on certain issues if called upon. It has become apparent to AFCR officers that there are times when rapid action is called for, and for this they set up what they call a "telephone cascade," rather like an electronic chain letter. It is something other, nonscientific, groups use to raise money, for example. Melmon suggests it could be used to let members of Congress and the Administration know in short order what the AFCR thinks about particular issues.

Intended as a special, emergency-only measure, the telephone cascade, which can be activated only by the president, has been used twice. Several months ago, word got out that Melvin Laird, then an adviser to President Nixon, was trying to get Congress to tack an amendment on an appropriations bill that would make it impossible for anyone who had gone to court to challenge the President's 1973 impoundments of funds from getting support in 1974. First, Melmon verified the situation. Then, convinced it was so, he initiated the telephone cascade. Within hours, more than 100 protests had been phoned to Laird's office and to members of relevant congressional committees. The AFCR likes to think that its intervention was at least partially responsible for the fact that the Laird suggestion was dropped.

The second time the AFCR used the cascade was to try to persuade the Senate to keep a proposed amendment to establish an advisory panel for biomedical research that would report directly to the White House, as does the President's Cancer Panel (see *Science*, 5 April). Not everyone agrees that it is a workable idea because one cannot force Nixon to take advice, but the AFCR sees it as something that would be in the interests of biomedical research. (There is, as yet, no final congressional action on the amendment.)

The AFCR has also decided to try to justify its concerns, particularly about training grants, in formal position papers intended to spell out the reasons for federal support of young researchers in certain high-priority areas, which were identified in 1971 by the National Institute of General Medical Sciences. They include the epidemiology of cardiovascular disease, clinical pharmacology, lung diseases, and human genetics. These papers are being serialized as a start in the AFCR's own journal, *Clinical Research*, though AFCR officers realize they need wider circulation.

Whether they will be convincing is debatable. Each stresses the importance of the field it is about and says that we need more well-trained people to solve unsolved problems in biology, but none really tackles the question of why training grants are the best or only way to do it.

The AFCR's involvement in policy issues is probably not going to save research or training programs from the hands of budget-cutters nor solve most of the problems that exist or can be anticipated in academic medicine. On the other hand, its formal, organized efforts to get a place for itself in the decision-making process seem to be a step ahead. Just having identifiable AFCR representatives at each academic center is helpful in itself, Melmon believes. "When issues come up, our members often feel that they have valuable information to contribute to a discussion but too frequently have had no way of getting it out. Now they can do something more than just sit and stew."—BARBARA J. CULLITON

Crib Death: Foremost Baby Killer Long Ignored by Medical Research

Crib death is the leading cause of mortality among infants more than a month old. In the United States alone it kills around 10,000 babies a year. Yet until recently crib death has suffered from a curious degree of neglect on the part of the medical research community. Researchers have found it intellectually null, doctors have been so little interested that the precise incidence of the disease is still uncertain, and the National Institutes of Health (NIH) has devoted typically $75,000 a year, less than 0.01 percent of its total resources, to direct research on the problem.

The disease has recently become rather more fashionable. Congress 2 weeks ago passed a bill to set up regional diagnostic centers and the NIH's National Institute of Child Health and Human Development now puts more than half a million dollars a year into crib death research. But the long neglect of so important a disease raises the question of how, and in whose interest, medical research priorities are set.

The striking feature of crib death, known otherwise as sudden infant death syndrome or SIDS, is that it attacks without warning. In the typical case the baby is put to bed, apparently in perfect health, and is found the next morning to have died in its sleep. The shock of the child's death is only the first of a chain of calamities the parents may have to bear.

They may blame themselves for the death, wondering what they could possibly have done wrong. So may the doctor, neighbors, coroner, and many others who have not learned to distinguish sudden infant death syndrome from a case of neglect or child abuse. It is not uncommon for parents to notify the authorities and receive not comfort but interrogation on the suspicion of having killed their child. In several cases parents have spent the night following their infant's death separated and in jail. In 1971 a young crib death couple from the Bronx, Roy and Evelyn Williams, were imprisoned for 6 months (the judge dismissed the charges at the conclusion of the prosecution's case).

Ignorance of crib death among doctors and coroners is so widespread that, even if an autopsy is performed, parents may not be told the true cause of death. According to a nationwide survey conducted in 1972 by Abraham B. Bergman of the Children's Orthopedic Hospital, Seattle, only half of 421 parents interviewed were correctly informed that their babies had died of crib death. Families are more likely to be told if they are white and rich.

Table 1. Research grants on SIDS awarded by the NICHD.

Fiscal year	Total SIDS and related areas	Direct SIDS only	NICHD total budget
1964	$1,115,000	$ 11,000	$ 29,500,000
1965	1,634,000	18,000	29,340,000
1966	1,976,000	76,000	37,345,000
1967	2,130,000	67,000	52,122,000
1968	2,060,000	81,000	61,000,000
1969	2,085,000	87,000	66,621,000
1970	1,732,000	34,000	75,700,000
1971	1,804,000	46,000	79,589,000
1972	3,500,000	420,000	92,030,000
1973	4,100,000	604,000	127,265,000

Black parents are four times as likely to learn that their baby had "suffocated." "The people who needed the help most were least apt to receive it," Bergman concludes.

"Why are we in such a rudimentary level of comprehension when this disease takes so many lives," Senator Walter F. Mondale (D–Minn.) asked at a 1972 Senate hearing on crib death. "I would submit that there is no satisfying answer to a question like that and I share your concern," Mondale was told by HEW assistant secretary for health and scientific affairs Merlin K. Duval. The answer may not be satisfying, but part of it was provided in Duval's own testimony. "There is a paucity of scientists interested in the phenomenon," he said. In the past 9 years the relevant government agency, the National Institute of Child Health and Human Development (NICHD), had received only 13 applications for research support from the whole scientific community, of which only five were of sufficient merit to fund. Duval also referred to the lack of agreement among the medical profession on even the diagnosis of sudden infant death syndrome. The annual number of deaths, he said, "may greatly exceed 10,000 inasmuch as the terminology problem is such that we can't get a firm handhold on the actual incidence."

A principal reason for the lack of interest among doctors and scientists, according to longtime students of crib death, has to do with the nature of the disease. The baby's body usually goes straight from crib to morgue and is never seen inside a medical school. "The problem simply has been that scientists capable of performing quality research work, for the most part, have remained ignorant about the very existence of SIDS and have not turned their attention to its solution," says Bergman. Clara Raven, a former Detroit medical examiner who began studying the disease in 1959, found in her efforts to obtain assistance that the local medical schools "showed no concern or interest in basic research on crib deaths."

Another longtime researcher puts it more bluntly. "The whole darned medical profession turned its back on crib death," she says. "The journals were loath to publish articles, the doctors cold-shouldered it. The reason is that the people who died were unimportant. They weren't the president of General Motors, just babies known only to their parents. So it didn't become an academic problem or a problem to the doctor. It was a coroner's problem, and the coroners were mildly interested but not very much."

Specialists often tend to believe that too little attention is paid to their subject, but the complaints of those who work with crib death are justified at least to the extent that until the last few years the disease has evidently not been a top research priority. In the 8 years up to 1971, the NICHD devoted a total of $420,000 to direct research on crib death (see Table 1). (Research on "related areas," which the institute says should also be taken into account, includes projects such as "clinical and laboratory studies on rubella," "surfactant and hyaline membrane disease," "neurological development—infants of diabetic mothers," and "circulatory and cellular studies on runted fetal sheep.")

Lack of Scientific Interest

NICHD officials explain that the problem has been lack of interest among scientists. "The money has been there all along, but we didn't get as many applications as we would have liked," says Gilbert L. Woodside, director of extramural programs and now acting director of the NICHD.

Granted the lack of scientific interest in the problem, the institute's record on crib death would seem to be creditable. It sponsored international conferences on crib death in 1963 and 1969, and stepped up its activities in 1971 by holding a series of workshops on particular aspects of the disease. Several scientists invited to the workshops have since made important contributions to the study of the disease. The NICHD even resorted to placing advertisements in 30 scientific journals. Last year the institute received 23 research applications, as many as in all previous years, but, avoiding the temptation to throw money at the problem in cancer style, it funded only five. Annual research support, nevertheless, has passed the half million dollar mark. Researchers in the field say that there is now no good idea going unsupported for lack of funds.

The very success of the NICHD in drumming up scientific interest raises the question of whether this could not have been done earlier. "The institute should have taken the initiative in contracting for scientific work that needed to be done instead of passively waiting for grant applications to come in," says Bergman of the Seattle Children's Orthopedic Hospital.

NICHD director Woodside says that research interest could not have been stimulated earlier because of the scientific difficulty of the problem. "With a syndrome like SIDS for which the basic mechanisms are simply not known, it has been very difficult for scientists to know where to begin. Only recently have some good exciting leads been developing," Woodside told *Science*.

Exciting leads have been developing, but often of a kind that might be expected when an unexplored field is looked at for the first time. Marie A. Valdes-Dapena of St. Christopher's Hospital for Children, Philadelphia, a leading researcher whose interest in crib death goes back more than 15 years, says she does not see why several important recent advances could not have been made years ago. (Of the significant advances she cites, one is the observation by Alfred Steinschneider of the State University of New York, Syracuse, that children who die of crib death are prone to periods of not breathing in their sleep. Another is the finding by Richard L. Naeye of the Hershey Medical Center that crib death babies have more smooth muscle in their pulmonary arteries, suggesting that for some time before death they have suffered from a lack of oxygen. A third discovery, also by Naeye, is that crib death infants have more brown fat around the adrenal glands than normal babies.)

Another indication that the field is still in a somewhat rudimentary state is the profusion of different theories about the cause of crib death. The scarcity of basic facts about crib death makes it a free-fire zone for armchair theorists. Much press coverage of crib death reflects their activity, not solid research.

Even good theories about crib death are hard to test. An ingenious hypothesis put forward by R. C. Reisinger, a vet at the National Cancer Institute, holds that crib death is caused by the absorption of *Escherichia coli* endotoxin from the gut, particularly of bottle-fed infants, since cow's milk is more conducive to *E. coli* growth than human milk. Reisinger's is an excellent hypothesis in the Popperian sense of being easily refutable but, says its author, it has not been refuted so far.

That there has been a turnabout on priorities for crib death research is due in large measure, it seems, not so much to the awakened interest or conscience of medical researchers, but to vigorous efforts by parents of crib death children. Outraged at medical ignorance of the disease and at being treated like criminals, parents have formed counseling organizations such as the National Foundation for Sudden Infant Death and the International Guild for Infant Survival. Richard H. Raring, a crib death father and cogent letter writer, was one of several parents whose letters to the Senate subcommittee on children and youth prompted the hearings held by Senator Mondale in January 1972 and September 1973. The subcommittee subsequently introduced legislation to provide regional centers for conducting autopsies and counseling parents. The bill passed Congress last month and awaits the President's signature or veto.

NICHD officials say their crib death research program was stepped up in 1971 because of advances in the state of the art. Crib death researchers attribute the government's new-found interest primarily to parent pressure. "There is no doubt that the lay groups have had an influence," says Valdes-Dapena. "They put pressure on Congress, Congress pushed the NICHD, and people began to realize the magnitude of the situation." Even the conference sponsored by the NICHD in Seattle in 1963 came about "because parents raised hell, not because we [in Seattle] are smarter doctors," says Bergman.

The present research program in crib death is in several ways a success for the system. The government eventually responded to pressure from parents, and the NICHD now has a vigorous program that supports many of the best researchers in the field. But should it be necessary for the stimulus to have come from parents? If an international conference in 1963 had decided that 10,000 calves a year were being killed by a specific disease, it is hard to imagine that the agricultural research community would not immediately have assigned a dozen laboratories to work on the problem and would have settled the chief anatomical facts shortly thereafter. Priorities seem to be set differently in the medical research world. HEW officials may be right in saying the time was not ripe 10 years ago to actively encourage research in the field. But that, since it was not tried, cannot be certain.—NICHOLAS WADE

Medical Education: Those Sexist Putdowns May Be Illegal

It is a truism among students that medical school can be hell, but for women in particular it offers its own forms of torture. In the past, women enrolled in medical schools have been vastly outnumbered by men; they have been mistaken for nurses and lower-ranking hospital staff and the frequent butt of the off-color jokes with which medical school professors like to season their lectures.

But in the last 2 or 3 years more and more women have been applying to and have been accepted at medical school (in 1964, 7.72 percent of all medical school students were women; in 1971, 10.9 percent were women; and during the current academic year the number is estimated at 15.4 percent, according to American Medical Association analysts). Moreover, observers and counselors of today's female medical student say that fewer and fewer of them are willing to accept what they perceive as the men's club ambience of medical school.

The result has been something of a feminist-inspired counteroffensive in medical schools across the country, as is illustrated by a recent report: *Why Would a Girl Go into Medicine? Medical Education in the United States: A Guide for Women.* The report, after being privately published last November, has been circulating in something of an underground manner among medical school counselors, deans, and interested feminists. *Why Would A Girl* tries to give the prospective woman applicant some notion of what she is in for in medical school, and how today's feminist-oriented students are coping, by reporting on the results of a survey of 146 female medical students at 41 medical schools across the country from Harvard to Loma Linda. The respondents' comments are interspersed with those of the author, Margaret A. Campbell, a pseudonym for a prominent woman in academic medicine who, according to the feminist author Barbara Seaman, has chosen to conceal her identity because of concern about the kind of male backlash which her report describes.*

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* M. A. Campbell, *Why Would a Girl Go Into Medicine? Medical Education in the United States: A Guide for Women* (privately published, 1973). Available through Ann O'Shea, 320 West End Avenue, Apt. 6B, New York 10023, $2.00. O'Shea is Betty Friedan's administrative assistant and Seaman is the author of *Free and Female* (Coward, McCann & Geoghegan, New York, 1972)