health aides

Aides—Pain or Panacea?

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THE rapid mushrooming of health aides in a variety of programs throughout the country has sparked the interest of many health agencies in adding this classification of personnel to their staffs. Excitement grows as professionals who have worked with aides recount the multiple benefits which they and their agencies have reaped from this experience. Indeed, one sometimes gets the impression that health aides are a miraculous new cure-all for insufficient health manpower, underutilization of health services, inadequate communication with the public, and a number of other agency ills. Small wonder, then, that so many health programs are turning to this apparent panacea and that so many more are eager to obtain it without delay.

Not all health agencies, however, are quite so ready to leap upon the health aide bandwagon. Might not aides be like other cure-alls for which publicity surpasses performance? Might not their employment have some unforeseen side effects for the agency, the agency staff, the community, or the aides themselves? Further reservations are introduced by certain theoretical arguments opposing the aide concept as well as by reports of problems which some agencies employing aides have encountered. Warnings that the effectiveness of aides is overrated, that they create more problems than they solve, and that supporting them requires an inordinate portion of an agency's resources thus suggest that aides are something of a pain and not at all a panacea.

This leaves the agency contemplating the employment of health aides in a most confusing position. While glowing reports about the value of aides and readily available project funds tempt the agency to hire some immediately, skepticism, doubts, and negative experiences of other agencies make it hesitate to get involved. To complicate the problem, so many different considerations enter into the arguments pro and con aides that the agency hardly knows how to begin searching out the answers to its many questions. Yet search them out it must in order to have some rationale for deciding whether aides can in fact help to achieve agency goals without introducing a whole new set of agency problems.

The Problem of Defining Health Aide

An obvious starting point would be with the definition of health aide, yet no widely accepted definition is available. References to aides as "indigenous health workers" or "subprofessionals" are frequently greeted with snorts of protest. Identifying aides with certain health disciplines or specialized programs has done little to clarify the issue and may even have compounded it. Substituting titles such as "neighborhood health worker," "health guide," "health hostess," or "community representative" may help to define aide more precisely within agencies, but the number of these substitutes in current use indicates a lack of general acceptability for any one of them. This difficulty

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in finding a satisfactory definition suggests that "health aide" may mean very different things to different people.

Such a situation is not surprising for several reasons, including the history of the participation of aides in health programs. Although aides have long been a part of village-level work in other countries, notably India, only recently have they been employed in this country to perform other than routine, institutionalized functions. This background together with the fact that U.S. aides were first used in Navajo Indian health programs may have left many with the impression that such personnel are appropriately employed only as lower echelon assistants to professional health workers, except in exotic and impoverished situations where adequate numbers of professionals cannot be obtained.

At the same time, however, the community development experience abroad alerted some workers to the value of aides in approaching people and their problems holistically, while the Navajo venture demonstrated the potential of aides for improving cross-cultural communication. Thus, in this decade a new breed of aides was introduced into local health agencies. Their contributions to programs for migrant farmworkers in the early sixties brought such dramatic results that aides were rapidly incorporated into a variety of health programs across the nation. Differences in definition therefore were bound to arise as those responsible for program development experimented with new uses of aides and adapted the concept to meet unique program demands.

The looseness with which the word "aide" is used in the English language may also have contributed to differences in definition. While the word generally suggests one who gives assistance, the conditions under which it is given and the persons to whom it is offered can vary enormously. Hospital and military aides, for example, can hardly be compared in terms of education, expertise, or responsibility, not to mention status, salary, and opportunities for advancement. Perhaps many health professionals, because of their hospital backgrounds, think of health aides as flunkies at the low end of the totem pole. Nevertheless, since these aides are doing everything from changing papers on scales in well-baby clinics to collecting data for research, it is clear that not all health workers share the same concept.

Three Concepts of the Health Aide

Analysis of health aide functions suggests that three quite different concepts of the aide are prevalent in public health practice today. Each concept is based on different assumptions and suggests a different rationale for employing aides. Furthermore, each has different implications for the kind of people who should be recruited, their training and supervision, their salaries, and their place in an agency's structure. Failure to distinguish among these concepts therefore could lead to confusion and disagreement, and, in fact, is probably a major source of difficulty underlying the problems which some agencies have encountered with aides.

The routine aide. The traditional type of lower echelon assistant long used in health programs performs routine functions which require little specialized knowledge or skill, but which are necessary for an agency's day-to-day operation. Almost any health worker could perform these functions, but since they tend to be boring and laborious, professionals usually shun them. In addition, use of a professional's time for this largely mechanical work would be wasteful of an agency's resources.

The rationale for employing routine aides is thus to extend health manpower by relieving professional staff for higher level activities. The agency seeking this type of worker therefore assumes that aides can carry out certain functions adequately, that professional staff will spend less time in recruiting, training, and supervising aides than they would in performing the duties assigned them, and that using available funds to employ aides will extend services more than would using the same money to buy additional professional time.

Routine aides can be considered as extra arms and legs for the agency in that the work they do, as well as when and how they do it, is primarily determined by professional staff. Intellectual and educational qualifications for these aides are likely to be minimal, both because few special skills are necessary and because only low-level salaries can be paid if health man-

power truly is to be extended. Furthermore, low standards in these respects are even desirable because aides with too much education or intelligence might soon become disenchanted with the routine work and leave it for better prospects, thus necessitating costly repetition of recruitment and training procedures.

Both training and supervision of routine aides are likely to be task-specific and to follow fairly well-established guidelines. The standardized tasks these aides are hired to perform, the low salaries they are paid, and their lack of specialized skills further imply that they are likely to occupy a very low position in the status hierarchy of the agency.

The program aide. The concept currently sweeping the country is that of the aide who performs a group of functions not essential to the agency's minimum operation, but helpful in delivering agency services. These might be called program functions in that they help the agency to achieve specific program objectives, usually through improving communications with some particular group that the agency wishes to reach with its services.

Performance of these program functions demands certain specialized competencies which may be acquired in part through training, but also involved are understandings and skills developed over so long a period of time and through such complex processes that they cannot readily be taught. Not all professionals, then, can carry out these functions, and insofar as professional training inculcates certain patterns of thinking and acting, it may even be a handicap.

The rationale for employing program aides is thus to improve utilization of health services by certain segments of the public which the agency heretofore has been unable to reach adequately through its programs. This rationale is based on a series of closely related assumptions rooted in behavioral science theory which, while too complex to discuss fully here, in sum suggest that social, environmental, and ethnic differences produce different subcultures within American society. Since such subcultures generate unique lifestyles which can never totally be understood by outsiders, individuals from the subculture of public health have neither the understanding nor the ability to communicate optimally with individuals from other subcultures. This communications gap can be bridged, however, by recruiting aides from various subcultures to carry the agency's messages in a specific subculture's terms. Moreover, through the experience of working with these aides, professional health staff will gain new knowledge so that, in time, it too will be able to communicate more effectively with those it wants to reach.

Aides who are recruited to perform program functions obviously must be members of the subcultures which the agency is trying to reach with its programs. Furthermore, they must be able to communicate effectively both within these subcultures and with public health workers. While intelligence, interest in people, ability to develop good interpersonal relationships, and capacity to treat confidential information with respect and judgment are highly desirable qualities in such aides, extensive formal education may be considered a hindrance in that this is thought to create so much social distance between an individual and his subculture that he no longer is really a member of it.

Since the functions of program aides are intimately related to the agency's work, but creative in nature, their training needs are more difficult to identify and complex to meet. Many of these needs, in fact, must be met through supervision on a careful, continuing, and individualized basis. As with routine aides, professional staff still largely determines what these aides should do, but there is likely to be more freedom concerning when they do it, and much of the "how" by necessity is left to the judgment of the aides themselves.

The usual criteria for determining both salary and status in a health agency are difficult to apply to program aides, for while they lack professional training and public health experience, it is precisely these lacks which make them valuable to the agency. The specialized communications skills demanded of these aides, as well as the program responsibilities they carry, suggest that minimum salaries are inappropriate. Likewise, the functions they perform indicate that they should be accorded a staff rather than a line position in the agency's structure, and they should by no means be at the bottom of the agency's totem pole.

The policy aide. Functions of policy aides concern neither the completion of routine tasks nor the achievement of specific program objectives as much as they relate to the overall direction of the agency. These functions include defining agency goals, setting agency priorities, and planning and evaluating agency programs. While the specialized medical, administrative, and behavioral knowledge of professional staff is indispensable in carrying out these functions, more and more health workers are recognizing that if the health agency is truly to serve the community, the community itself must participate to a greater extent than ever before in deciding how it can best be served. One way to assure this participation, especially from communities where social and financial barriers have frequently prevented involvement in health planning, is to employ community representatives as health aides. Although this concept of the aide is still relatively rare, it promises to become more common as health agencies increasingly accept the need to consider community needs, goals, preferences, and attitudes in establishing policies and determining services.

The rationale for employing policy aides is thus not simply to improve the utilization of existing agency services, but to improve the services themselves. In employing aides to perform these functions, then, the agency assumes that its services can and should be improved and that aides can help in this task. The additional assumptions underlying this rationale are much like those related to program aides, but they go a step further. It seems reasonable to assume that if messages framed by health workers are difficult for members of certain subcultures to understand, then services structured by these same workers might also be difficult to accept. If, however, representatives of the people for whom the services are intended have a voice in planning and evaluating them, the services should be both better understood and accepted. In addition, as these representatives participate in health decision making, they should become increasingly able to help the community understand the multiple complex factors which must be considered in health planning.

Policy aides must be effective and articulate advocates of the people whom they represent. They should have a broad understanding of societal problems and the health agency's potential for helping to solve these problems. They should be able to cope with many-faceted considerations and various alternatives in decision making. Above all, they must have faith that both the agency and the community share the long-range goal of improving health services, even when conflicts develop over short-term goals and means of achieving them.

Policy aides, then, join with professional staff in determining the what, when, and how of agency services, including the planning of their own specific responsibilities. These aides are likely to need little initial training other than orientation to the agency. Additional training sessions, however, especially in methods of group problem solving, might be planned in conjunction with other staff members. Staff supervision of policy aides probably should be minimal in order to avoid biasing the community data they bring to planning.

Obviously, persons performing policy functions should enjoy highest agency status. Since such persons are traditionally volunteer board members, elected public officials, or key agency administrators, however, no precedent exists for determining the salary that aides performing such functions should receive. At a minimum, expenses of agency participation should be reimbursed. Additional salary depends on conceptualization of community representation in policy making as a paid or volunteer function.

Difficulties From Confusion in Concept

Many misunderstandings could arise when people who assume they are discussing the same concept of health aide have different types of aides in mind. While some misunderstandings may seem trivial, they represent an initial breakdown in communication about the concept of aide which can lead to further problems. Other misunderstandings may be serious enough in themselves to make the aides wonder why they ever became involved with the agency and to make the agency conclude that aides are indeed more pain than panacea.

Confusion over terminology. Confusion in the concept of health aide is likely responsible for much of the controversy over appropriate terminology, and, conversely, confusion in terminology has contributed to confusion in concept.

Reference to all health aides as either indigenous health workers or subprofessionals tends to perpetuate the myth that all health aides share similar characteristics and perform similar functions. Moreover, such usage is clearly inaccurate.

Since routine aides need not reside in the community in which they work, calling them indigenous is obviously misleading. Such aides, however, might legitimately be called "subprofessional" in that they work under the close supervision of professionals and in a subordinate relationship to them. The situation is reversed for program and policy aides. Since "being from the community" is essential to the performance of program and policy aide functions, these aides may appropriately be called "indigenous" in the dictionary sense. The propriety of calling them "subprofessionals" can be questioned, however, for like professionals these aides must possess specialized skills and knowledge which they can apply with discretion and judgment in helping relationships. Nevertheless, not all who have fought hard for high professional standards agree that program and policy aides meet professional criteria.

Deeper issues than semantics are often involved, however, in the debate over the terminology which should be used to describe health aides. Insistence on calling program and policy aides "subprofessional" can be interpreted as an attempt to relegate them to subordinate relationships and menial tasks. Similarly, the term "indigenous" may seem derogatory to the extent that it identifies aides with a group whom the agency has negatively stereotyped. Therefore, although disagreement over terminology may stem from confusion in the concept of aide as well as from some honest differences of opinion, such disagreements can lead to more serious conflicts when suspicions develop that certain usage really reflects an underlying hostility toward health aides and a rejection of the functions they are performing.

Confusion over qualifications considered in recruitment. Arguments over the qualifications which are important in recruitment of aides often can be traced to failure to understand the different assumptions related to different concepts of the aide. A common misconception is that health aides must be recruited from poverty groups. This idea may have been reinforced by confusing the words "indigent" and "indigenous," as well as by the fact that most health aides of all types are recruited from the poor, although for different reasons. Most routine aides come from lower socioeconomic classes because the poor provide health agencies with a ready pool of cheap manpower. Program and policy aides, however, also are frequently recruited from the poor both because many health problems are associated with poverty and because health agencies traditionally have had difficulty in reaching the poor with health services. In addition, many aides are being hired from among the poor in response to the new careers program promoted by the Federal Government.

Since the lack of education, frequently related to poverty, limits the jobs available to the poor, routine aides may continue to be recruited from lower income groups, although this is not a necessary qualification for the performance of routine functions. There is no reason, however, to restrict the concept of the indigenous health worker to the "culture of poverty." Program and policy aides might well be recruited to improve communications with and services to a number of other subcultures that public health workers have found hard to reach. In such an event, being a teenager, a drug user, a hippie, an alcoholic, a prostitute, or elderly might be pertinent qualifications to consider in recruitment, but level of income probably would no longer be relevant.

Similarly, other qualifications such as race, age, sex, or marital status can either be justified as important in recruitment or dismissed as nonessential by examining the functions aides are to perform. Race, for example, is clearly irrelevant to the performance of routine functions except insofar as equal opportunity in employment should be available to all levels of personnel. Race, on the other hand, may be an important consideration in recruiting program and policy aides when this is a distinguishing characteristic of a subculture which the agency wishes these aides to represent. Nevertheless, the demand for fair employment practices has recently led many agencies to make minority group membership a requirement for aide positions, regardless of the functions these aides are to perform.

When qualifications for recruitment are set

without reference to the work that aides will do, some potentially good applicants may be rejected merely because they lack some unimportant characteristic. Furthermore, this practice can backfire because the agency lacks an adequate rationale to explain its employment policies. Since aides are quick to recognize the qualifications needed to carry out the duties they are assigned, minority group members who are hired because of race alone may suspect that the agency wants them merely as "black or brown window dressing." Moreover, if these aides are assigned only routine duties, they may interpret their low-level tasks and lack of promotional opportunities as evidence of agency discrimination. Even aides assigned program and policy functions who otherwise receive routine aide treatment may draw the same conclusions. Once again, then, confusion in the concept of aide can lead to more serious problems, including accusations of unfair agency practices.

Differing expectations for role and status of aides. If an agency intending to employ health aides does not resolve differences in concept before recruiting and hiring personnel, then different expectations for the role and status of aides may result in dissension and disagreement on other matters once they are on the job. This is especially true because no single health aide is likely to perform functions related to just one of the three concepts distinguished here. All health workers pitch in at one time or another to help with routine work; all sometimes shoulder extra responsibilities not in their job descriptions. Furthermore, work may accomplish more than one objective, and the same work may be done for different reasons.

Clinic registration, for example, might be carried out by a routine aide so that nurses could have more time for patient counseling, while a program aide might do this mainly to welcome patients seen in the community and to provide them with a feeling of social support for the health action they are taking. A policy aide might help with clinic registration because this is a good opportunity to gather observations for use in evaluating clinic services. Although each aide registers patients for a different primary purpose, the actual work done is the same. Thus, no matter what concept of health aides other staff members might hold, seeing the aides conducting clinic registration would confirm their expectations for the aides' behavior. The more these expectations are validated in their own minds, the more they are likely to be upset when they observe some other aspect of the aides' role or status which violates them. Complaints, slights, jealousies, and outright clashes are bound to follow.

Many illustrations are possible, but two will suffice to underscore this critical point. Health aides of all types might be invited to staff meetings, but expectations for their appropriate role at such meetings will vary vastly according to which concept of the aide they are perceived to represent. Routine aides might be expected to listen attentively, but to make few suggestions except of minor importance. Program aides might report specific information about the work they are doing and also offer suggestions about new or better ways to make the community aware of health services. Policy aides, however, would be expected to "tell it like it is," giving the agency straightforward feedback about community reactions to its practices and asking some pointed questions about agency services. Staff members who think of aides only as extra arms and legs may be quite unprepared for these latter types of participation. Suggestions for change are always somewhat threatening to the people responsible for the status quo, and when these suggestions are unexpected and seen as coming from inappropriate sources, reaction may be hostile indeed. Defensiveness may take the form of aggression against the aides, who in turn are likely to develop some defenses of their own. Cracks in interpersonal relationships which can grow into real staff schisms therefore can result from differing role expectations.

Differing expectations for the status and privileges of aides can also lead to trouble. If, for example, the agency hires aides with the assumption that this is an inexpensive means of extending health manpower, then salaries for all aide positions, regardless of differences in function, will be set at some minimum level. This should create few problems with routine aides, for salaries and duties will be seen as commensurate by all concerned. Aides carrying greater responsibilities, however, may soon question why their pay scale is not on a par with

other health workers carrying out similar responsibilities. On the other hand, if the salaries of these aides should be higher, then persons who think of all aides as extra arms and legs will complain that the aides are being shown undue favoritism. In either case, if the aides should happen to be from racial minorities, then deeper undercurrents of suspicion may develop. Low salaries may be regarded by program and policy aides as a reflection of the establishment's conspiracy to keep them socioeconomically depressed, while higher salaries may be seen by some other staff members as appeasement for militant minority groups.

An agency's failure to clarify the type of aides to be hired, the functions which they will perform, and the assumptions underlying these functions can also lead to numerous other conflicts. Differing staff expectations can give rise to disputes about the type of training the aides should receive, supervisory patterns, staff-aide relationships, and promotional opportunities, to mention only a few possibilities. Moreover, when the agency is not clear in its concept of the aide, it must necessarily be ambiguous in interpreting its expectations and decisions to the aides themselves. Thus, as each individual struggles to define health aide in his own way, role conflicts and perceived status inequities inevitably result. For the aides this may be taken as evidence of agency discrimination, while the agency may respond to its frustration by blaming the aides. Therefore, although both agency staff and aides begin their relationship with the best of intentions, confusion in the concept of the aide may ultimately broaden rather than breach the gap in understanding between the agency, the aides, and the community they represent.

Unexpected Consequences—Program Aides

While confusion in concept may lead to many unexpected and unwelcome outcomes, failure to understand the implications of involving different types of aides may also lead to some unwanted surprises. This is particularly likely to occur with program aides, for not all agencies may fully comprehend the theory and rationale underlying their employment. Since these aides, like routine aides, are hired to help achieve preset agency objectives, the agency may expect to be in full control of the results. Nevertheless, the functions which they perform are closely related to those of policy aides, and so they tend to introduce pressures for learning and change which far exceed agency expectations. This in itself is a potential source of conflict. The extent to which conflict materializes, however, as well as whether it is compounded or resolved, depends on several interrelated aspects of the agency's philosophy.

The agency's concern with health. One unanticipated consequence of employing health aides to help achieve specific program objectives is pressure to re-evaluate broader agency purposes and goals. Imagine, for example, that aides have been hired to increase response to Papanicolaou testing by carrying out such functions as making home visits, conducting neighborhood discussion groups, and obtaining the support of community leaders for this action. They have been especially selected to do this work because of their ability to communicate with people and develop warm relationships with them. Their holistic concern for others means, however, that in their community contacts they are bound to discover many more serious and urgent problems than failure to obtain Pap smears. Their natural response will be to help, and they will turn to the agency for assistance.

Since the agency employed these aides to help with cancer detection, the feedback about other types of problems may be quite unexpected. In addition, the more that the agency's purposes and goals relate only to cancer control, the less prepared it will be in structure and function to cope with these problems. Even agencies whose programs reflect broader health interests, however, may not be able to assist in solving all the problems which the aides discover, for these will eventually encompass the total range of physical, mental, and social ills in the community.

The agency is thus caught in a dilemma. If it instructs the aides to concentrate on work directly related to its specific program objectives and to ignore other problems which they may find, it in effect abandons people in trouble. Furthermore, it forces the aides to disappoint those who look to them for help and thus jeopardizes their standing in the community. If, on the other hand, the agency tries to offer assist-

ance in areas other than cancer control, it opens a Pandora's box of questions. Will it extend its own services or make referrals? Will these be only health referrals, or will action be taken on any problem for which help is available from some source in the community? Will referral be limited to making people aware of services or will the agency build on the relationships which the aides already have to facilitate the bringing together of people and services? As gaps in services become apparent, what leadership will the agency take in trying to fill them? What will the agency do as the aides increasingly become known as sources of help to people in the community and are contacted with ever greater frequency about a variety of problems? To what extent will the agency allow the aides to spend time and effort on problems which are not directly related to its own program goals? How will it respond to requests from other agencies which wish to "borrow" the aides for their programs? If these agencies eventually employ their own aides, how will the work of multiple aides from various agencies be coordinated?

The involvement of program aides therefore soon requires the agency to consider problems much broader in scope than its immediate program focus. To the extent that the agency maintains this original focus, it not only fails to resolve these problems but it may reduce the effectiveness of the aides in the community. Coping with these problems, however, may necessitate revising the agency's concept of the functions program aides can perform, reevaluating agency priorities and use of resources, developing new interagency relationships, and even broadening agency goals and purpose to reflect a more comprehensive concern with total individual and community health.

The agency's relationships with the community. Another unexpected outcome of involving program aides is that they tend to force a reevaluation of the agency's relationships with the community. Within the geographic and political boundaries of their jurisdictions, health agencies traditionally have been concerned with two specialized "communities of interest"—those needing health care and those providing it. Typically, there has been little overlap between these two communities, for those chiefly responsible for funding, planning, and delivering health services generally have not been the same people for whom these services have been intended. Agency relationships with these communities therefore have tended to be unidirectional—give or take—as the agency has sought to obtain resources and services from some and to provide them to others.

Theoretically, program aides can reach those in need of health services because through their own membership in a particular community of need they understand its patterns of interaction and networks of influence. Nevertheless, the people in this community may not recognize their common health problems, and they may not share any other mutual interests or concerns. Thus no real community may exist except in the agency's terms. To the extent that this is so, the effectiveness of program aides in reaching such a community obviously depends on their ability to understand and relate to people in general. Unless the agency understands this, it may be disappointed in what the aides are able to accomplish, while the aides may be frustrated by agency demands for knowledge of the community which they cannot provide.

When members of the agency's target group share the same social or cultural milieu as the aides, their potential as health communicators is greatly increased, but the agency may face other unexpected problems. Program aides are effective communicators precisely because of their comprehensive understanding of interaction patterns and multidimensional relationships. In their community contacts, therefore, they may discuss many issues which are not directly related to the unidimensional community interests of the agency. If the agency attempts to focus the work of the aides more closely on its program goals, it violates the very assumption on which the program aide concept is founded, for the agency, not the aides, will be determining the "how" of their functions. Clearly, the communications potential of these aides then cannot be realized.

The agency that encourages the aides to communicate with the community in the manner which they think best, however, may have to revise its expectations about the amount of program work the aides can do. In addition, as already pointed out, this will force the agency

to become aware of many more community problems and to recognize the limitations of its unidirectional community relationships. These limitations will also become apparent as the aides feed back information to the agency about factors affecting the use of health services. Since other pressing problems faced by people in the community may prevent them from taking the desired health action, the agency may need to become involved in solving these problems in order to increase response to its programs. Furthermore, since the manner in which health services are structured frequently poses barriers to their use, the aides will also make the agency increasingly aware of the need to involve those for whom the services are intended in health planning. Thus the aides push the agency toward recognizing the community as a complex and dynamic social entity. In so doing, they enmesh the agency in new and multidimensional community relationships.

The agency's understanding of the educational process. Most agencies which hire program aides assign them many activities in community education. Both the nature of these activities and the agency's expectations for the program results they should produce, however, will depend on the agency's understanding of education. When agencies assume that merely getting health messages to people will motivate them to take the desired health action, they may be quite disappointed in the program response which the aides can generate. On the other hand, when agencies are aware that health behavior is determined by multiple factors differing for different individuals, the activities they assign the aides are likely to be tailored to particular educational needs of people in the community, and so these activities will make a greater impact on program response. In addition, such agencies are likely to adjust their expectations for educational results to the complexity of differing educational tasks. For both of these reasons, then, educationally sophisticated agencies may evaluate program aides more favorably than agencies with a limited understanding of the educational process.

Agency expectations for the role of program aides in staff education will also be influenced by the agency's understanding of education. Most agencies probably anticipate that program aides can reveal new insights about effective ways to frame and transmit health messages. However, agencies which appreciate that true education builds on each individual learner's own interests, needs, and understanding will seek a wider range of data from the aides than those which believe that education merely involves information-giving. The more that an agency's concept of education is limited, then, the more that community feedback from the aides may be perceived as irrelevant.

Even agencies with a deep understanding of education, however, may be quite unprepared to cope with free and open feedback from program aides. Since the rationale for employing these aides is to assist in the achievement of specific program objectives, most agencies probably expect that the aides' contribution to staff education will be limited to this area. Nevertheless, since program aides approach people and their problems holistically, their view of factors affecting program response probably will be broader than the agency's. In addition, since these aides represent the community, they naturally tend to make the agency aware of the total range of community concerns. Agencies with a narrow health focus and restricted community relationships therefore may also perceive much of the feedback from program aides as irrelevant—or even threatening when dealing with it implies a more comprehensive reevaluation of agency understandings, attitudes, and practices than anticipated.

Many agencies try to avoid these sources of conflict by restricting feedback from the aides, but in fact this only avoids resolving them. If the aides tell the agency only what it wants to hear, they betray those whom they represent and put themselves in the position of trying to reach the community on the agency's terms. Paradoxically, this will cause their relationships in the community to suffer and ultimately limit the success they can enjoy from the agency's point of view. If, on the other hand, the aides communicate freely despite agency objections, they alienate themselves from staff and further reduce their potential for staff education. The irony of this situation is that no matter what course the aides pursue, they are likely to be evaluated unfavorably by the agency. Very probably a great many negative reports about

health aides could be understood from this perspective.

The agency which encourages free and open feedback from program aides will also encounter some unexpected difficulties. Some of these, such as pressure to reevaluate agency goals and community relationships, were discussed earlier. Others concern the unforeseen amount of time that staff must spend in listening to the aides, coping with the problems they discover, and making corollary adjustments in schedules, priorities, and other working arrangements. The tensions and disagreements which result from dealing with these problems can create even greater problems in human relationships, however, unless the agency recognizes these difficulties as an inherent part of the educational process and responds to them so that channels of communication are kept open and interaction constructive. Thus the agency's understanding of education affects not only its ability to foresee and avoid problems which the involvement of program aides may create, but also its capacity to cope with and learn from unexpected problems which inevitably arise.

The agency's response to feedback from the aides also has implications for what the aides themselves learn as a result of their experience. Every contact that they have with the agency teaches them something—positive or negative—about the agency's concern for people and the depth of its desire to understand and serve the community. Since the aides are likely to communicate their learning to those whom they represent, this informal education may have much more impact on community response to agency programs than any formal training that the aides receive or any supervised work that they do.

The involvement of program aides thus initiates an educational process for the community, the agency, and the aides themselves which extends far beyond the objectives of any particular health program. In fact, program aides introduce pressures toward learning and change which move the agency toward the policy aide concept. Most agencies employing program aides are not ready to accept this concept, however, or else they would have hired policy aides in the first place. Thus conflict results. Generally, the farther away the agency is from the policy aide concept, the greater this conflict tends to be, for it really evolves from all the problems which have kept the agency and the community apart. When the agency can recognize this, it can view the resolution of this conflict as an opportunity to bring the agency and the community closer together. When the agency reacts defensively, however, relationships between the agency and the aides may deteriorate, the agency and the community may develop new antagonisms toward each other, and additional barriers to the attainment of the agency's program objectives will be created.

Theoretical Objections to Health Aides

While many unfavorable agency experiences with health aides may stem from confusion in concept, as well as from reaction to unexpected consequences of their involvement, these negative reports also are often cited as evidence that the "aide theory" simply does not work. This type of argument against aides is difficult to evaluate, for the behavioral sciences are just beginning to understand the deeper dynamics of social interaction which affect some of the specific issues involved. Furthermore, since both the program and policy aide concepts are based on a number of assumptions drawn from various aspects of theory, these assumptions can be attacked on a number of points. Thus those who agree in general that the aide concept is theoretically invalid may disagree among themselves about why it is invalid.

Some persons believe that it is impossible even to recruit true representatives of another subculture to act as health aides. They hold that the agency's own subcultural values will so influence its qualifications and standards for recruitment that only persons most like the agency's staff will be selected. Others submit that while the agency might be able to recruit indigenous workers from different subcultures, the more the aides represent these subcultures, the more points of conflict they will encounter with the agency. The aides therefore must soon adopt the agency's standards or leave the agency's employ under circumstances which can only widen the gap between the agency and those it finds "hard-to-reach." In either situation, the conclusion is that health aides working in an agency do not really provide an effective link to persons

previously unreached by health services. Moreover, their presence is said to be undesirable in that it deludes the agency into thinking it is doing a job which still needs to be done.

Other theoretical objections to aides revolve around the notion of "social distance." While the aides' identification with the community at the time of initial employment is not disputed, this is thought to diminish as a result of their association with the agency. Opinions differ, however, as to why this happens and how long it takes. Some feel that because of the training they receive, the work they do, the new relationships they develop, and the salary and status they enjoy, aides undergo a transformation of social identity so that they no longer are like those they supposedly represent. Their self-concept changes, their aspirations are raised, and their values move closer to those of the agency and away from those of the community.

Others hold that social distance develops not so much because of changes in the aides themselves but because of changes in the way in which the community perceives them. They argue that people who sense social distance between themselves and an agency will also feel this distance between themselves and anyone the agency employs. Thus the mere fact of being on an agency's payroll creates social distance between aides and the persons they are supposed to reach, and the salaries which aides receive set them apart from their peers both financially and socially. Still others believe that social distance is created by both of these phenomena acting in mutually reinforcing cycles. Thus both the aides and the way the community perceives the aides are said to change over time as a result of agency involvement.

While social distance arguments are used to support the position that aides are ineffective, they also have been used in ethical and humanitarian appeals against their employment. Supposedly, working with health agencies increases the status of aides so much that they are effectively removed from their original cultures, and their new attitudes and aspirations prevent them from ever returning. At the same time, the aides can never hope to achieve more than low status in the long-established, institutionalized medical hierarchy of the agency, for their lack of training will retard their upward mobility. The experience of being an aide therefore is said to turn one into a "marginal man" who is caught between two cultures without really belonging to either.

Such objections also come into play in questioning the assumption that program and policy aides can help professional staff to understand other subcultures better. Obviously this is impossible if for any of the foregoing reasons health aides do not really understand or represent these subcultures. Others who accept the concept of the indigenous health worker challenge this assumption on different grounds. Some hold that aides are too engulfed in their own subcultures to identify significant aspects of them for the agency staff. Conversely, some contend that aides could indeed impart a great deal of pertinent cultural information, but that they won't—either because they are so overwhelmed by the status of professionals that they can't communicate their own ideas and feelings or because they fear speaking the truth would jeopardize their jobs. In any event, aides allegedly tell the agency only what they think it wants to hear—and, as we have seen, in some circumstances this is possible.

Perhaps the most devastating theoretical argument against the employment of aides is the assertion that this actually broadens rather than breaches the gap in understanding between members of the agency and the community. Purportedly, health workers who rely on aides to perform their communications functions for them remove themselves more and more from direct personal contact with people in other subcultures. The interaction through which mutual understanding could develop is therefore reduced, and stereotyping is increased. The arguments previously cited are drawn on to point out that interaction with the aides themselves is no substitute, for aides either do not truly represent other subcultures or they fail to represent them accurately. Moreover, the professional growth of staff is supposedly inhibited through the use of aides since staff is not required to improve its own communications skills.

While all these arguments are theoretically interesting and of practical significance, pos-

sibly not all theoretical objections to health aides stem from theoretical concerns. If they did, certainly some of these questions would have received more research attention than they have to date. In addition, the very lack of an adequate and comprehensive theory to explain human behavior suggests that theoretical arguments against health aides would be more difficult to counter than would arguments based on other reasons. Agencies which have had unfavorable experiences with aides thus might find in certain aspects of theory ready explanations for failure. Such explanations are easier to come by and less painful to accept than either an unbiased examination of theory or thorough program evaluations. Likewise, both agencies and staff members who are threatened by the program and policy concepts of the health aide may find theoretical objections to them more socially acceptable than other, more incriminating arguments against them.

Root of the Conflict

At this point we are beginning to untangle some of the roots of the confusion and controversy surrounding health aides. Some rest in confusion among differing concepts of the aide and failure to understand and accept the implications each suggests. Some lie in agencies' negative experiences. Some are based on legitimate theoretical concerns. The deepest root of all, however, and one which twists around and through all other objections, is resistance to change.

Health aides imply change. Although the changes brought about by routine aides are minor compared to those stimulated by program or policy aides, even the addition of "extra arms and legs" to the agency alters the work and responsibilities—the roles and relationships of staff members. Adjusting to these changes requires learning—the development of new understandings, new attitudes, and new patterns of behavior. Forcing these changes before sufficient learning has taken place to support them is threatening, and the natural response is defense. In the social world, as in the physical one, pressure creates resistance. This resistance may be exhibited by an entire agency or only by certain individuals in it. It may be conscious or unconscious. And it may arise from the threat of change on a personal, agency, or societal level.

Inadequate agency planning as a source of resistance. A common cause of resistance to health aides is inadequate planning by the agency. Agencies eager to take advantage of available project funds may write grant proposals with little thought and much haste in order to beat application deadlines. Agencies wishing to appear progressive may employ a few aides to demonstrate the readiness with which they adopt new approaches. Agencies swept away by the enthusiasm of other agencies may adopt their "aide programs" without modifying them to meet their own particular needs. Whatever the reason, an agency which does not think through aide functions and relate these to agency goals and philosophy is potentially heading for trouble, because it cannot anticipate the changes which the employment of aides will introduce and prepare itself to accept them.

Failure to relate proposed aide functions to agency goals and philosophy also implies an inadequate basis for developing plans for the recruitment, training, and supervision of aides; for determining their administrative placement, salaries, promotional opportunities, schedules, and workload; and for establishing necessary coordinating mechanisms. Each of these areas, then, can give rise to problems which will generate further agency resistance to the aides. In addition, since all these factors must be considered in estimating the costs of employing aides, agencies which do not engage in this type of analysis may resent unexpected expenditures in staff time and resources which become necessary.

Planning for program aides is especially likely to be difficult, for, as discussed before, such aides tend to introduce pressures for change which far exceed agency expectations. Nevertheless, the agency which understands the implications of involving these aides can minimize many problems which otherwise might blossom. For example, the agency can do much to encourage unbiased feedback from the aides when it realizes that the strength of their contribution is directly related to their identification with the community. At the same time, the aides can be helped to understand the agency's realistic limitations in solving community prob-

lems and the network of interrelated changes which often must occur before seemingly simple changes can be made. Most important of all, however, the agency can prepare itself to "expect the unexpected" so that it will be flexible and open as it enters into the process of learning and change which the employment of program aides initiates.

An agency's pattern of planning also affects the adequacy of its planning. Thus far, an agency has been referred to as a unit, but in reality it is of course composed of many different individuals. Unless all the people who will be affected by the involvement of aides have an opportunity to help plan for them, the agency staff may not be unified either in its decision to employ aides or in its expectations for the outcomes of this decision. Therefore, even though top agency administrators understand and accept the implications of involving aides, staff members who do not participate in planning may fail to do so. This situation thus may lead to many of the other difficulties discussed earlier.

Individual differences in readiness for change. The characteristics of the individual staff members of an agency also affect its response to health aides and the changes they engender. Since each person is unique, making a given change requires more learning for some than for others. Individual rates of learning also vary—some staff members may be ready to work successfully with health aides before others. While the agency may not want to wait to employ aides until all its workers have developed optimal attitudes supporting this action, resistance may be expected to the extent that these attitudes are lacking.

The experience of working with aides may hasten the learning process for many. In certain instances, however, underlying attitudes opposing health aides may serve personality needs so deep that they cannot readily be changed and the employment of aides may actually strengthen resistance to them. Thus, workers with unusually strong status needs may continue to feel threatened by the special status accorded program and policy aides, as well as by the notion that "indigenous nonprofessionals" can perform certain functions more effectively than they can. Persons who harbor bitter prejudices as defenses against their own inadmissable feelings of inadequacy may vent their hostility toward the aides, both overtly and covertly, especially when the aides are from racial or ethnic minorities. Conversely, professionals from minority groups may fear that they will be identified with aides from similar backgrounds and suffer a loss of their hard-won status. Other such professionals who have carved out prestigious roles for themselves as minority group spokesmen may resent the aides' infringement on their special claim to fame.

Agency resistance to societal change. It might seem incongruous that an agency with widespread feelings of prejudice against minority groups would even consider employing persons from these groups as aides. Nevertheless, this action may be an especially subtle and lethal form of resistance to the powerful currents of social revolution affecting every aspect of society. The drive to obtain basic human rights for all people and the recognition that health is one of these rights has led to a growing clamor for greater citizen participation in the structuring of health services. At the same time, the push to develop new careers for the poor together with the demand for fair employment practices has forced health agencies to reexamine their personnel policies. So strong are these pressures that no agency can ignore them. But the agency that wishes to thwart them may see the employment of aides from ethnic minorities as the solution to its problems.

Since in such a situation the rationale for hiring minority group aides has nothing to do with the agency's service functions, the tasks these aides are assigned will be relatively meaningless. Even when some of these tasks may seem to promote change, neither the agency's philosophy nor its structure will make this possible. And regardless of how well the aides perform, they are destined to be evaluated unfavorably. Neither the aides nor the community will passively accept this situation, however, and so tensions are bound to result. As the agency's reactions to these tensions increasingly reveal its resistance to change, conflict will deepen and perhaps explode into open confrontation. The attempt to block change through the employment of aides therefore is destined to boomerang, for aides are indeed agents of change.

Resistance to change and the compounding of conflict. Most arguments about health aides, the negative experiences which agencies have had with them, and even theoretical objections to them thus can be traced to conflict stemming from pressure and counter pressure to change. Frequently, conflicts arise because not all those involved with aides have had adequate time and opportunity to develop new attitudes and practices supportive of the changes aides imply. Sometimes, however, resistance may be based on an inability to accept either these changes or the aides themselves because of incompatible deep-seated personality needs. In addition, of course, resistance may be founded on legitimate questions and concerns.

Since these sources of resistance are difficult to separate in practice, aides and their supporters may suspect that anyone who disagrees with them does so out of prejudice. This is particularly likely to happen when neither the nature of the educational process nor the educational implications of involving health aides are fully understood. Other health workers, however, may resent this unspoken accusation and hesitate to voice questions and problems related to the aides because of it. Undercurrents of suspicion and mistrust therefore can hamper the investigation of these problems and prevent the resolution of even the most simple misunderstandings. The problems and misunderstandings thus multiply, suspicion deepens, and conflicts become inflamed and compounded. This, then, may be the real reason why arguments about health aides have become so tangled, complex, and emotional. It may also explain why these arguments have received such scant attention in research and program evaluation.

Health Aides—Pain or Panacea?

Are health aides a pain or a panacea? This question cannot be answered without first asking many others. What is the agency's concept of the aide? What does it hope to accomplish by employing aides? What functions will the aides perform? Are these functions compatible with the agency's goals, philosophy, structure, and flexibility? What investment does the agency envision making? How will the aides be recruited, trained, and supervised? What salary will they be paid, and what place will they occupy in the agency's administrative hierarchy? What criteria will be used in evaluating the effects of the aide experience on the agency, the community, and the aides themselves? How will these decisions be made, and who will participate in making them?

The agency which employs aides without critically examining these questions is almost sure to encounter so many problems that it will conclude they are a pain. Even agencies which engage in careful and thoughtful planning, however, are unlikely to conclude that aides are a painless remedy or a total panacea. Planning in itself can be painful in that it requires searching analysis, as well as a great deal of agency time and effort. Furthermore, while aides of all types have worthwhile contributions to make, the functions they perform are by no means a cure-all for health problems. To the contrary, program and policy aides especially bring the agency face-to-face with many of the deepest problems ailing our society. Since these problems are painful, confronting them is also painful.

Pain, however, can be a prelude to learning. To the extent that health aides make this possible, they may indeed be a panacea, not because they solve health problems, but because they provide a means for the agency and community to solve them together, and not because they avoid pain, but because they help to diagnose its causes. The greatest potential contribution of health aides therefore lies in stimulating a process of education which, continuing over time, enables the agency to serve the community better, helps the aides and other staff members to grow in ability and understanding, and assists the community and its constituents to achieve total physical, mental, and social well-being. From this perspective, planning for the employment of aides and working with them to resolve the problems they discover and create is an educational investment of the highest order. And, from this perspective, health aides may truly be considered health education aides in the most meaningful sense of health education.

Tearsheet Requests

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Total Synthesis of a Gene Achieved

The first total synthesis of a gene, the basic hereditary unit, has been accomplished by Dr. G. Gobind Khorana and colleagues at the University of Wisconsin's Institute for Enzyme Research. Dr. Khorana shared the 1968 Nobel Prize in medicine for his work in elucidating the genetic code by synthesizing double-stranded DNA polymers of various sequences and then determining which proteins were synthesized from information encoded in the various DNA sequences. The achievement, long awaited by molecular biologists, will enable organic chemists to synthesize the basic genetic material from simple organic chemicals.

The gene was synthesized by putting the building blocks known as nucleotides into the sequence in which they occur in natural genes. Scientists previously learned how to take small bits of genetic material out of living cells. They could make copies of natural genetic material in the test tube.

Dr. Khorana, however, was the first to show that genes can be synthesized from atoms or the simple chemical building blocks, nucleotides. No natural gene is required as a model in the reaction mixture. He produced a gene completely by synthetic methods, using as his model the gene for alanine transfer RNA from yeast. From the order of the nucleotides, of the transfer RNA product, the structure of the gene coding for this molecule was deduced.

The gene is a molecule of deoxyribonucleic acid (DNA), made up of two strands. Each strand is composed of four basic building blocks of nucleotides consisting of four bases—adenine, thymine, guanine, and cytosine. These bases, represented by the letters A, T, G, and C, are linked to a sugar and phosphoric acid molecule. The two strands of the gene are wound in a helix and are complementary in that the A's of one strand are always opposite the T's in the other. The same is true for the G's and C's.

These four coding units are arranged in various combinations to code genetic information used in producing molecules of transfer RNA, which are then employed in synthesizing the proteins of cells along with many other components.

Dr. Khorana started with the four nucleotides which can be synthesized easily from atoms. He joined the four basic building blocks into a number of shorter single-stranded segments with the nucleotides in proper sequence, then later joined these fragments into the complete double-stranded 77 nucleotide gene.

The single-stranded fragments were designed so that they spontaneously line up in proper sequence to form the double strands exactly as happens in natural DNA. The ends of the fragments are then joined by the enzyme DNA ligase, which is purified from living cells.

One ultimate test would be to check the gene for biological activity in a living cell by introducing the artificial gene into a cell lacking the gene, showing that by this introduction the cell was transformed into a normal one. Other more immediate experiments for biological activity are underway. These experiments include learning how to copy the artificial gene in a test tube using an enzyme called DNA polymerase. The next job is to copy the gene into the transfer RNA.

The work on the yeast transfer RNA gene was started in 1965, and Dr. Khorana is working on the synthesis of a second gene, tyrosine-supressor transfer RNA, found in *Escherichia coli.* The *E. coli* gene will be easier to test for biological activity in living cells and the gene's function in the protein synthesizing system is well known.

Synthesis of the fragments of this gene is now nearly complete, but the work of joining the segments has only begun. The work is expected to be completed soon. Mutants lacking the gene are already known and will be available for testing the biological activity of the artificial gene when synthesis is complete.

Theoretically, any desired gene could be manufactured in the test tube, now that the rules for chemically synthesizing genes have been determined. Thus, some scientists foresee the time when genetic diseases, such as diabetes and some mental illnesses, might be cured by providing the tissues of affected individuals with a supply of normal genes. Other characteristics, not necessarily pathological ones, could even be altered in the same manner.

Scientists caution, however, that this possibility is many years in the future and a problem can be foreseen in developing techniques for introducing the genes into the proper target areas. Methods now contemplated would involve using purified genetic material or viruses as carriers to introduce genes into affected cells.