

TO: Administration, New Community Mental Health Center,  
Metropolitan Hospital

FROM: Max Fink, M.D., Professor of Psychiatry      DATE: 8/29/69

SUBJECT: EEG LABORATORY - Metropolitan Hospital Mental Health Center

The development of a Community Mental Health Center requires the application of the best available methods of diagnosis and treatment to reduce the time for treatment and improve the results of interventions. Based on this premise, the Center is required to have a diversity of services.

During the past decade, the role of brain function in mental illness has assumed a greater interest and techniques measuring changes in brain function have found application in diagnosis and management. The changes in brain function are measured principally by psychological performance tests and by the scalp recorded EEG. Much research has been done and clinical applications of quantitative EEG analysis are now available in a few medical centers. In our Department, quantitative EEG analysis is available for research purposes, and has been limited by contracts to patients in the Narcotic Addiction units and the Psychopharmacology Clinic.

The clinical applications include:

1. Diagnosis of therapy resistant psychosis.
2. Determination of adequate levels of antagonists in  
the treatment of heroin addiction.
3. Classification of brain injured children in the  
Mental Health Clinic.
4. Selection of drug therapy in psychotics.

If the equipment were available, we propose to apply these methods to all patients admitted to the Mental Health Center, and for selected out-patients referred by the staff. Staffing funds already exist in the clinical staffing contracts available to the Department.

The techniques used require careful recording of the brain waves, storage on tape, analyses by special programs, and reporting. The individual pieces of equipment and their functions are:

Electroencephalograph (Grass 78) and Couch: Used to amplify brain waves. The Grass instrument provides signals specially suitable for analysis since they do not use a "chopper" type amplifier. (The Offner, Medcraft, Gilson units, although cheaper, are unsuitable).

Tape recorder (Ampex SP 300). Seven channel, FM-IRIG configuration, 1/2 inch tape. Used to store signals for analysis. While Ampex is reliable, other vendors may be used, as Sangamo, Honeywell.

Oscillator (Hewlett-Packard 202CR). To provide a standard for tape units, especially for amplitude comparisons.

Oscilloscope (Tektronix RM 564, dual channel). Monitors the recordings on tape. Either single or dual beam are satisfactory. A storage scope is necessary to allow its use also for photographs of the analyzed output.

IBM 1800 Process Controller. Analyzes EEG waves by period, power and amplitude analysis. Other instruments are available, but much less efficient. This device, though expensive, is the one for which a library of programs has been written and can be used immediately. Other computer systems would be less flexible and require programming. (Our programming has been completed in 2 1/2 years.)

Respectfully Submitted,

Max Fink, M.D.  
Professor of Psychiatry

MF:kp

EQUIPMENT FOR EEG RECORDING

Grass Instruments  
Quincy, Massachusetts

Room 4-17

1	console 7816p43.75 with 76ESCDA-1230-16P	\$ 885.00
1	power supply 67RPS-A	800.00
1	Signal markers MT7A (\$165 ea.) between channels 8 and 9	165.00
8	Oscillographs 60SC (\$140 ea.) with 1" spacing	1120.00
8	EEG Data amplifiers 7P511A	3200.00
1	78MPR-8 Master record playback	150.00
1	67ES25-12 enumeric pushbutton electrode selector	400.00
1	78THIEB 20-N high impedance electrode board, standard numeric	300.00
		TOTAL \$ 7020.00

Room 4-17

1	Ampex Model SP-300 Record/Reproduce portable, 1/2" wide tale, 7 track, 7 amplifiers	\$ 8450.00
1	Model 704 Head degausser	9.95
1	Remote control table top unit plus 30' cable Cat #96520-01 & #4050100-10	74.00
		TOTAL \$ 8533.95
1	Tektronix dual beam Oscilloscope RM 564,3A72, 2B67	1250.00
1	Hewlett Packard Oscillator, 202CR	330.00
1	Inwood Couch H-4900, antique white (Scully Walton)	144.00

## EQUIPMENT FOR EEG ANALYSIS

ROOM 4-22

One - IBM 1800 Process control system consisting of:

1801-2cb	Processor controller
1816-1	Printer-keyboard
1828-2	Enclosure
1851-1	Multiplex terminal
1856-1	Analog output terminal
2310-A2	disc storage
1442-6	Card-read-punch
1443-1	Printer

Cost, single: Approximately \$168,000.

(For detailed specifications, please call Dr. Max Fink or  
Dr. Donald Shapiro, New York Medical College; or, Dr. Wayne Jostrand,  
IBM, 475 Northern Blvd., Great Neck, New York.)