Cigarettes and the US Public Health Service in the 1950s

Mark Parascandola, PhD

A B S T R A C T

The conclusion of the United States Surgeon General's Advisory Committee on Smoking and Health in 1964 that excessive cigarette smoking causes lung cancer is cited as the major turning point for public health action against cigarettes. But the surgeon general and US Public Health Service (PHS) scientists had concluded as early as 1957 that smoking was a cause of lung cancer, indeed, "the principal etiologic factor in the increased incidence of lung cancer." Throughout the 1950s, however, the PHS rejected further tobacco-related public health actions, such as placing warning labels on cigarettes or creating educational programs for schools. Instead, the agency continued to gather information and provided occasional assessments of the evidence as it came available.

It was not until pressure mounted from outside the PHS in the early 1960s that more substantive action was taken. Earlier action was not taken because of the way in which PHS scientists (particularly those within the National Institutes of Health) and administrators viewed their roles in relation to science and public health. (*Am J Public Health.* 2001;91:196–205)

Discovery of an association through epidemiologic studies raises 2 questions: Is the association causal? What should be done about it?[1] These questions arose in the 1950s with regard to excessive cigarette smoking and lung cancer. Although US Public Health Service (PHS) officials and scientists concluded that the association was causal,[2,3] it was not at all obvious what should be done about it.[4] I will focus on the latter question, although the 2 were not wholly independent. Indeed, for some participants in this debate, such as Wilhelm Hueper, beliefs about what should be done drove beliefs about causation.

Why should today's public health community look back at the National Institutes of Health (NIH) response to cigarettes in historical perspective? Much has been written about the tobacco controversies recently, but the role of the National Cancer Institute (NCI) has been largely overlooked. Richard Kluger's encyclopedic volume, for instance, fails to mention Hueper or Harold Stewart and says little about other NCI scientists or officials during the period studied here.[5] Historians have written about the development of the 1964 surgeon general's report and its subsequent impact,[6] as well as earlier controversies,[7] but considerably less is known about events that took place during the 1950s. Yet the 1950s, when crucial new evidence was coming in, constitute the most significant period for understanding the response of the PHS and the lag between scientific evidence and public health action on tobacco.

First, I will briefly discuss the scientific work on smoking at the NCI during the 1950s, including scientific reviews of the evidence. These studies had a particularly strong role in guiding PHS policy. Additionally, some prominent NCI scientists, including pathologists Hueper and Stewart, were openly skeptical about the link between cigarettes and cancer and outspoken about their opposition to the PHS response. This lack of consensus within the NCI has been cited as an obstacle to a strong early PHS response to tobacco.[8] I will explain why Hueper and Stewart took the position they did and show how their actions provide insight into how NIH scientists viewed their role within the PHS. I will then turn to the development of PHS policy by the surgeon general, setting it in the context of federal biomedical and public health policy at the time. I will explain why the surgeon general was not motivated to take further action. Finally, I will explain how pressure from outside the PHS finally forced a more substantive response in the early 1960s.

Building a Case

In 1950, 3 classic papers were published linking cigarette smoking and lung cancer.[9–11] All 3 studies used the retrospective case–control method, comparing the smoking habits of lung cancer patients with those of a control group without lung cancer, and were cautious about asserting a causal link. There had been work before World War II on the relationship between smoking and health,[12] but it was only during the 1950s that the issue came to the forefront of the American scientific community. However, these 3 studies far from settled the matter. In particular, these retrospective studies had weaknesses that could be addressed only by large prospective studies that followed smokers and nonsmokers over time to explore differences in mortality rates.

Thus began the long, slow process of gathering additional evidence. Numerous studies were undertaken in the 1950s. Within the PHS, biostatisticians and epidemiologists in

At the time of the study, the author was with the DeWitt Stetten, Jr, Museum of Medical Research, National Institutes of Health, Bethesda, Md.

Requests for reprints should be sent to Mark Parascandola, PhD, Cancer Prevention Fellowship Program, National Cancer Institute, 6120 Executive Blvd, Suite T-41, Bethesda, MD 20892 (e-mail: mparas@erols.com).

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the NCI contracted and collaborated with outside investigators to conduct further case–control studies.[13] They also made important contributions to methodology.[14] However, as part of the PHS, they felt they could best contribute by carrying out studies that nongovernment researchers were less likely to do.[15] Thus, they analyzed existing PHS data to test aspects of the cigarette hypothesis.[16] They also contracted with the Census Bureau to collect smoking histories to look for urban–rural differences in smoking habits.[17]

The most important study on smoking to come out of the PHS during the 1950s was Harold Dorn's prospective study of US veterans, initiated in 1953 in cooperation with the Veterans Administration. Questionnaires on tobacco use were sent out in January 1954 to veterans who had signed up for US government life insurance (about 250 000 were returned). When a request for payment of a policy was received, a copy of the death notice was sent to the PHS, which could then contact the hospital for additional information about the cause of death. The study took considerable time. The findings were based on deaths during a 2½-year period, from July 1954 through December 1956. It was not until July 8, 1958, at the Seventh International Cancer Congress in London, that the findings were publicly released.[18]

While the study was under way, NIH Director James Shannon told a congressional appropriations committee that the study would "settle for all time the association or nonassociation of tobacco smoking and cancer of the lung."[19] NCI Field Investigations and Demonstrations Branch head Raymond Kaiser highlighted the study in his regular reports to the National Advisory Cancer Council.[20] The release of the final results would eventually help to prompt the surgeon general's 1959 statement on smoking and health, which will be discussed later.

NCI scientists also provided periodic reviews of the total evidence to date on the smoking and health issue. In 1955, biostatistician Sidney Cutler reviewed the results of 14 retrospective studies along with preliminary reports from 2 major prospective studies (by E. Cuyler Hammond and Daniel Horn of the American Cancer Society and Richard Doll and Bradford Hill in England).[21] Cutler emphasized the consistency of the evidence as a whole and characterized skeptical concerns about "bias" in hospital data as "far fetched."[22] William Haenszel, likewise, emphasized the "interrelationships of findings" and construction of a "chain of evidence."[23]

In 1957 the Study Group on Smoking and Health put out a sort of consensus statement on the issue. The group included members of the American Cancer Society, the American Heart Association, the NCI, and the National Heart Institute. Michael Shimkin was the NCI representative. The group's conclusion was strongly worded: "The sum total of scientific evidence establishes beyond a reasonable doubt that cigarette smoking is a causative factor in the rapidly increasing incidence of human epidermoid carcinoma of the lung." While they stated that more research would be beneficial, they agreed that the evidence was already "adequate for considering the initiation of public health measures" by official and voluntary agencies. However, they stopped short of making specific policy recommendations.[24]

Another review, prepared by NCI researchers Jerome Cornfield, Haenszel, and Shimkin, along with Hammond, Abraham Lilienfeld, and Ernst Wynder, appeared in 1959. Its aim was to update the 1957 statement with new evidence and to respond to some of the persistent skepticism. By this point there were follow-up reports from Hammond and Horn and Doll and Hill, and a third large prospective study, Dorn's study of veterans, had been completed. Cornfield and his coauthors admitted that the questions were not closed to further study, but they urged that "[t]he doctrine that one must never assess what has already been learned until the last possible piece of evidence [is in] would be a novel one for science." The fact that more could be learned did not preclude making judgments, and if it were not for the power of tobacco and the tobacco industry, the evidence "would be generally be regarded as beyond dispute."[25] Shimkin later remarked, in a much-quoted statement, that if spinach were as bad for people as tobacco, it would already have been banned.[26]

Unlikely Bedfellows

There is a history of skepticism toward field-based population studies, in contrast with studies performed in the laboratory, that can be traced back to 19th-century physiologist Claude Bernard.[27] Moreover, the epidemiologic and biostatistical techniques used in the retrospective studies of smoking and lung cancer were relatively new. Skepticism and misunderstanding of this new methodology played an important role in the debate over the health effects of cigarettes.[28] Indeed, pathologists Hueper and Stewart were both skeptical of the new evidence incriminating cigarettes. However, their opposition cannot be explained as merely the skepticism of laboratory scientists toward epidemiology. There were, I will argue, other factors in play.

It should be acknowledged at the start that individuals' personal smoking habits have been cited as motivations for their position in the debate.[29] No doubt this factor had some influence, but we should not place too much importance on it. Of the participants I discuss, some were smokers and others were not. Stewart and Surgeon General Leroy Burney noted the pleasure they derived from pipe smoking. But among the opponents of action against tobacco, there were committed nonsmokers, as well, who believed that cigarettes contributed to other health problems. Hueper, for example, claimed to have given up the habit in 1938 "for reasons of health."[30]

Hueper was chief of the Environmental Cancer Section at the NCI from 1948 until his retirement in 1964. Before arriving at the NCI, he had already had a substantial and tumultuous career in the chemical industry and academic medicine.[31] He had first dismissed cigarette smoking as a cause of lung cancer in 1926,[32] though not so vehemently as he was to do later. As his career developed, he grew more antagonistic toward the chemical industries he believed were responsible for many occupational cancers, and this antagonism was to guide his response to the renewed interest in cigarettes decades later.

In 1950 Hueper was asked to testify as an expert witness for an asbestos brake lining worker from the Pennsylvania Raybestos plant who had developed lung cancer and was suing his employer for compensation.[33] Subsequently, Hueper testified frequently as an expert witness and did so throughout his career.[34] It is noteworthy that he did so, because the PHS discouraged participation in private litigation that did not serve some government interest. In 1958, when plaintiff lawyers H. Alva Brumfield and Melvin Belli requested that PHS scientists testify in a lawsuit brought by a smoker against R. J. Reynolds and the American Tobacco Company, Surgeon General Burney would not permit them to do so.[35] But Hueper was notoriously strong-minded. Thus, subpoenas obtained his courtroom testimony, and he addressed Congress as a private citizen rather than as a PHS official.[36]

Hueper's opposition to the cigarette hypothesis and to the surgeon general's statements on the matter were intimately connected to his involvement in litigation over asbestos and other occupational carcinogens. A defense commonly employed by the asbestos industry was to call attention to the victim's smoking habits and argue that his lung cancer could have followed from his smoking rather than his asbestos exposure.[37]

In 1953 the infamous Tobacco Industry Research Committee was formed by a group of tobacco companies and the public relations firm Hill and Knowlton.[38] Their aim was to promote negative claims against the cigarette hypothesis.[39] Part of their strategy involved identifying sympathetic scientists and encouraging their cooperation with the industry's public relations campaign. When Hueper was to give a paper discussing "the lack of a proven link between lung cancer and smoking" at the Sixth International Cancer Congress in São

Source. DeWitt Stetten, Jr, Museum of Medical Research, Bethesda, Md.

FIGURE 1—Wilhelm C. Hueper, MD.

Paulo, Brazil, in 1954, Hill and Knowlton contacted him. It was agreed that copies of Hueper's paper would be distributed to media representatives and that the paper would be included in a standard public relations packet.

The effort had the desired effect, as the Hueper paper received significant publicity after the conference.[40] An article in *US News and World Report* even highlighted Hueper's claims and reported, "Cigarettes are now gaining support from new studies at the National Cancer Institute."[41]

Historian Christopher Sellers has provided another account of Hueper's position on tobacco, focusing on Hueper's opinions about epidemiology.[42] Hueper indeed claimed that epidemiologic methods were "circumstantial" and lacking in the certainty of the laboratory. Yet such statements have been standard even among epidemiologists; American epidemiologist Wade Hampton Frost had made similar statements 30 years earlier, and Hueper's contemporaries who stood differently on the tobacco issue also made similar claims.[43] These were not critiques of epidemiologic methods, but warnings against the statistical abuses frequent at the time. When Hueper did provide specific criticisms of questionable epidemiologic practices, it was when they worked against plaintiffs in occupational injury cases, providing "false negative information" that might underestimate the hazardous effects of some exposure.[44] And although Hueper was a pathologist, he certainly recognized the value of epidemiologic studies for identifying workplace and environmental hazards.

Yet Hueper was not simply a tobacco company "hired gun." He had turned down a lucrative position in the tobacco industry,[45] and he did not benefit financially from his legal testimony.[46] Instead, he struggled with a genuine conflict of priorities. He was working at a time when workplace hazards were poorly regulated, before the creation of the Environmental Protection Agency and the Occupational Safety and Health Administration, and he faced substantial opposition from various quarters, as historians Robert Proctor and Sellers have recounted.[47] He worried that excessive attention to cigarettes would be at the expense of those subject to occupational carcinogens, to which exposure was nonvoluntary.[48] In the end, it was his strong commitment to one public health problem that largely blinded him to another.

The Cancer Investigator

Harold L. Stewart was at the NCI from its creation in 1937 until his retirement in 1969.[49] From 1939 he was chief of the Laboratory of Pathology and was responsible for training many young pathologists. Stewart was a powerful figure among his colleagues in the field of cancer research, and his opinions on the tobacco debate were not lost on them. Like Hueper, Stewart had performed earlier work on tobacco smoke and lung cancer. In the early 1940s Stewart and other NCI colleagues, including Egon Lorenz and Michael Shimkin, had studied lung cancer in mice.[50] Lorenz and Stewart failed to find any carcinogenic effect of breathing tobacco smoke on mice.[51] This work was interrupted by the war, and Stewart did not return to the problem until the 1950s.

Like Hueper, Stewart's position in the tobacco debate cannot be summed up simply as the skepticism of the laboratory researcher toward human population studies. In fact, he was the pioneer of a new approach to cancer research that came to be called "geographic pathology," which hoped to find clues to causes and targets for control efforts by studying differences in cancer incidence between populations in different geographic regions. In essence, this was epidemiology carried out in collaboration with pathologists. Thus, Stewart actively defended comparative population studies:

> Up to the present, cancer research has focused too sharply on the small laboratory animal, to the neglect of the opportunities that exist for the study of cancer in man in all its varied manifestations. Important contributions to medicine and science have emanated from work based on direct observation of human diseases. It is important to establish and maintain the point that studies of human disease, where nature rather than the investigator has established the experimental conditions, constitute research of the highest order.[52(p324)]

Stewart was also a champion of basic research, but this did not mean he was uninterested in public health. In fact, he believed that basic research, directed by the individual investigator, was ultimately the source of all important public health advances. Stewart expounded his views at length in his 1959 presidential address to the American Association for Cancer Research.[53] It was, he said, the

Source. DeWitt Stetten, Jr, Museum of Medical Research, Bethesda, Md.

FIGURE 2—Harold L. Stewart, MD

"great breakthroughs" in science, like Edward Jenner's smallpox vaccine, that led to revolutions in the prevention of disease. Therefore, the most important people in the fight against cancer—more important than hospitals, drug companies, volunteer agencies, PHS administrators, or any other group—were the research scientists.

Stewart painted a portrait of the researcher as an independent genius for whom inspiration and a brilliant discovery might come at any time. "The only criterion for an investigator is that he wants to do research. It is never possible to know how and when this desire will bring results."[54] Thus, funding such research was a gamble, but Stewart argued that the potential revolutionary payoff far outweighed the funding costs. What wouldn't we pay for another Jenner? He also quoted from debates before Congress on the 1937 National Cancer Institute Act that established the NCI, which Stewart claimed was won on this premise.[55] Thus, to doubt the value of investment in research was to doubt the value and purpose of the NIH and, in turn, the entire biomedical research enterprise.

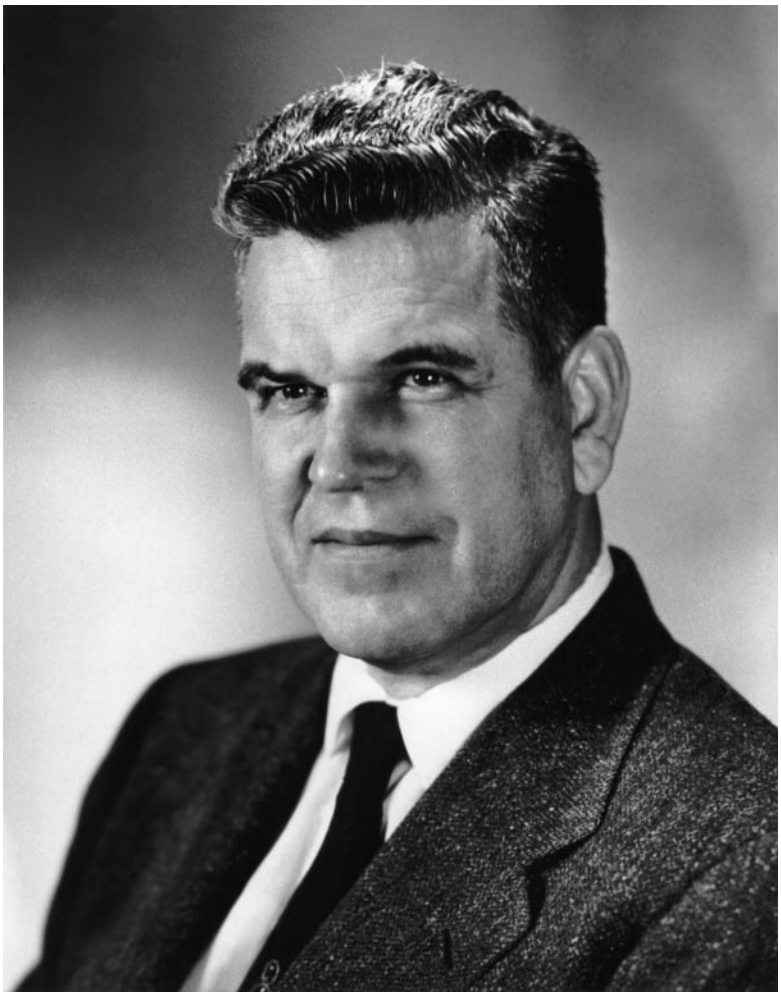
The remaining challenge, then, was to create the most favorable possible conditions for the investigator. Since the real breakthroughs came from the independent researcher, Stewart was opposed to any direction from an advisory committee, director, or surgeon general. "Real breaks in the frontiers of knowledge cannot be forced but come about from the efforts of an unguided research worker." Thus, "[t]he least administration is, of course, the best."[56] Is anarchy the answer, then? He replied in a later interview: "Well, it's an impossible philosophy, anarchy, so what do you do? You strive toward anarchy, and that is less and less government, or the least government you can have and still maintain an organization."[57]

Stewart's remarks were not directed at the smoking issue in particular, but his attitude clashed with the efforts of the surgeon general and some of Stewart's fellow NCI researchers. And while others might not have used such strong words, the views expressed by Stewart were shared by many at the NIH at the time—perhaps most vigorously by Director James Shannon. Under Shannon, the NIH had begun to distance itself from its PHS origins, as will be discussed in the next section. Moreover, the issue of directed research had particular resonance at the NCI during this time, as administrators and Congress had imposed an organized research program in cancer chemotherapy on the Institute during the 1950s.[58]

It should be noted that Stewart was not making a broader political statement here beyond the governing of research. While he complained about those who wanted to meddle with people's enjoyment of tobacco (including his own),[59] he was not opposed to government controls on industry when such controls were warranted. In fact, Stewart testified, along with Hueper, before Congress in support of the Delaney clause, which provided strong government regulation of carcinogens in the food supply. Much later, looking back in a letter to Hueper, he praised the efforts of activists such as Ralph Nader.[60] He also liked to recall words he attributed to Harold Dorn: "Dorn always felt that he did not really work *for* the government, but instead that he worked for Science *in* the government."[61]

Setting PHS Policy

Did the opposition of Hueper and Stewart to the cigarette hypothesis really have a significant effect on PHS policy? The lack of consensus probably slowed development of an official PHS response, as Shimkin and others later claimed.[62] It is important to remember that the PHS (including the NIH) was a much smaller agency then than it is today. At the time, the surgeon general (rather than the secretary of the Department of Health, Education, and Welfare [HEW]) ran the PHS and established its policies. It was only later (as part of a 1968 reorganization) that this authority was shifted to the office of the assistant secretary for health.[63] Indeed, the secretary of HEW was noticeably absent from the PHS efforts on smoking during the 1950s. Additionally, the directors of the NIH and the NCI both reported directly to the surgeon general. Thus, as discussed later in this article, NCI Director John Heller and Surgeon General Burney worked closely together in setting PHS policy on smoking, and Heller knew what his scientists thought about the matter.



Source. National Library of Medicine, Bethesda, Md.

FIGURE 3—John R. Heller, MD, Director of the National Cancer Institute, 1948–1960.

But while the lack of consensus within the NCI was likely an obstacle, it is important not to make too much of it. By 1957 Heller made it clear that "only one or two" scientists in the NCI were not in agreement with the PHS view on the evidence.[64] The setting of PHS policy on smoking in the 1950s had more to do with complex factors that went far beyond the simple skepticism of 2 NCI scientists. Thus, Stewart's views had an influence, but primarily because his ideas about the administration of research were shared by others at the NIH and were reflected at the highest levels of that organization.

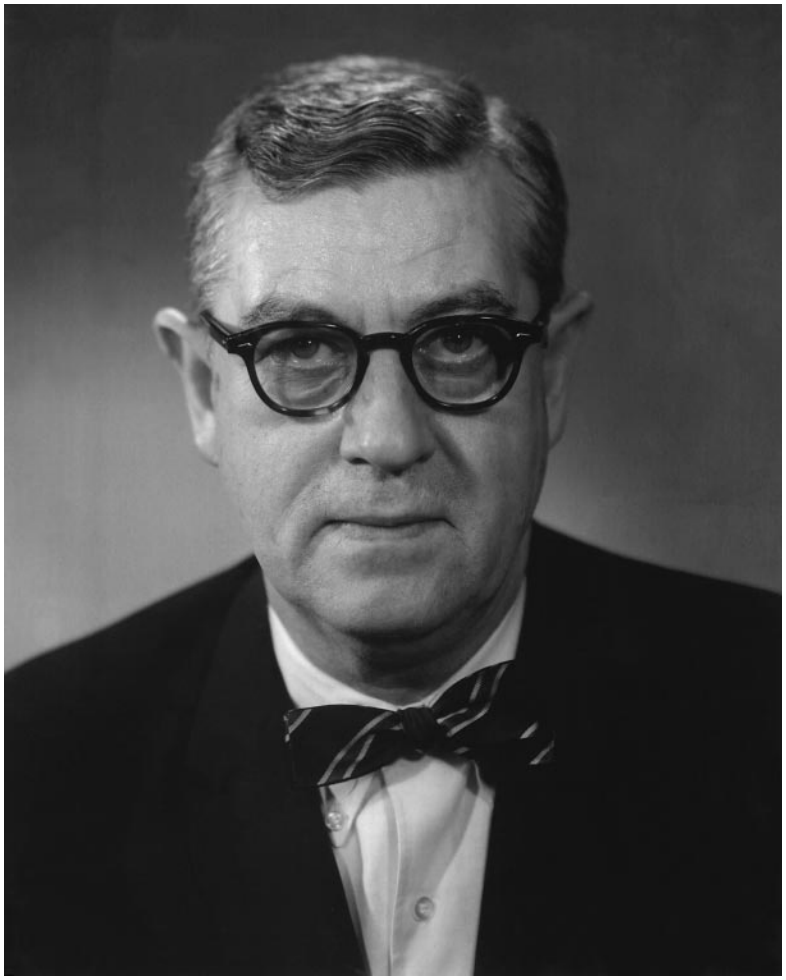
How was PHS policy on cigarettes actually set? One might look first to the Cancer Control Branch of the NCI for a response to the tobacco issue. This branch was supposed to translate research findings into public health strategies. Yet the NCI's cancer control activities had a complex and controversial history.[65]

Raymond Kaiser was chief of the Cancer Control Branch from 1951 to 1957, and he focused on programs designed to aid the physician rather than on communicating directly with the public. The only significant public education programs carried out in this period were films about early detection of cancer (notably a breast self-examination film).[66] Kaiser drew a clear distinction between cancer control (controlling mortality from cancer) and cancer prevention (removing the cause). By the early 1950s, cancer control advocates strongly believed that cancer mortality could be reduced dramatically by early detection.[67] Breast and cervical cancer could practically be eliminated, argued Kaiser.[68] For the causes of cancer, however, "knowledge has been meager" and contested; he noted disagreement over the relationship between cigarette smoking and lung cancer. There were many causes of cancer, and cigarette smoking was, at best, just one. Kaiser supported research into the causes of cancer, but he believed that for the foreseeable future early detection and the development of a general diagnostic test were the best cancer policies because they provided the most promising route to furthering the aims of cancer control.[69]

In March 1954, the Eisenhower administration set forth its first formal science policy, giving basic research priority over applied research and seeking greater administrative efficiency.[70] The following month, results of field tests of the Salk polio vaccine testified to the great advances that could be made in the laboratory. When James Shannon became director of the NIH in August 1955, he had already been working (as associate director) with other NIH leaders to formulate a plan for increasing federal investment in basic research.[71] During the following years, the NIH experienced a period of phenomenal growth. Between 1956 and 1962, total NIH appropriations went from $80 million to $630 million, with the greatest increase going to funding for extramural grants supporting basic research across the country.[72]

Harold Stewart's ideal of unqualified investment in the basic researcher came closest to reality in Shannon's NIH. Unlike his predecessors, Shannon had not come up through the ranks of the PHS; he joined the NIH after working as a scientist and research director at New York University School of Medicine and the Squibb Institute for Medical Research.[73] Because Shannon focused all his energy on building the basic research enterprise, he saw all other activities as a hindrance. Thus, in early 1957 Shannon transferred cancer control out of the NCI to the Bureau of State Services.[74] This move was in line with the prevailing attitude in the PHS at the time that the institutes of the NIH should focus solely on research and that disease control efforts should be pursued elsewhere.[75] For example, the biologics control function of the NIH had been removed to a separate division in 1955 to separate it from basic research work.[76]

In April of that year Shannon also specifically requested of NCI researchers that all articles and talks on environmental cancer, particularly on cancer and tobacco, be cleared with him before release. He noted the increasing public attention these issues were receiving. "I should say that it is my distinct feeling that essentially no new facts have come to light on these subjects recently which warrant independent publication, and that I therefore find little reason



Source. DeWitt Stetten, Jr, Museum of Medical Research, Bethesda, Md.

FIGURE 4—James A. Shannon, MD, Director of the National Institutes of Health, 1955–1968.

for publication of opinions on this subject which can only be relatively inflammatory in nature."[77]

It has been suggested that Shannon's actions toward cancer control were motivated in part by fear that congressional support might be jeopardized by activities that could be viewed as a threat to favored industries.[78] Former NCI director Kenneth Endicott also recalled that pro-tobacco congressmen raised the issue at appropriations time.[79] In fact, while there may have been reason to tread cautiously, there is no evidence that the NIH was seriously in danger of funding cuts during this period of enormous expansion.[80] The topic of cigarettes did come up almost every year at House appropriations hearings. The questions posed to PHS leaders, however, were mainly aimed at clarifying the current state of the scientific evidence linking cigarettes and lung cancer. For example, they asked about news from Dorn's study of veterans, presumably to see whether money going to NCI was bringing concrete results.[81]

The Surgeon General

On Friday, July 12, 1957, Surgeon General Burney released an official statement on smoking and health. He declared that "the Public Health Service feels the weight of the evidence is increasingly pointing in one direction: that excessive cigarette smoking is one of the causative factors in lung cancer."[82] The action made the front page of the *New York Times,* which described it as a shift in PHS policy from a recognition of a statistical association to a suggestion of causation.[83] (This was the first written PHS report on the matter, although the surgeon general had made a public statement in 1954 noting the statistical association.[84]) The statement was sent out, along with the report of the Study Group on Smoking and Health and the latest Hammond and Horn findings, to public health officers of every state and to the American Medical Association. No further action was planned.

At the same time, there was increasing concern by some in government about cigarette advertising. The Federal Trade Commission (FTC) had flirted with regulation of cigarette advertising since the 1930s, going after manufacturers who made unproven health claims about their products. In 1955 the FTC had stepped up its efforts by adopting guidelines that prohibited claims of medical approval for any brand of cigarettes.[85] However, some members of Congress felt that the FTC had not gone far enough. Representative John Blatnik's Legal and Monetary Affairs Subcommittee of the Committee on Government Operations organized hearings to investigate the FTC's response to misleading advertising by the tobacco industry.[86]

Less than 2 weeks after his 1957 statement was released, Burney was testifying with NCI Director Heller in front of Blatnik's subcommittee. They were initially to summarize the public health implications of the findings to date on smoking and lung cancer. However, in light of the recent statement, the discussion turned to the need for a positive warning to the public about the dangers of smoking. What was the PHS doing in this regard? Burney and Heller responded that it was their role to present the facts as they became available to state health agencies and the national media, but not to undertake an organized national educational campaign. "[I]n this country the States are sovereign in matters of health," said Burney.[87] Should the facts be presented to schools across the country to educate children? Heller responded that this would not be appropriate as an official PHS action without the consent and active cooperation of the state health departments: "[W]e as a Federal agency do not indicate the way that health departments should approach their particular problems."[88]

The view that the federal government should meddle as little as possible in state affairs was not unique to the PHS at the time. President Eisenhower had articulated the same sentiment in an address to Congress the previous year: "The important role of the Federal Government is to provide assistance without interference in personal, local, or state responsibilities."[89] Rather, the government should encourage the individual and local initiative characteristic of America, he said, much as Stewart had suggested that it should encourage the unguided laboratory worker.

One questioner (Blatnik's subcommittee counsel Jerome S. Plapinger) pushed further,

however, believing that the surgeon general might be contradicting himself:

> But you said in your published statement "it is confirmed beyond a reasonable doubt." It seems to me you are now saying, "on the one hand," but, "on the other hand." But you have said in the first instance "it is confirmed beyond a reasonable doubt that there is a high degree of statistical association between lung cancer and heavy and prolonged cigarette smoking." That is an unequivocal statement, Dr Burney.

Burney responded again that he did not support any further action. At this time, he said, "we should not go all out on a campaign and put stickers on cigarettes and certain other things."[90] The report that came out of the hearings concluded that the FTC had failed to fulfil its duty by not intervening further. The subcommittee was summarily dissolved and further hearings cancelled—evidence of the strong pro-tobacco forces in Congress.[91]

Lewis Robbins, a career PHS officer, had been brought in to head the bureaucratically relocated Office of Cancer Control in July 1957. At the urging of Michael Shimkin, one of his first efforts was an informational brochure for physicians on smoking and health. This brochure generated substantial opposition from the NIH hierarchy. After numerous drafts, Shannon still objected that it was too simple, and Hueper, Shear, and Stewart opposed the implication that smoking was a cause of lung cancer.

Eventually, the brochure was dropped and a scientific paper summarizing the evidence to date took its place. The paper, too, drafted by Robbins, received countless revisions.[92] It eventually appeared in the *Journal of the American Medical Association* in 1959 as the surgeon general's second statement, citing smoking as "the principle [sic] etiological factor in the increasing incidence of lung cancer." Moreover, the paper concluded that "the individual person's risk of lung cancer can best be reduced by the elimination of smoking."[93] Additionally, 2 exhibits based on the statement were displayed at national and regional medical meetings.[94] But the statement, directed at physicians, received relatively little public attention.

Looking back at both Burney's 1957 statement and his response to congressional questioning, it is tempting to label him a hypocrite. Yet it is important to note here that there was no inconsistency in Burney's position. Even if science linked cigarettes to lung cancer, decisions about how government should respond did not necessarily follow. As I noted at the outset of this article, these are 2 distinct questions. Most important for determining the government's response was the role Burney chose for the PHS. The prevailing notion of "federalism" made the relationship between the PHS and state health departments exceedingly complicated. Thus, while Heller, Burney, and Robbins felt that the evidence was sufficient to implicate smoking, they were reluctant to take further action because of how they understood their role as PHS leaders.

The Pressure Builds

In the early 1960s, the new administration's health leaders initially showed little enthusiasm for further action on tobacco. But on June 1, 1961, the American Cancer Society, the American Heart Association, the American Public Health Association, and the National Tuberculosis Association sent a joint letter to President Kennedy asking for the appointment of a special commission to examine the responsibilities of government and business in relation to smoking and health.[95]

The White House sought the advice of HEW administrators. New NCI director Kenneth Endicott and other NIH leaders responded that there was disagreement about exactly how much of the lung cancer burden was due to smoking; thus, the value of smoking reduction efforts would be unknown.[96] Ivan Nestingen, undersecretary of HEW, advised that, in light of this uncertainty, the government should simply continue to present new information as it developed, with no special commission being appointed.[97] Endicott later recalled that Surgeon General Luther Terry was also initially reluctant to take action beyond that of his predecessor.[98] Moreover, the FTC was reluctant to take further action on labeling and advertising until it had stronger support from the PHS.[99]

However, it was not only voluntary health agencies that were concerned. Public pressure had been mounting, following a decade of news stories and scientific and public health announcements, for a more substantial response to the tobacco problem. During the 1950s a number of bills were introduced in Congress to control advertising, fund anti-smoking programs in schools, and mandate warning labels on cigarettes. But these efforts never got off the ground because of the strength of pro-tobacco forces in Congress.[100] This situation did not change dramatically in the early 1960s, but a growing number of bills were being introduced[101] and administrators were under increasing pressure at appropriations time.[102]

It took a question to an unprepared President Kennedy at a press conference on May 23, 1962, to give the final push to the formation of the Surgeon General's Advisory Committee on Smoking and Health.[103] Two weeks after the press conference, Surgeon General Terry announced that he would appoint a committee of scientific experts to review the latest evidence.[104]

Yet another scientific review was not exactly what the voluntary health agencies had asked for. Some saw the formation of the advisory committee as simply another tactic to avoid taking public health action.[105] Even after the report was completed, the secretary of HEW and the surgeon general initially failed to give strong support to the labeling legislation that followed (HEW Secretary Anthony Celebrezze said that he did not believe that it was "the proper role of the Federal government to tell citizens to stop smoking").[106] Congress was also weak in its initial response to the report.[107]

Conclusion

1964 is often considered the turning point in the campaign against tobacco. It is the 1964 surgeon general's report that is generally credited with establishing cigarette smoking as the major cause of lung cancer. But, we might ask, why 1964? Why not 1957, with the first surgeon general's statement? Why not the summer of 1958, when the results of Dorn's study were released? Why not 1959, when the surgeon general's statement made it clear that stopping smoking was the best means of reducing one's lung cancer risk?

Although new evidence had been gathered between 1959 and 1964, there were no major revelations regarding lung cancer in the 1964 report. Indeed, the advisory committee relied on much the same evidence that Burney had used for his 1959 statement. Most of the retrospective studies cited were from before 1959, and preliminary results from additional prospective studies primarily served to confirm earlier findings.[108] Yet the report was substantially different from earlier statements for other reasons.

Burney's statements during the 1950s were presented as the "opinions" of the surgeon general and the PHS. They were thoughtful and informed and based on the input of a number of experts, but there was no claim that they represented an objective scientific assessment of the evidence. The opinions of the PHS differed, of course, from those of the Tobacco Industry Research Committee, but Heller explained at the time that "fundamentally it is a difference in interpretation."[109]

In contrast, Surgeon General Terry had no involvement in the deliberations or conclusions of the Surgeon General's Advisory Committee on Smoking and Health. He intentionally appointed scientists who had expressed no prior opinion on the subject, and the committee's work proceeded under conditions of strict secrecy. The effort was intended to be a scientific review conducted by neutral experts, free of political influence.[110] Terry also effectively used the media to gain substantial attention for the committee's conclusions.[111]

Moreover, the same forces that came together to push for an expert committee helped

to bring about substantive changes after the release of the committee's report. The eventual cooperation of HEW, the FTC, and Congress in the face of increasing public pressure finally led to public health action. It was the prior lack of such pressure that had prevented an earlier response.

Thus, it was not the content of the surgeon general's report or the meeting of some evidentiary threshold that finally led to change. Nor, on the other hand, was it the case that science had no role here, for without the release of scientific findings and statements about the evidence during the 1950s, public response to the issue would likely have been even slower. But there were numerous other factors affecting how that scientific evidence was translated into a coherent public health strategy, and those factors finally tipped the balance in the direction of action. □

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