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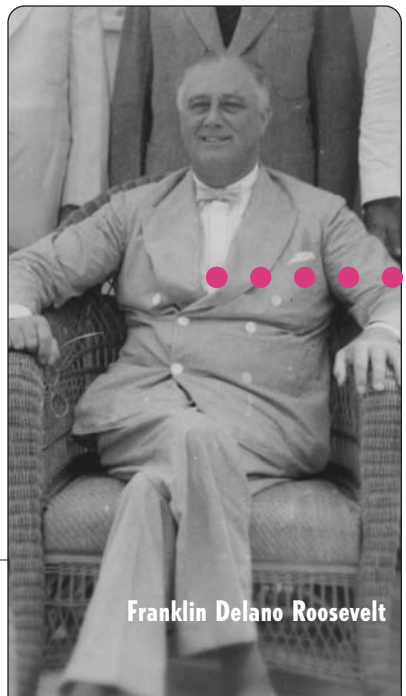
FDR's impetus, O'Connor's organizational genius, and Salk's scientific acumen led to scenes like this (in San Diego in April 1955), as people across the country flocked to get the new polio vaccine.

THE MAN IN THE MIDDLE

By Timothy Takaro, M.D.



DARTMOUTH COLLEGE ARCHIVES

Franklin Delano Roosevelt

Virologist Jonas Salk

UNIVERSITY OF PITTSBURGH ARCHIVES

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Basil O'Connor with 1954's March of Dimes poster girl

Fifty years ago, the United States was in the midst of the biggest public-health field trial ever held. In the spring of 1954, 1.8 million children all across the country were given either a placebo injection or a shot of a new vaccine—now known as the Salk vaccine—in an attempt to control the epidemics of poliomyelitis that ravaged the U.S. each summer. The disease left an average of 40,000 patients paralyzed and thousands dead every year.

The man who engineered the massive field trial was Basil "Doc" O'Connor, Dartmouth College Class of 1912. He was, however, neither a physician nor an epidemiologist but a law partner of Franklin Delano Roosevelt. It was his close association with and sympathy for his friend, who was himself a victim of polio, that led directly to O'Connor's distinguished and remarkably successful career as a venture philanthropist. Ultimately, he made his mark not as a Wall Street lawyer, though he had been very good at that pursuit, but as the guiding genius of the effort to eradicate poliomyelitis in the U.S. and, eventually, in much of the rest of the world.

It is surprising that there is no definitive biography of Basil O'Connor, considering the magnitude of his accomplishments—which garnered him countless honors, including the Lasker Scientific Award in 1958, widely considered "the American Nobel"; the company he kept—at the highest levels of science and government; and the influence he wielded—as president of the National Foundation for Infantile Paralysis, which later became the March of Dimes, and as executive director of the American Red Cross, then the two largest philanthropic organizations in the U.S. True, he has been written about in countless articles and referred to in numerous books, and his death merited a three-column obituary in the *New York Times*. But there has never been a book. His feisty nature and low boiling point (described by one associate as "close to room temperature") may have been off-putting, but the public health benefits that came about because of his fervor and single-minded sense of purpose are incalculable. And his story is fascinating.

President Roosevelt started it and Jonas Salk finished it, but the middleman who connected the dots was Dartmouth College alumnus Basil O'Connor. "It," of course, was the most burning health problem of the mid-20th century —figuring out a way to prevent polio.

Takaro, a 1942 graduate of DMS, is a retired thoracic surgeon and former chief of staff at the VA Medical Center in Asheville, N.C. He has written two previous features for Dartmouth Medicine*—one about a 1939 expedition on K2 that included three Dartmouth climbers, and one about a cache of letters written by an 1843 DMS alumnus from the goldfields of California back to his family in New Hampshire. For this account on another fellow alumnus—someone whom Takaro considers "one of Dartmouth College's most distinguished and colorful graduates"—he is indebted to Jane S. Smith for her 1990 book about the development of a polio vaccine,* Patenting the Sun, *and to Barbara Krieger of the Dartmouth College Archives for her assistance in making available material from Basil O'Connor's alumni files.*

GLOBAL POLIO ERADICATION INITIATIVE

As polio ravaged the U.S. through the middle of the 20th century, this was a common sight—row upon row of iron lungs enabling paralyzed patients to breathe.

It was Dartmouth President Ernest Martin Hopkins who introduced O'Connor to another young New York lawyer, Franklin Delano Roosevelt.

Daniel Basil O'Connor's antecedents were Massachusetts Irish (Taunton, to be specific) and impecunious. His father was a tinsmith, and Daniel (he dropped his first name when he moved to New York and found too many other Daniel O'Connors in the New York telephone directory) had a newspaper route at the age of 10 and was soon in charge of the local newsboys. He received a scholarship to Dartmouth and further supported his education by playing the fiddle in a dance band. He formed his own fraternity when he was not invited to pledge by any of the established houses.

It was as a freshman at Dartmouth that O'Connor picked up the nickname "Doc," partly as a reference to his initials and partly as a spoof on Dartmouth's then-football coach, John "Doc" O'Connor—the joke being that our hero was a bantamweight. But he didn't seem to mind the appellation, and it stuck.

After graduating from Harvard Law School in 1915, O'Connor headed for New York City and a job with the prestigious law firm of Cravath and Henderson. Dartmouth President Ernest Martin Hopkins introduced O'Connor to another young New York lawyer, Franklin Delano Roosevelt. In 1921, Roosevelt was stricken with polio while on vacation with his family in Maine. The law partnership began in 1924—largely as a marriage of convenience. O'Connor had gone into practice on his own in 1919, and he wanted the Roosevelt name on the firm to draw in clients; FDR, for his part, wanted the facade of an office (which he almost never visited) and a small but steady income ($10,000 a year), whether he did any work or not. This would be his own money, as opposed to family money, to dispose of as he wished. (On one day when Roosevelt did come into the firm's office, at 120 Broadway, O'Connor was there in the lobby as Roosevelt sprawled to the floor in a failed attempt to make it to the elevator, and O'Connor helped his friend up. This was one of the rare instances when FDR fell in public. After that, he went to extreme lengths to hide his disability.) The law partnership was dissolved when FDR became president in 1933, but the close relationship between the two lasted for the rest of FDR's life.

It was while visiting Roosevelt in Warm Springs, Ga., where FDR hoped the mineral springs would aid his rehabilitation, that O'Connor got roped into the polio campaign. Roosevelt was planning to buy the ramshackle resort (eventually he put about a third of his personal fortune into it). O'Connor advised against the expenditure, yet not long afterward he found himself appointed first the treasurer, and then the president, of the Georgia Warm Springs Foundation—the precursor of the National Foundation for Infantile Paralysis. One of FDR's attributes was his uncanny ability to inveigle even hard-headed people into seeing his visions and eventually helping him to realize them.

Many years later, O'Connor was quoted as saying, "I couldn't have been less interested in the project. But in 1926 he [FDR] bought it and made a nonprofit foundation of it, and in 1928 he ups and becomes governor of New York and nonchalantly says to me, 'Take over Warm Springs, old fella: you're in.' I tell you, I had no desire to be 'in.' I was never a public do-gooder and had no aspirations of that kind. But I started enjoying it. Like Andrew Jackson at the Battle of New Orleans, I found myself up to my rump in blood and liked it."

After the Warm Springs Foundation set as its high-minded goal providing any victim of polio with rehabilitation—a goal that would soon begin to bankrupt the foundation—FDR was elected president of the United States and took office in March of 1933. That left O'Connor holding the bag at Warm Springs. But it was soon apparent that he had a creative entrepreneurial streak. The year after FDR's inauguration, a highly successful series of

annual "Birthday Balls"—held on FDR's birthday, January 30—was begun to raise money for the foundation. Local postmasters were co-opted as honorary chairmen of these events, to help organize and recruit volunteers. The effort was run like a political campaign, with buttons and banners and armbands and posters to drum up interest and support from local communities. Six thousand separate balls were held on January 30, 1934, and over $1 million was collected for the Warm Springs Foundation. That set the pattern of fund-raising for polio from that day forward.

The unexpected financial success prompted the trustees of the foundation to raise their horizon—not just to keep Warm Springs viable but to go all the way in the effort to eradicate polio. An independent commission was formed to distribute the monies from the balls for research into the cause, treatment, and prevention of the disease. This expanded ambition led to FDR's announcement in 1937 of the formation of the National Foundation for Infantile Paralysis. Polio victims all across the country could expect to be helped by the foundation. And Doc O'Connor found himself appointed to run the show.

Ever the impresario, he quickly tapped the entertainment industry for help, and movie stars and radio performers were asked to lend their glamour to the cause. Then one of them—Eddie Cantor, a hugely popular and beloved comedian—had a stroke of genius. Inspired by a famous and portentous news show, *The March of Time*, Cantor suggested a "March of Dimes"—an invitation by which anyone and everyone, regardless of means, was encouraged to contribute to the fight against polio. People were urged to stick a dime in an envelope and send it directly to the White House. The campaign—pushed hard on the radio and in movie theaters and supported by the likes of Jack Benny and Humphrey Bogart and James Cagney and Kate Smith and Jascha Heifetz and Judy Garland and Nancy Reagan (before she became Nancy Reagan)—was enormously successful. Bags and bags of mail were received: 150,000 pieces during a period when the usual count would have been 5,000. The White House mail room was overwhelmed, in fact, and 50 additional postal clerks had to be hired to cope with the deluge.

The first appeal raised $1.8 million. The associated hoopla appalled the conservative scientific community, but nevertheless they were glad to take the money that began to rain upon their laboratories to do research on polio. The annual take soared to $20 million by 1945. O'Connor continued to keep the whole enterprise under his control. He hired the needed special talents: the thinkers, the publicists, the organizers. He expanded the single office at 120 Broadway that had been set aside for National Foundation work to an entire suite of rooms. By the end of World War II, the foundation had become a big business. By combining fear of the "crippler" disease with slogans to promote the Birthday Balls like "To Dance So That Others Can Walk," the campaign against poliomyelitis became solidly lodged in the public imagination.

Doc O'Connor had the genius and perseverance to channel this huge popular response, translating it not only into improvements in iron lungs—respirators that were much in demand by hospitals for patients with bulbar polio, which affected the muscles that control breathing—and into therapists to provide direct patient care nationwide, but also into the education of more professionals and, most importantly, into basic research. He always surrounded himself with the best scientific advisors, but they remained just that—advisors. The foundation made all the decisions. Careful organization at the local and national level made it all work. About half the money raised went back to the community to care for local polio cases, and half went for education and research.

Meanwhile, as the post-war baby boom began and the population increased, so, too, did the incidence of polio. The number of cases climbed inexorably, from some 10,000 in 1940 to 58,000 by 1952. The urgency of finding a way to prevent this devastating disease was obvious, but even knowledge as basic as the kind of virus that caused it was lacking. It had been known that the disease was caused by a virus since 1908, when a pair of Austrian researchers induced the disease in monkeys by injecting them with extracts from a human victim of polio. But even with 1940s technology, the poliovirus was too small to be seen. When Harvard's Dr. John Enders discovered in 1949 that the virus could be grown outside a monkey's body, in human tissue samples, it was a significant development. The work won Enders and his colleagues the 1954 Nobel Prize and greatly advanced the search for a cure. Dr. Jonas Salk—a young, up-and-coming virologist at the University of Pittsburgh whose real interest was the influenza virus—took on the arduous job of typing the polio virus in order to acquire funds to build his struggling laboratory.

When O'Connor decided that the foundation needed a director of research—an unheard of notion, especially for a fund-raising organization—his own Committee on Research, traditionalists to the core, thought it a very poor idea. The concept of

DARTMOUTH COLLEGE ARCHIVES

O'Connor consorted with movers and shakers. Here (right), in his role as chairman of the American Red Cross, he meets with General George Patton in France.

Many years later, O'Connor said of being inveigled by FDR into heading the fight against polio: "I started enjoying it. Like Andrew Jackson at the Battle of New Orleans, I found myself up to my rump in blood and liked it."

UNIVERSITY OF PITTSBURGH ARCHIVES

This little girl doesn't look happy about getting her polio shot from Dr. Salk himself, but the nation was thrilled by Salk's discovery, thanks to O'Connor, of a vaccine.

O'Connor maintained that "committees are to help you do what you want to do, and if the committee doesn't do it, fire them and get a new one."

"directing" research was (and still is) anathema to most scientists. But O'Connor's management style was supremely goal-oriented: he maintained that "committees are to help you do what you want to do, and if the committee doesn't do it, fire them and get a new one." The organization soon had a director of research.

Dr. Thomas Rivers, who headed the Rockefeller Institute's laboratory on virus research and chaired the National Foundation's Committee on Research, once said about O'Connor: "That old man [O'Connor was not yet 60 at the time] didn't know any more about science than my left shoe, but he was willing to learn." Of Rivers, O'Connor said: "He was extremely learned, but not what you'd call exceedingly bright." But the scientist and the impresario knew they needed each other, they respected each other, and they got along remarkably well.

The scientific advisors—all of them top-notch researchers—were invited to round-table conferences on polio that the foundation sponsored, but they were not paid for their advice; they were, however, compensated by being put up in luxury hotels in attractive venues. Even O'Connor, for all the time and effort that he put into the cause, took no salary from the foundation (until years later)—but he liked to travel in style, usually in limousines and sometimes in his own private railroad car.

Yet raising large sums of money turned out to be the easy part of the task O'Connor had tackled. The scientific and organizational challenges were another matter altogether. In 1953, Salk announced that he had developed a polio vaccine and that it had been proven effective and safe in a pilot study on 161 children. Based on this slim evidence, O'Connor undertook to persuade the scientific community to gear up for a nationwide field trial of unprecedented proportions—involving nearly two million subjects—within the next calendar year. But because Salk's vaccine was made of killed virus, and therefore involved new and still unproven immunological principles, there was extensive opposition to this plan from reputable scientists. One of the leading dissidents was Dr. Albert Sabin, who was working on a polio vaccine based on the conventional concept of a live but attenuated, or weakened, virus.

And combating scientific opposition was just one of the daunting problems facing O'Connor. He also had to solve the logistical nightmares of producing massive numbers of doses of the new vaccine according to Salk's precise protocol (which was still evolving); of designing a statistically valid study; and of organizing volunteers on a nationwide scale —all on relatively short notice.

Up to this point, the federal government, of which O'Connor was deeply suspicious, had been kept at arm's length. In fact, the National Institutes of Health had spent only about $72,000 on polio research as against the foundation's millions. But O'Connor recognized that, should something go wrong with the contemplated trial, it would be politically advantageous to have the U.S. Public Health Service sharing some of the responsibility. On the other hand, should the nationwide trial be a success, the vaccine would have to be licensed for general use by the federal Laboratory of Biologics Control, since it would surely be demanded in large quantities by the public as protection against polio. The director of the federal lab insisted on having an additional 5,000 children inoculated with the commercially produced vaccine to ensure its safety before the trial began. At the same time, representatives of the American Medical Association were worried about mass vaccination clinics raising the specter of "socialized medicine."

Another problem was the conflict between Jonas Salk's alleged aversion to publicity's glare and the National Foundation's need for it—and the

more, the better. When leaks and misinformation about the still-unpublished pilot study began to make their inevitable rounds, raising false hopes that a widely available vaccine was around the corner, Salk felt impelled to go public to dispel the rumors; a nationwide radio address was arranged. Two days before the publication of Salk's pilot study in the *Journal of the American Medical Association*, CBS put Doc O'Connor and Jonas Salk on the air on a program called "The Scientist Speaks for Himself." For O'Connor, it was a golden opportunity to remind people of their role in supporting the research that still had to be done. For Salk, it was a chance to explain the intricacies of developing vaccines and the need for field trials to prove their efficacy and safety. But for the medical community at large, it was perceived as a breach of professional ethics to present research findings directly to the public before they had been published. Salk's reputation never quite recovered from the perception that he was a publicity seeker.

Worse, the prominent author Dr. Paul de Kruif, miffed because some of his own projects had not been funded by the National Foundation, got the ear of gossip columnist Walter Winchell. Two weeks before the trials were to begin, Winchell began postulating the dire notion that the vaccine might be lethal.

Amidst all of this uncertainty, O'Connor had to remind his Vaccine Advisory Committee how many children would likely be paralyzed each year that the availability of an effective vaccine was delayed. Finally, a unanimous decision to go ahead with the trials was obtained, and an emergency March of Dimes was held to cover the extra $20 million in anticipated expenses not covered by the previous campaign.

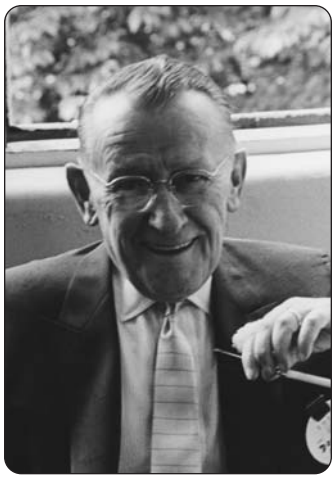
The trial itself, conducted over a span of several months in 1954, was a miracle compounded of hope, desperation, organization, and dedication. For the succeeding few months, both the scientific community and the public were kept in the dark about its outcome, as the massive amounts of data were collected and analyzed in as dispassionate a manner as possible—behind closed and guarded doors by the study's scientific director, Dr. Thomas Francis, the most highly regarded epidemiologist in the country. There was enormous pressure to announce the results quickly so that vaccinations could be carried out on as wide a scale as possible before the next polio season began. The attention focused on the public announcement of the trial results was huge—setting a new precedent for press releases. A large auditorium at the University of Michigan's Ann Arbor campus attracted all the major newspapers and radio networks for the dramatic announcement of the safety and success of the field trial. To the public, Salk became a minor god overnight.

The rest of the story is anticlimactic, albeit with moments of drama. One bad batch of vaccine made by Cutter Laboratories caused great anxiety. Sabin's vaccine had to be tested in the U.S.S.R. because the Salk trials and the associated extensive use of gamma globulin were judged to have contaminated the U.S. population in a manner likely to confound Sabin's results. Eventually, the live but attenuated Sabin vaccine—which could be taken orally—won out over the Salk killed vaccine, and polio was eradicated from this country and much of the world. Finally, the foundation had to look for another reason for existence and turned to combating birth defects—which created new headaches for Doc O'Connor. But that is another story.

A fitting epitaph for O'Connor, who died 18 years after the famous vaccine trial, is a quotation he used himself in one of his many speeches. It's from Dr. Erich Fromm's 1959 biography of Sigmund Freud: "Many people have, potentially, a passion for reason and for truth. What makes it so difficult to realize this potential is that it requires courage—and this courage is rare. The courage which is involved here is of a special kind. It is not primarily the courage to risk one's life, freedom, or property, although this courage, too, is rare. The courage to trust reason requires risking isolation and aloneness, and this threat is to many even harder to bear than the threat to life. Yet the pursuit of truth by necessity exposes the searcher to this very danger of isolation. Truth and reason are opposed to common sense and public opinion. The majority cling to convenient rationalizations and to the views that can be glimpsed from the surface of things. The function of reason is to penetrate this surface and to arrive at the essence hidden behind that surface; to visualize objectively, that is, without being determined by one's wishes and fears, what the forces are which move matter and men. In this attempt one needs the courage to stand the isolation from, if not the scorn and ridicule of, those who are disturbed by the truth and hate the disturber."

That observation is just as applicable today as it was 45 years ago, when it was written. Doc O'Connor's goal was not to be beloved by the masses, but to save them from polio. Ironically, however, his own life was touched by the disease he'd spent years fighting when his daughter Bettyann, then a young mother, was stricken with polio in the summer of 1950.

But that, too, is another story. ■



DARTMOUTH COLLEGE ARCHIVES

O'Connor—pictured here at a 1962 Dartmouth College function—was affected personally by polio when his daughter Bettyann was stricken with the disease in 1950.

O'Connor reminded his Vaccine Advisory Committee how many children would likely be paralyzed each year that an effective vaccine was delayed. Finally, a unanimous decision to go ahead with the trials was obtained.