

Polio Vaccine Announced Effective 60 Years Ago at U-M



Thomas Francis Jr. (left) and Jonas Salk at the 1955 announcement of the effectiveness of the Salk polio vaccine (Images courtesy of Bentley Historical Library)

On April 12, 1955, the world learned that Jonas Salk had developed an effective vaccination against polio. Thomas Francis Jr., chair of the Department of Epidemiology, announced one of the biggest breakthroughs in modern medical history at U-M's Rackham Auditorium. Francis, who mentored Salk during his early research in virology, presented his findings after extensive field trials of Salk's vaccine in which more than 1.8 million children participated.

Salk developed the vaccine at the University of Pittsburgh, but the foundation for his breakthrough was built under Francis at U-M. (For information on recent vaccination research at U-M, see the section below.)

Salk and Francis

While attending medical school at New York University, Salk spent a year researching influenza. Francis was the chair of the medical department at NYU and had recently isolated the flu virus in humans. Francis developed the first vaccine for influenza by using a killed virus—one that supports immunity without infection.

Francis was recruited to become head of the epidemiology department at the newly formed School of Public Health at U-M, and Salk soon followed to conduct a postgraduate fellowship in 1941. It was during this time at Michigan that Francis mentored Salk and taught him the methods for vaccine development he pioneered.

Salk spent the next eight years working on his world-changing vaccine at the University of Pittsburgh.

The Field Trials



U-M President Harlan Hatcher, Thomas Francis, Jonas Salk, and Basil O'Connor appear at the press conference. The success of Salk's research is due in part to O'Connor's backing as leader of the National Foundation for Infantile Paralysis.

After preliminary testing (including Salk inoculating his wife and children with the vaccine), Francis was named director of the U-M Poliomyelitis Vaccine Evaluation Center and was charged with leading the field trials exploring the vaccine's effectiveness in 1954. The effort was unparalleled:

- \$17.5 million was dedicated to the project.
- More than 1.8 million children were part of the study.
- 100 U-M staff and faculty participated.
- Data were collected from 217 distinct areas in three countries: The United States, Canada, and Finland.
- 20,000 physicians took part.

Harry Weaver, researcher at the National Foundation for Infantile paralysis, described the trials as a "calculated risk."

"Safe, effective, and potent"



More than 150 reporters were present for the announcement at Rackham Auditorium.

Francis announced his findings at Rackham Auditorium after months of anticipation from the press and medical community. A crowd of close to 500 was present, and 16 cameras lined the back, some broadcasting on closed-circuit to 54,000 physicians watching in movie theaters across the country. The world was listening when Francis declared the vaccine "safe, effective, and potent."

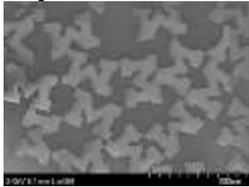
"There can be no doubt that humanity can pull itself up from its own bootstraps and protect its children from the insidious invasion of ultramicroscopic disease," the [original press release](#) stated.

The World Health Organization declared polio "officially interrupted" in the Western Hemisphere following the announcement of Salk's vaccine. Francis was awarded the Medal of Freedom and a Lasker Award, and was elected to the Polio Hall of Fame. U-M continues to award the [Thomas Francis Jr. Medal in Global Public Health](#).

Current Vaccine Research

The University continues to lead the way in many facets of medical research. Following are just a few recent examples of medical excellence at Michigan.

- A Michigan-led research team used a mathematical model of malaria transmission to find out what happens when [bed nets and malaria vaccines](#) are used together. In some cases, the use of vaccines and bed nets may actually make the situation worse. Malaria killed an estimated 600,000 people in 2013.
- U-M researchers have demonstrated a [nanoparticle manufacturing process](#) capable of producing multilayered, precise shapes (like ultra-small Block Ms). The particles may be useful for inhalable vaccines and time-release prescription drugs.



- This [video from the School of Public Health](#) explains why we don't have a vaccine for Ebola.
- Professor Pej Rohani researched the [root causes of the whooping cough resurgence](#). Rohani said he strongly supports childhood vaccinations and a tightening of personal-belief exemptions that allow some parents to opt out of vaccinating their children.