

In a series of guinea pigs given 10 units of horse-produced serum, after 7 days less than one-half a unit was found, at the end of 14 days less than one-twentieth. Another series was given 10 units of a guinea-pig-produced serum and they held the immunity much better; at the end of 14 days one unit was still contained.

Another series was given 500 units of horse-produced serum; at the end of 14 days the guinea-pigs contained but $1\frac{1}{2}$ units. We find that a certain percentage of antitoxin is destroyed daily and that larger doses prolong the immunity, so that a child that gets 300 units gets an immunity for 10 days or so. One thousand units will protect from months. If it was possible to produce serum from two to three times, and very likely anaphylaxis much less.

Adults require relatively smaller doses for immunization than do children. The amount of antitoxin to the c.c. of the blood of the individual to be protected should not be less than 1-20 to 1-10 of a unit, giving 10 days' immunity. There is no method of investigating clinically the amount of toxins in the blood, and if it was possible to do so how could the amount already absorbed by the cells be ascertained. The dosage of antitoxin can only be determined by experimentation, and we now have abundant data to go by.

The cure for diphtheria for nearly 20 years has been antitoxin. It has rapidly come to the point that no other form of cure is attempted unless a supply of antitoxin is not procurable. When it first became available, we used it with fear and trembling, due to the very radical change and newness in treatment. We gazed in amazed delight at the throats a few hours later and found the disease disappeared almost by magic, the patient better and showing it, and no bad effects. At first its cost was a bar, but when its effects became well known, that did not stand in the way. In administering antitoxin we must remember that it is antitoxic, not antibacterial, and we must not neglect the local measures that put an end to the bacteria of the throat and nasal passages. Spraying, swabbing and gargling with antiseptics such as peroxide of hydrogen, solution of biniodide and bichloride of mercury, and irrigations with salt solutions are all very useful for the local treatment. Some have applied antitoxin locally and report success. Antitoxin being antitoxic and having a disease that secretes toxins in the body rapidly and also the chief danger to that body being the poisonous action of these toxins, we desire to eliminate them as rapidly as possible and administer antitoxin by subcutaneous, intramuscular or intervenous method, sometimes by the mouth of rectum for the purpose of neutralizing the toxins, and our dose must be large enough to neutralize the toxins already developed and to have some over to