

The consequences of Evans's proposal were far reaching and had a positive effect on the study of those exposed to radium.

Argonne Radium Studies, 1945-1960

Argonne National Laboratory was formed on July 1, 1946, from the wartime Metallurgical Laboratory. The Met Lab, as of July 30, 1945, included a Health Division containing three sections: Clinical Medicine, Biological Research, and Medical Industrial Hazards. These sections were subsequently transformed into a Medical Division, a Biology Division, and a Health Physics Division in the new national laboratory. Several changes in division names, functions, and areas of responsibility took place in the late 1940s before these divisions in the early 1950s became a Health Services Division under R.J. Hasterlik, a Biological and Medical Division under A.M. Brues, and a Radiological Physics Division under J.E. Rose.

The first record of any Argonne study of radium in humans appeared in the first quarterly report of the Biology Division, dated August-October 1946 (Table 3). In this document, the Radiochemical Group under W.P. Norris reported on attempts to remove radium from the body of a man who had worked with radium for 35 years. This subject, reported to contain about 2 μCi of radium, was admitted to Billings Hospital on July 4, 1945, under the care of Brues and L. Jacobson. Radon breath measurements were made on two occasions, and the body content was estimated at 2.08 μCi and 1.80 μCi , with the assumption that 45% of the radon formed in the body was exhaled. Although the Radiation Physics Group was eager to measure the external gamma radiation emitted by the patient, clearance could not be obtained for him to enter Site B, a former brewery just south of the University of Chicago campus, where this group was located at that time.

The patient was given ammonium chloride and parathormone and placed on a low-calcium diet, according to the usual "deleading" technique. Urinary excretion of radium was increased by about a factor of five by this regime. A more complete analysis of the data appeared in the quarterly report for August-October 1950.

In the quarterly report for May-August 1947, a cryptic two-sentence paragraph from the Radiation Physics Group of the Biology Division indicated that some additional work on humans might have been underway. The report, authored by V. Clemens and S. Brar, stated the following: "A series of measurements has been made to determine the amount of radon present in the air that is exhaled from the lungs of human subjects. These