Mayo Clinic physicians were at the forefront of research for the treatment of many diseases in the field of infectious diseases and had significant influence in the study and use of drugs such as penicillin, sulfanilimide, and streptomycin. Three articles published in the early 1940s in Mayo Clinic Proceedings document initial questions and demonstrate dramatic results.

Drs W. E. Herrell, W. H. Feldman, and H. C. Hinshaw must have been in great awe of the results of their studies, which first used animal resources to develop and prove or disprove the safety and efficacy of the compounds they were working with. In this research, the ability to extinguish the cause of the disease without harming the patient was of paramount concern. In the early 1900s tuberculosis was one of the leading causes of death in the United States and around the world and was commonly called “consumption.” Treatment was left to isolating the patients in sanitariums and providing healthy living conditions. By 1945, Hinshaw and Feldman, in conjunction with Merck and Co., reported treating 34 patients who had tuberculosis with streptomycin. This was new territory and the language of the studies were ones of guarded hope and cautious optimism: “It is to be ardently hoped that if these results are noticed by lay persons, they will interpret the results in the same cautious frame of mind that scientific investigators have endeavored to maintain.”

In 1943, Dr Herrell reported on Mayo Clinic’s experience with penicillin, another antibiotic that gave great hope, as can be seen from the images taken of case #5 in his report published in the Proceedings in March of that year. The dramatic change from onset of treatment, to 96 hours after, 9 days after onset of treatment, and on dismissal, demonstrate the miraculous recovery of a little girl, something that could easily be taken for granted in modern medicine. In the article, Dr Herrell noted that clinical use of penicillin was slow to be recognized as valuable in the decade or so after its discovery and that the nature of the drug was unlike any of the other antibiotics being used at the time. It appeared to have few toxic side-effects. The patients in the cases included in this report received relief from varied and interesting conditions: Two had infections from biting their cheek and tongue; 2 had postsurgical infections, one after kidney stone removal and one after a radical mastectomy; others included skin ulcers, cellulitis, and endocarditis. The latter condition had less satisfactory results, which led Dr Herrell to conclude that the use of penicillin had limitations: “Only through the selection of infections attributable to organisms susceptible to penicillin can unfavorable results be prevented.”

References