

History of Clinical Research

Though Clinical Research has led to life saving treatments, its past included painful incidences, times when people were harmed because ethics were not followed. These events taught important lessons and led to stronger rules to safeguard the participants in today's trials. Let us review the major tragedies that occurred during the 20th century in the history of clinical research, look at their consequences, and see how they contributed to the development of various laws, guidelines, and regulations.



Sulfanilamide Tragedy

The Elixir Sulfanilamide disaster of 1937 was one of the worst cases of mass poisoning in the 20th century. It happened soon after sulfanilamide, the first sulfa antibiotic came out. A liquid form of this drug, called Elixir Sulfanilamide, was made using diethylene glycol as a diluent which is toxic to humans. As a result, 105 people died after taking it as medicine. At that time, drug makers were not required to test medicines for safety before selling them. Because of

this tragedy, the U.S. Congress passed a new law called the Federal Food, Drug and Cosmetic Act in 1938 that made companies prove their drugs were safe before they could be sold. This act gave the FDA the authority to regulate drug safety and labeling and required manufacturers to provide truthful labeling and be accountable for their products.



World War II – Nazi Doctors' Trial

During World War II, Nazi doctors conducted brutal and unethical medical experiments on concentration camp prisoners in early 1940s without their consent, causing death, disfigurement, and long-term disabilities. After the

war, these doctors were put on trial by a U.S. military court in Nuremberg between December 1946 and August 1947.

This trial was called the Doctors' Trial. The trial exposed the horrific human rights violations and led to convictions, including death sentences for several doctors. In response, the Nuremberg Code was established in 1947, setting ethical standards for human research, emphasizing voluntary informed consent, scientific validity and

minimizing harm to participants. This code became a foundational document for modern research ethics and the protection of human subjects.



Malformations due to maternal ingestion of thalidomide (Schardein 1982 and Moore 1993).

Thalidomide Tragedy

Thalidomide was sold in the late 1950s and early 1960s as a safe sedative and treatment for morning sickness in pregnant women, but it was never tested for effects on unborn babies. It caused thousands of babies to be born with severe birth defects like shortened

or missing limbs and other organ problems. This tragedy led to stricter drug laws in the U.S., known as the Kefauver–Harris Amendments of 1962, which required proof of safety and effectiveness before drugs could be sold. The FDA gained stronger drug approval powers and also rules for informed consent by trial participants and adverse reaction reporting to FDA were established to protect patients better.

Tuskegee Syphilis Study



The Tuskegee Syphilis Study (1932–1972) involved African American men with syphilis who were deliberately left untreated to observe the disease's progression. Over 100 men died, and the disease spread to 40 wives and 19 children born with congenital syphilis. The men were not



informed or treated even after penicillin became available. The public outrage prompted the creation of the Belmont Report which was published in 1979 and Institutional Review Boards to protect research participants.

History of Clinical Research - Summary

The following is a summary of significant 20th century incidents and the subsequent regulatory advancements established in response to each event:

