

MEMORANDUM

Upton, L. I., New York

DATE: April 24, 1970

REPOSITORY Records Holding Area Bldg 494 TO: E. P. Cronkite
COLLECTION Cronkite's Files FROM: S. H. Cohn 5 Hz
BOX No. 1 SUBJECT: Review of whole-body counting program
FOLDER Cohn - Whole Body Studies

As knowledge of the whole-body counting and in-vivo activation facilities and their particular capabilities spread among members of the medical communities of Long Island and New York City, requests for co-operation on research projects now in progress, or contemplated for the near future, are rapidly increasing. As the counting and in-vivo activation program expands, there is an ever-growing need for auxiliary personnel, technical, clinical and clerical, to carry out various tasks associated with these procedures.* In order that an assessment be made of the manpower required, I should like at this time to review the programs presently in progress or about to be initiated.

1. Our major project, the study of the effects of fluoride in the treatment of osteoporosis, is nearing completion after six months. There remain 8 in-vivo activation analyses to be performed.

2. A new Calcitonin preparation has just been received from Armour and Company, and as soon as a new group of 8 osteoporotic patients is assembled, an extensive study will be undertaken. This study uses ^{47}Ca kinetic tracer data for a compartmental analysis in addition to whole-body counting and in-vivo neutron activation. In the course of the procedure, ^{47}Ca and ^{40}Ca analyses of 80 samples each of plasma, urine and stool are to be performed. Considerable clinical, as well as computer, work is required to obtain and analyze the data in this study.

3. The Mn study of Dr. Cotzias is continuing. This program involves the production of the ^{56}Mn isotope in the MRR. Following its injection into the patients by Dr. Papavasiliou, the patients are counted in the whole-body counting facility repeatedly during the day. There is again considerable computer work on the data in this project. Twelve patients have been studied to date.

*For example, the in-vivo activation analysis requires our entire staff to perform the procedure. Many of the counting procedures now require the presence of at least two people because of their increased complexity.

4. The hemodialysis study (Letteri and Cinque) has involved neutron activation analysis on 7 patients to date. It is anticipated that 25 patients will be counted in this study as it progresses.

5. The study of growth hormone in growth-retarded children (with Dr. Callip of Meadowbrook Hospital) presently involves 5 whole-body counts each of 12 children.

6. The study of grossly-obese children (with Dr. Knittle) is continuing. Sixty-two children have been counted to date.

7. A study on the rate of loss and gain of Ca in long-term immobilized patients is about ready for initiation (in connection with Dr. Roginsky). Dr. Roginsky has presented one patient with Cushing's disease for study prior to and following adrenalectomy, and a study of a number of other patients with endocrine disturbances involving bone metabolism is now under consideration.

8. Dr. Wallach (of Downstate Medical Center) has requested our collaboration on a study of Paget's disease in a number of patients (probably 20). A number of activation analyses will be involved.

9. Our calibration studies, based on the use of the phantom for in-vivo activation analysis of total-body nitrogen and phosphorus and possibly magnesium, are continuing. These studies require numerous activation runs and considerable computer time.

10. Plans are now being worked out for the new $^{238}\text{PuBe}$ neutron source for clinical use, to be constructed in the Medical Building. This is a project that will involve extensive calibration procedures before it can become operational.

11. The pharmacokinetic studies involving ^{82}Br -Halothane have been discontinued at the present time, but these may be reactivated if Dr. Geddes returns to this country.

12. There are miscellaneous projects such as Dr. Letteri's and Dr. Pellegrino's patient from time to time. Dr. Bateman's patients with neoplastic bone changes have been measured several times by means of in-vivo activation and with kinetic tracer studies involving ^{49}Ca and ^{18}F .

13. Efforts to modify and improve the computer handling of the WBC output data are continuing and time-consuming.

14. The standard program for taking whole-body counts for physicals continues. Over 500 counts have been made in this connection. In all, during its two years of operation, the present whole-body counter has been used for over 7000 counts, which have been recorded on tape and stored. Just the handling of this volume of output has proved to be a formidable task.

cc: Dr. J.S. Robertson

1176843