were as often misleading as they were helpful.

Our experience has been a sobering one in that two psychiatrists, presumably better qualified than the average physician by training and experience to evaluate evidence of personality disturbance and intellectual capacity, have made so many errors. We have every reason to believe that under actual committee conditions, with greater pressure, less time and more records to scrutinize, we would have made more errors.

From this experience, several possible alterations in admissions procedures emerge. One is to employ a group of admission specialists and leave the job to

them. This is of doubtful advisability for many reasons, even if it were feasible. Another possibility is to confront the Admissions Committee with a great deal more undigested test and interview material. Although this might make it possible to select more accurately, our observations force us to the unhappy conclusion that when more statistics are available, fewer are used. We believe that the committee method of selection of medical students should be continued but the process simplified by clarification of the material presented to committee members, and suggest the following modifications and additions:

1. Premedical Grades. In material summarized for the committee, one number signifying honor point ratio for each candidate should replace several computed in different ways.

2. Psychological Tests. One number, representing a standard test or tests of the intellectual capacity of each candidate should replace several scores of various tests of as yet undemonstrated validity.

3. Personality. Personality information should be amplified perhaps by adding standardized personality tests, but with expression of their results to the committee either in the form of a single numerical grade or a single-word judgment.

4. Letters of Recommendation. All letters of recommendation should be carefully read by at least two individuals, with particular attention to unflattering statements, before the Admissions Committee meeting, and their independent impressions recorded briefly and succinctly on the summary sheet.

5. Subjective Judgments. When acceptance or rejection of an exceptional candidate is recommended by the committee in the face of objective data which would indicate an opposite course, the reasons for the recommendation should be recorded in writing and the decision reviewed.

Chart 1: COMBINED JUDGMENTS

	A-A	A-B	B-B	A-C	A-D	B-C	B-D	C-C	C-D	D-D
S*	X									
	X									
	X									
	X									
	X	X								
	X	X								
	X	X								
	X	X								
	X	X								
	X	X	X	X			X			
	X	X	X	X			X		X	
	X	X	X	X			X	X	X	
	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X
U*		X	X	X		X	X	X	X	X
		X-	X			X	X	X	X	X
		X-	X-			X	X	X	X	X
						X-	X	X	X	X-
							X		X	
							X		X	
							X		X	
							X		X	
							X-		X-	
							X-		X-	
Ux*	X			X		X		X		X
				X						
	A-A	A-B	B-B	A-C	A-D	B-C	B-D	C-C	C-D	D-D

* S - successful students
 U - unsuccessful students
 Ux - students with physical illness or transfer in good standing

Chart 2: HONOR POINT RATIO

	.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	None Available
S*									X	X			
								X	X	X			
				X	X	X	X	X	X	X			
				X	X	X	X	X	X	X			
			X	X	X	X	X	X	X	X			
		X	X	X	X	X	X	X	X	X	X	X	X
U*	X	X	X	X	X	X-	X	X					X
	X	X	X	X	X	X-	X	X-					X
		X	X	X	X		X-	X-					
		X	X	X	X-								
		X	X	X	X-								
		X-	X		X-								
Ux*				X	X	X					X		
				X	X								

* S - successful students
 U - unsuccessful students
 Ux - students with physical illness or transfer in good standing

Concluding Remarks: Dr. Maloney

On the basis of extensive thought and study and with aid from studies such as this presented today, the Admissions Committee has this year discontinued some tests and procedures and added the following information obtained about applicants to the Medical School: the Senior Miller Analogies Test (as one measure of intelligence), the Minnesota Multiphasic

Personality Inventory (as an aid in the evaluation of emotional stability and mental health), the Strong Interest Test (to help indicate interest), and an independent appraisal by the applicant's physician or Health Service of mental and physical health. The sensible integration of these indicators into the selection procedure will, it is hoped, result in better medical students.

II. MEDICAL SCHOOL NEWS

Coming Events

- January 25-30 Continuation Course in Neurology for General Physicians and Specialists
- January 27 J. B. Johnston Lecture; "Recent Advances in the Morphology and Significance of the Cerebral Cortex;" Dr. Andrew T. Rasmussen, Professor Emeritus of Anatomy, University of Minnesota; Museum of Natural History Auditorium; 8:00 p.m.
- February 1-5 Continuation Course in Child Psychiatry for General Physicians and Specialists
- February 10-11 Continuation Course in Cancer Detection for General Physicians
- February 11 Dedication of the Elias P. Lyon Laboratories
- February 15-17 Continuation Course in Fundamental Advances in Internal Medicine for Internists
- February 16 Journal-Lancet Lecture; "The Biosynthesis of Heme;" Dr. David Shemin, Columbia University, New York City; Owe Amphitheater; 8:00 p.m.
- February 18-20 Conference on Sterility and Associated Problems of Reproduction for Physicians
- March 5-6 Parenteral Alimentation Symposium (Sponsored by Hennepin County Medical Society); Radisson Hotel, Minneapolis

* * *

Lyon Dedication Nears

The dedication of the Elias P. Lyon Laboratories will be held on Thursday, February 11. The new building, which is named in honor of the late Elias Potter Lyon, Professor of Physiology and Dean of the Medical School, 1913-1936, is dedicated to the advancement of the fundamental knowledge in medical sciences. The dedication ceremonies include an open house from 3:00 to 5:30 p.m. and a banquet which will be held at 6:30 p.m. in the Main Ballroom of Coffman Memorial Union. Speakers will include President J. L. Morrill, Dr. C. J. Van Slyke of the U. S. Public Health Service, Mr. Mefford Runyon of the American Cancer Society, and Dean H. S. Diehl.

We wish to take this opportunity of extending a cordial invitation to all members of the Minnesota Medical Foundation to attend the dedication program.

* * *

Dr. Hambridge Joins Psychiatry Staff

On December 28, Dr. Gove Hambridge, Jr. joined the Medical School faculty as Assistant Professor in the Department of Psychiatry and Neurology. Dr. Hambridge, a graduate of Yale Medical School, has most recently been associated with the U. S. Public Health Service in Bethesda, Maryland. It is a real pleasure to welcome Dr. Hambridge to our faculty.

* * *

Faculty News

Dr. Ancel Keys, Professor and Director, Laboratory of Physiological Hygiene, has left for Naples, Italy, where he will continue the work on the epidemiology of heart disease which was started during his tenure as a Fulbright Fellow in 1951-52. He will be accompanied by Mr. Ernest Klepetar, Actuary, and Dr. Joseph Doyle, Director

of the Cardiovascular Health Center at Albany Medical College, Albany, New York. Dr. Bengt Swahn of Lund, Sweden, will join the party to study the characteristics of serum lipoproteins by paper electrophoresis, and Dr. Paul Pudley White of the Harvard Medical School will spend a month examining certain clinical aspects of the research.

Dr. Lawrence R. Poies, Professor and Head, Department of Ophthalmology and Otolaryngology, and Director, Division of Otolaryngology, and Dr. Jerome A Hilger, Clinical Associate Professor, attended the Twenty-third Annual Mid-Winter Clinical Convention of the Research Study Club of Los Angeles where both presented scientific papers.

Dr. W. G. Kubicek, Professor, Department of Physical Medicine and Rehabilitation, took part in the recent Conference on Respiratory Physiology and Related Medical Care Problems in Poliomyelitis which was held at Boca Raton, Florida.

Dr. Irvine McQuarrie, Professor and Head, Department of Pediatrics, was one of ten American physicians receiving the 1954 Modern Medicine Award for Distinguished Achievement. Dr. McQuarrie was honored for his contributions to the understanding of metabolic disturbances in children. The award winners were named by Dr. Walter C. Alvarez, Editor-in-Chief of Modern Medicine.

Dr. F. H. Van Bergen, Assistant Professor, Division of Anesthesiology, attended the first meeting of the Association of University Anesthetists at the Massachusetts General Hospital in Boston on January 9. Dr. Van Bergen is a charter member of the club and was named "Councilman-at-Large."

Dr. Robert B. Howard, Director, Department of Continuation Medical Education, spoke on "The Diagnosis and Management of the Anemias" at the monthly meeting of the Hennepin County Academy of General Practice on Monday, January 16.

* * *

Publications of the Medical School Faculty

Farnum, C. P., Huseby, R. A., and Vermund, H.: A Time Study of the Incorporation of Radiophosphorus into the Nucleic Acids and Other Compounds of a Transplanted Mouse Mammary Carcinoma. *Cancer Res.*, 13: 880, 1953.

Foyden, E. A.: Lateral Views of the Segmental Bronchi and Related Pulmonary Vessels in an Injected Preparation of the Lungs. *Radiol.*, 61: 183, 1953.

Foyden, E. A.: Observations on the Anatomy and Development of the Lungs. *J. Lanc.*, 73: 509, 1953.

Creevy, C. D.: Adrenalectomy in Prostatic Cancer and Malignant Hypertension. *Canadian Med. Asso. J.*, 69: 581, 1953.

Frick, P. G.: Hemolytic Transfusion Reaction Caused by Anti-c Antibody. *Am. J. Med. Sciences*, 225: 630, 1953.

Larsell, Olof: Andrew Theodore Rasmussen. *J. Comp. Neur.*, 99: 8, 1953.

Lowe, C. U. and Williams, W. L: Effect of Cortisone Administration on Intracellular Composition of Rat Liver. *Proc Soc. Exp. Biol. Med.*, 84: 70, 1953.

The following article appeared in The American Journal of Psychiatry, Volume 109, Page 936, June, 1953. It was felt that it would be of interest to readers of this Bulletin. We are indebted to the Editor of The American Journal of Psychiatry for permission to reprint it.

BREVITY

Alan Gregg, M.D.

Brevity when overdone defeats the primary purposes of communication: truthfulness and comprehensibility. Witness the misleading newspaper headline or the penny-wise and enigmatic telegram. Nonetheless, brevity like economy has considerable merits. To be brief as well as clear does not reduce what you have to say---it gives you the chance to say more in the same space. Your readers want substance for the time they give you. In short, jewels. Multum in parvo at first attracts and then satisfies. So some devices for saying briefly but exactly what you mean may deserve attention.

Avoid long words whenever short words will serve as well or better. The word end saves 8 letters over the word termination. Has has a like advantage over possesses. Anticipate means to take action in expectation of something: expect therefore saves 4 letters and says what most people think they mean when they magniloquently write anticipate.

Write short sentences whenever you can. If you arrange your thoughts to follow each other logically then your sentences, though short, will hang together clearly.

Though the poet, the essayist, or the novelist achieves his desired effect by using words having just the connotations he wishes, the scientist uses words that denote precisely what he means. So, among other things, look out for any part of the verb to be. To be has six different connotations. That should put you on guard. Don't write "the over-all nature of the movement of vehicles in the city of Detroit was found to be a source of annoyance to the police." Put a transitive verb in place of that word was and you will find yourself using 6 words, "traffic in Detroit annoyed the police," thus saving 18 words with which to express some additional fact or idea. I have found that merely getting rid of any form of the verb to be in favor of a transitive verb usually saves about 16% of wordage.

Since the verb to be appears in the passive voice of all verbs, e.g., "it was observed that," I venture to say that the excessive impersonality of authors who use the passive continuously succeeds merely in forcing their readers' attention to die a lingering death. Suppose A.B.C. and X.Y.Z. write a paper together. Why the agonized modesty of, "It was observed by one of us (X.Y.Z.) that" when "X.Y.Z. noted that" says the same thing in one-third of the space? Often the sentences beginning with it and followed by the passive verb, e.g., "It was felt that" or "It was recognized that," omit any mention of who did the feeling or the recognizing and thereby add an irritatingly irresponsible vagueness to stuff-shirted verbiage.

Don't make the neurotic assumption that since you can't write easily and well, other people must just have a knack. Nor divorce Sweat to marry Envy. Professional writers find writing hard too, but they have no airy excuses such as "after all I'm not a writer---I'm a research man": I would suppose the erasers of their pencils nearly always wear out long before the leads. Indeed, most success in writing a clear, truthful, and concise account of anything depends more on your ability to rewrite, condense, and tenaciously edit your own stuff---from the first through the fourth draft---than on what appears in first writing. A first draft that takes an hour to

BREVITY (Cont.)

Write may well take 4 to 12 hours of revision---preferably at well-spaced intervals.

Nouns and verbs always provide the core of language: choose them carefully. Every time you use nouns in the plural, e.g., "solutions," ask yourself, "Do I mean all solutions? Or many? Or some? Or few? Or, as a matter of fact, just exactly how many?" Beware of abstract and collective nouns. They frequently mean different things to different readers: they denote no one thing because they have too many connotations. They harbor vagueness. They encourage evasiveness. They shelter irresponsibility. You can make effective use of one of the following adverbs before the verbs in scientific papers: always, often, sometimes, or never. Such practice will sometimes improve your logic and reasoning, even before you reach the final draft.

To achieve real excellence you will revise at least once and exclusively to eliminate uselessly repetitious words and phrases, or even sentences. "The vain repetitions that the heathen use" may occur near or far from the one necessary word or phrase. This common fault often shows itself only if you will read aloud once or twice. Useless repetitions occur almost inevitably unless you make a preliminary outline of the right sequence in which to present your statements even before starting the first draft.

Above all else remember that easy writing usually makes damned hard reading.

P.S. The above contains 800 words more or less. Six hours of work---about one hour of thinking over, putting down and arranging rough notes, an hour for the first draft, and 4 hours at rewriting and revision; rather easy writing and therefore I fear rather hard reading. By no means complete: only some suggestions that work well if put to work. And the verb to be used verbally only once---viz., "To be brief...."

Alan Gregg, M. D.

III.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL
WEEKLY CALENDAR OF EVENTS

Physicians Welcome

January 25 - 30, 1954

Monday, January 25

Medical School and University Hospitals

- 9:00 - 9:50 Roentgenology-Medicine Conference, L. G. Rigler, C. J. Watson and Staff; Todd Amphitheater, U. H.
- 9:00 - 10:50 Obstetrics and Gynecology Conference; J. L. McKelvey and Staff; W-612, U. H.
- 10:00 - 12:00 Neurology Rounds; A. B. Baker and Staff; Station 50, U. H.
- 11:30 - Tumor Conference; Doctors Hitchcock, Moore, and Stenstrom; Todd Amphitheater, U. H.
- 11:30 - 12:30 Physical Medicine Seminar; Heart Hospital Auditorium.
- 12:15 - Obstetrics and Gynecology Journal Club; Staff Dining Room, U. H.
- 12:30 - 1:30 Physiology Seminar; The Physiological Disturbances Produced by Endotoxin; Lewis Thomas; 214 Millard Hall.
- 1:30 - 2:30 Pediatric-Neurological Rounds; R. Jensen, A. B. Baker and Staff; U. H.
- 1:30 - 3:30 Dermatology Hospital Rounds; H. E. Michelson and Staff; Dermatology Histopathology Room, M-434, U. H.
- 4:30 - Infectious Disease Rounds; Sta. 43, U. H.
- 4:30 - Public Health Seminar; The Relation of Animal Diseases and Public Health; James Steele; 15 Owre Hall.
- 5:00 - 6:00 Physiology-Surgery Conference; Todd Amphitheater, U. H.
- 5:00 - 6:00 Urology-Roentgenology Conference; C. D. Creevy, O. J. Baggenstoss, and Staff; Eustis Amphitheater.

Ancker Hospital

- 8:30 - 10:00 Tuberculosis and Chest Conference; Auditorium.
- 2:00 - 3:00 Surgery Journal Club; Classroom.

Minneapolis General Hospital

- 9:30 - Pediatric Rounds; Eldon Berglund; Newborn Nursery, Station C.
- 10:30 - 12:00 Medicine Rounds; Thomas Lowry; Sta. F.
- 11:00 - Orthopedic and Fracture Rounds; Drs. John Moe and Arthur Zierold; Sta. A.
- 11:00 - Pediatric Rounds; Erling Platou; Station K.
- 12:30 - Surgery Grand Rounds; Dr. Zierold; Sta. E.
- 1:30 - 2:30 Tuberculosis Conference; J. A. Myers; Sta. M.
- 2:00 - Pediatric Rounds; Stations I and J.

Veterans Administration Hospital

- 1:30 - Cardiac Conference; Drs. Berman, Weisbart, and Smith, Rounds Immediately following conference.

Tuesday, January 26

Medical School and University Hospitals

- 9:00 - 9:50 Roentgenology-Pediatric Conference; L. G. Rigler, I. McQuarrie and Staff; Eustis Amphitheater, U. H.
- 12:30 - 1:30 Physiology 114C -- Respiration; E. B. Brown; 129 Millard Hall.
- 12:30 - Bacteriology Seminar; Growth Curve Characteristics of Viruses; Judith Tennant; Effects of Chemical and Physical Agents on Viruses; Bernard Mieszkuc; 214 Millard Hall.
- 12:30 - 1:20 Pathology Conference; Autopsies; J. R. Dawson and Staff; 102 I. A.
- 3:30 - General Physiology-Biophysics Seminar; 323 Zoology Building.
- 3:30 - Pediatric Seminar; Sarcoidosis; Mildred Schaffhausen; Sixth Floor, U.H.
- 4:00 - 5:00 Pediatric Rounds on Wards; I. McQuarrie and Staff; U. H.
- 4:30 - 5:30 Clinical-Medical-Pathological Conference; Todd Amphitheater, U. H.
- 5:00 - 6:00 X-ray Conference; Presentation of Cases from Minneapolis General Hospital; Drs. Lipschultz and Gundersen; Eustis Amphitheater, U. H.

Ancker Hospital

- 9:00 - 10:00 Medical X-ray Conference; Auditorium.

Minneapolis General Hospital

- 9:30 - 10:30 Obstetrics and Gynecology Staff Rounds; William P. Sadler and Staff; 301 Harrington Hall.
- 10:00 - Psychiatry Grand Rounds; R. W. Anderson; Station H.
- 10:00 - Cardiac Rounds; Paul F. Dwan; Classroom, Station I.
- 10:00 - Pediatric Rounds; Spencer F. Brown; Stations I and J.
- 11:30 - 12:30 Neurology-Neurosurgery Conference; Classroom, Station M.
- 12:30 - 2:30 Dermatology Rounds on Clinic; Carl W. Laymon and Staff.
- 12:30 - ECG Conference; Boyd Thomas and Staff; 302 Harrington Hall.
- 1:00 - Tumor Clinic; Drs. Eder, Coe, and Lipschultz; Classroom.

Veterans Administration Hospital

- 7:30 - Anesthesiology Conference; Conference Room, Bldg. I.
- 8:45 - Surgery Journal Club; Conference Room, Bldg. I.
- 9:30 - Infectious Disease Rounds; Drs. Hall, Zinneman, Lubin, and Sherman.
- 9:30 - Surgery-Pathology Conference; Conference Room, Bldg. I.
- 10:30 - Surgery-Tumor Conference; L. J. Hay, J. Jorgens and Donn Mosser; Conference Room, Bldg. I.
- 1:00 - Review of Pathology, Pulmonary Tuberculosis; Conference Room, Bldg. I.
- 1:30 - Combined Medical-Surgical Chest Conference; Conference Room, Bldg. I.
- 2:00 - 2:50 Dermatology and Syphilology Conference; F. E. Michelson and Staff; Bldg. III.
- 3:00 - Psychosomatic Conference; C. K. Aldrich; Surgical Conference Room, Bldg. 43.
- 4:00 - Thoracic Surgery Problems; Conference Room, Bldg. I.

Wednesday, January 27

Medical School and University Hospitals

- 8:00 - 9:00 Roentgenology Surgical-Pathological Conference; Paul Lober and L. G. Rigler; Todd Amphitheater, U. H.
- 11:00 - 12:00 Pathology-Medicine-Surgery-Pediatrics Conference; Todd Amphitheater, U. H.
- 12:30 - 1:30 Physiology 114B -- Transport Seminar; Nathan Lifson and M. B. Visscher; 214 Millard Hall.
- 12:30 - 1:20 Radioisotope Seminar; Underground Cobalt Unit, U. H.
- 1:00 - 2:00 Dermatology Clinical Seminar; 300 North Clinic.
- 1:30 - 3:00 Pediatric Allergy Clinic; Albert V. Stoesser and Lloyd Nelson; W-211, U. H.
- 3:30 - 4:30 Dermatology Pharmacology Seminar; J. D. Krafchuk; 3rd Floor Conference Room, Heart Hospital.
- 4:00 - Medicine-Physiology Cardiovascular Conference; Experimental Pulmonary Hypertension; Donald Ferguson and Richard Varco; Heart Hospital Theater.
- 4:30 - 5:50 Dermatology Infectious Disease Seminar; J. K. Krafchuk; 3rd Floor Conference Room, Heart Hospital.
- 5:00 - 5:50 Urology-Pathological Conference; C. D. Creevy and Staff; Eustis Amphitheater, U. H.
- 5:00 - 6:00 Residents' Lecture; Dental Radiography; Dr. Holte; Todd Amphitheater, U. H.
- 5:30 - 7:30 Dermatology Journal Club and Discussion Group; Hospital Dining Room.
- 7:30 - 9:30 Dermatology Pathology Seminar; Review of Interesting Slides of the Week; Robert W. Goltz; Todd Amphitheater, U. H.
- * 8:00 p.m. J. B. Johnston Lectureship; "Recent Advances in the Morphology and Significance of the Cerebral Cortex;" Dr. Andrew T. Rasmussen, Professor Emeritus of Anatomy, University of Minnesota; Museum of Natural History Auditorium.

Ancker Hospital

- 8:30 - 9:30 Clinico-Pathological Conference; Auditorium.
- 12:30 - 1:30 Medical Journal Club; Library.

Minneapolis General Hospital

- 8:30 - 9:30 Obstetrical and Gynecological Grand Rounds; William P. Sadler and Staff; Station C.
- 9:30 - Pediatric Rounds; Max Seham; Stations I and J.
- 10:30 - 12:00 Medicine Rounds; Thomas Lowry and Staff; Station D.
- 11:00 - Pediatric Seminar; Arnold Anderson; Classroom, Station I.
- 11:00 - Pediatric Rounds; Erling S. Platou; Station K.
- 12:15 - Pediatric Staff Meeting; Classroom, Station I.
- 1:30 - Visiting Pediatric Staff Case Presentation; Classroom, Station I.

* Indicates special meeting. All other meetings occur regularly each week at the same time on the same day. Meeting place may vary from week to week for some conferences.

Wednesday, January 27 (Cont.)

Veterans Administration Hospital

- 8:30 - 10:00 Orthopedic X-ray Conference; E. T. Evans and Staff; Surgical Conference Room, Bldg. 43.
- 8:30 - 12:00 Neurology Rehabilitation and Case Conference; A. B. Baker.
- 9:00 - Gastro-Intestinal Rounds; Drs. Wilson, Zieve, Hay, Brakel, Nesbitt and O'Leary.
- 12:30 - Medical Journal Club; Doctors' Dining Room.
- 12:30 - X-ray Conference; J. Jorgens; Conference Room, Bldg. I.
- 1:30 - 4:30 Infectious Disease Conference and Rounds; Wesley W. Spink; Conference Room, Bldg. I.
- 7:00 p.m. Lectures in Basic Science of Orthopedics, Conference Room, Bldg. I.

Thursday, January 28

Medical School and University Hospitals

- 9:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; E-221, U. H.
- 11:00 - 12:00 Cancer Clinic; K. Stenstrom, A. Kremen and B. Zimmermann; Todd Amphitheater, U. H.
- 12:00 - 1:00 Medical Journal Club; Papanicolau Smears in Routine Examination of Women Patients; J. Kauth; 116 Millard Hall.
- 12:30 - Physiological Chemistry Seminar; The Question of the Role of Brown Fat; John Shefeland; 214 Millard Hall.
- 1:30 - 4:00 Cardiology X-ray Conference; Heart Hospital Theatre.
- 5:00 - 6:00 Radiology Seminar; Report of American Cancer Society Meeting; Leo G. Rigler; Eustis Amphitheater, U. H.

Ancker Hospital

- 8:00 - 10:00 Medical Grand Rounds; Auditorium.

Minneapolis General Hospital

- 9:30 - Neurology Rounds; Heinz Bruhl; Station I.
- 10:00 - Pediatric Rounds; Spencer F. Brown; Station K.
- 10:00 - Psychiatry Grand Rounds; J. C. Michael and Staff; Sta. H.
- 11:30 - 12:30 Clinical Pathological Conference; John I. Coe; Classroom.
- 12:30 - 2:30 Dermatology Rounds and Clinic; Carl W. Laymon and Staff.
- 1:00 - Fracture - X-ray Conference; Drs. Zierold and Moe; Classroom.
- 1:00 - House Staff Conference; Station I.

Veterans Administration Hospital

- 8:00 - Surgery Grand Rounds; Conference Room, Bldg. I.
- 8:00 - Surgery Ward Rounds; Lyle Hay and Staff; Ward 11.
- 11:00 - Surgery-Roentgen Conference; J. Jorgens; Conference Room, Bldg. I.
- 1:00 - 3:00 Metabolic Disease Conference; Drs. Flink, and Brown.

Friday, January 29

Medical School and University Hospitals

- 8:00 - 10:00 Neurology Grand Rounds; A. B. Baker and Staff; Station 50, U. H.
9:00 - 9:50 Medicine Grand Rounds; C. J. Watson and Staff; Todd Amphitheater, U. H.
10:30 - 11:50 Medicine Rounds; C. J. Watson and Staff; Todd Amphitheater, U. H.
10:30 - 1:50 Otolaryngology Case Studies; L. R. Boies and Staff; Out-Patient Department, U. H.
11:00 - 12:00 Vascular Rounds; Davitt Felder and Staff Members from the Departments of Medicine, Surgery, Physical Medicine, and Dermatology; Out-Patient Department, Heart Hospital.
11:45 - 12:50 University of Minnesota Hospitals Staff Meeting; Cerebral Hemispherectomy for Intractable Seizures; David R. Johnson, Lyle A. French, and William T. Peyton; Powell Hall Amphitheater.
1:00 - 2:50 Neurosurgery-Roentgenology Conference; W. T. Peyton, Harold O. Peterson and Staff; Todd Amphitheater, U. H.
1:30 - 2:30 Dermatology Grand Rounds; Presentation of Cases from Grouped Hospitals (University, Ancker, General and Veterans) and Private Offices; H. E. Michelson and Staff; Skin Clinic; W-312, U. H.
2:30 - 4:00 Dermatology Hospital Rounds; H. E. Michelson and Staff; Begin at Dermatology Histopathology Room, M-434, U. H.
3:00 - 4:00 Neuropathological Conference; F. Tichy; Todd Amphitheater, U. H.
4:00 - 5:00 124 Advanced Neurophysiology Lecture; Werner Koella and Ernst Gellhorn; 111 Owre Hall.
4:30 - 5:20 Ophthalmology Ward Rounds; Erling W. Hansen and Staff; E-534, U. H.
5:00 - Urology Seminar and X-ray Conference; Eustis Amphitheater, U. H.

Ancker Hospital

- 1:00 - 3:00 Pathology-Surgery Conference; Auditorium.

Minneapolis General Hospital

- 9:30 - Pediatric Rounds; Wallace Lueck; Station J.
10:30 - Pediatric Surgery Conference; Oswald Wyatt; Tague Chisholm; Station I, Classroom.
12:00 - Surgery-Pathology Conference; Dr. Zierold, Dr. Coe; Classroom.
1:00 - 3:00 Clinical Medical Conference; Thomas Lowry; Classroom, Station M.
1:15 - Pediatric X-ray Conference; Oscar Lipschultz; Classroom, Main Bldg.
2:00 - Pediatric Rounds; Stations I and J.

Veterans Administration Hospital

- 10:30 - 11:20 Medicine Grand Rounds; Conference Room, Bldg. I.
1:00 - Chest Follow-Up Conference; E. T. Bell; Conference Room, Bldg. I.
2:00 - Clinicopathologic Conference; Conference Room, Bldg. I.

Saturday, January 30

Medical School and University Hospitals

- 7:45 - 8:50 Orthopedic X-ray Conference; W. H. Cole and Staff; M-109, U. H.
- 9:00 - 10:00 Infertility Conference; Louis L. Friedman, David I. Seibel, and Obstetrics Staff; Eustis Amphitheater, U. H.
- 9:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; Heart Hospital Amphitheater.
- 9:15 - 10:00 Surgery-Roentgenology Conference; L. G. Rigler, J. Friedman, Owen H. Wangenstein and Staff; Todd Amphitheater, U. H.
- 10:00 - 11:30 Surgery Conference; Todd Amphitheater, U. H.
- 10:00 - 12:50 Obstetrics and Gynecology Grand Rounds; J. L. McKelvey and Staff; Station 44, U. H.
- 11:30 - Anatomy Seminar; The Human Gait; Sayed Hamed; 226 Institute of Anatomy.

Ancker Hospital

- 8:30 - 9:30 Surgery Conference; Auditorium.

Minneapolis General Hospital

- 8:00 - Urology Staff Conference; T. H. Sweetser; Main Classroom.
- 9:00 - Psychiatry Grand Rounds; R. W. Anderson; Sta. H.
- 11:00 - 12:00 Medical - X-ray Conference; O. Lipschultz, Thomas Lowry and Staff; Main Classroom.

Veterans Administration Hospital

- 8:00 - Proctology Rounds; W. C. Bernstein and Staff; Bldg. III.
- 8:30 - 11:15 Hematology Rounds; Drs. Hagen, Fifer, and J. Anderson.
- 11:15 - 12:00 Morphology Dr. Aufderheide; Conference Room.