

[Gilliam AG, Onstott RH \(1936\)](#). Results of field studies with poliomyelitis vaccine. *American Journal of Public Health* 26:113-118.

### Key passages

## Results of Field Studies With Poliomyelitis Vaccine\*

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The vaccine was offered frankly for study purposes—to determine its efficacy in preventing poliomyelitis under field conditions. It was considered as offering hope as a prophylactic and as being reasonably safe. Parents desiring vaccine for their children under 8 years of age were instructed to list name, address, age, color, and sex with their own physician. The physicians' lists would then be turned over to one of us who would arbitrarily divide them so that approximately half would receive vaccine and half be held as controls. It was made clear that the private physician would have no voice in this selection. The inoculations were to be done in the physicians' offices during office hours and those selected would be notified by us when to report for vaccination. No effort was made to urge vaccination, or to urge physicians to recommend it.

Lists were first received from physicians during the third week in June. The method of selection employed was alphabetical. The names of applicants were arranged alphabetically and approximately the last half of each list was selected for vaccination, the first half being held as controls.

The adequacy of the sample, in point of numbers, to satisfy elementary requirements of the theory of probability is amenable to calculation. In North Carolina counties where the studies were carried out, assuming that the attack rate observed this summer (approximately 60 cases per 100,000 of the population under 8 years of age) prevailed in the controls, and that the vaccine was 100 per cent effective, a sample of 20,000 candidates—10,000 vaccinated and 10,000 controls—would have been necessary in order that the difference between the number of cases in the vaccinated and the number in the controls be relatively free from mere chance. With the same rate in controls, and the vaccine only 80 per cent effective, a sample of 40,000 candidates would have been necessary. Of course, the inclusion of individuals of older ages in the study group would tremendously increase the size of sample required because of the sharp decline in attack rate as age progresses. The above figures are also predicated on reported cases, about 15 per cent of which were abortive. For an unequivocal evaluation it would probably be more rational to use only paralytic cases because of diagnostic difficulties and because paralysis is, after all, what it is desired to prevent. The sample necessary would be increased if it were calculated on the basis of the paralytic rate.