The Development of a Regional Blood Bank Program

ONE OF THE MOST SIGNIFICANT ACCOMPLISHMENTS of the Mon Valley Health and Welfare Council, Inc., during recent years has been the replacement of four separate blood bank programs with one community-based program that currently insures total, comprehensive coverage for the residents of the Monongahela Valley in southwestern Pennsylvania. The region's providers of health care had been aware of duplication and gaps in the blood bank system for a number of years, but the problems surrounding the availability of blood had been given lower priority than others such as outmoded hospital facilities, a rapid growth of the aged population, and the need for more primary medical care.

Assessing the Blood Services Problem

The Mon Valley Health and Welfare Council, founded in 1972 as a progeny of an experimental health services delivery system (EHSDS), came under pressure during 1972 and 1973 from consumers and community leaders interested in upgrading the existing blood bank system. The council was the logical target for this pressure, since its board of directors was composed of representatives from the health care sector, third-party payors, elected government officials, and consumers. It was therefore in a position to respond from an informed perspective to requests by consumers for study and evaluation of the existing system. Staff members were available who had experience in community organization, health care research, and health care planning. Also available were census data, local health care data, and information about the health status of the region.

Various informal requests to the council and its staff by concerned members of the community culminated in 1973 with a formal request from the Mon Valley chapter of the American Red Cross for assistance in exploring the potential for a region-wide blood bank which would cover all residents. At that time, as a part of its organizational structure, the council had a proposal review committee whose responsibility was to entertain such requests and make recommendations to the board of directors regarding each request's disposition. Since it was known that four blood banks were operating in the valley, the recommendation of the committee and the subsequent action by the council was the assignment of an appropriate staff member to evaluate the situation. Specifically, his task was to oversee an assessment of the four blood bank programs, interviews with their representatives, and the collection of comparative information from each.

By late 1973, the following information had been collected from the programs:

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1. The geographic locations where blood was being collected.
2. Each program's geographic service area in terms of providing coverage and the groups or organizations covered through their membership and participation.
3. Qualifications and restrictions of membership in the programs.
4. Reciprocity agreements.
5. Costs of collecting and processing blood and charges to hospitals and to patients.

The assessment revealed substantial differences in the four programs, especially in their coverage and charges. Some pertinent findings are presented in table 1.

For the years 1970 through 1972, only program A had increased the amount of blood it had collected. This program also had the lowest charges for blood provided to the hospitals. Since the local hospitals were the collecting agents for programs C and D, the charges to hospitals were not applicable. The local hospitals' charges to patients were the same, regardless of which program supplied the blood. These charges follow:

$70 for the first unit (or replacement with 2 units)
$35 for subsequent units (or equal replacement)
$42 processing fee for each unit used
$21 fee for units ordered, but not used

Working Out the Solution

Having this documentation, the proposal review committee recommended that the council undertake to create one comprehensive blood program that

Table 1. Comparison of four blood bank programs

Characteristic	*Program A*	*Program B*	*Program C*	*Program D*
Units of blood collected:				
1970	868	401	660	400
1971	881	382	403	400
1972	1,091	367	512	400
Persons covered	Individual, immediate family, grandparents, and grandparents-in-law	Individual, husband or wife, unmarried children, and other relatives in household	Individual, immediate family, dependent relatives, parents, and grandparents	Individual, immediate family, parents over 65
Cost per unit for collection, processing, and distribution	$17	$27.38	$19	$17.85
Charge to hospital for whole blood	$14	$40	Not applicable	Not applicable

could serve the needs of all residents, while making the blood services in the region more adequate and timely. As a result, the Mon Valley Blood Services Task Force was appointed and later expanded; its mandate was to identify alternatives and develop mechanisms to attain the goal recommended by the committee. The 11 members appointed to the task force represented the following occupations, organizations, and groups:

Representatives	*Number*
Consumers:	
President of labor union local	3
Attorney	1
Public relations director	1
Direct providers:	
Hospital pathologist	2
Hospital administrator	1
Hospital anesthesiologist	1
Indirect providers:	
United Way representative	1
Health planning agency board member	1

The five-consumer, four-direct provider, and two-indirect provider composition of the task force was purposely chosen to represent the community fairly and to enhance its legitimization and recognition by both provider and consumer sectors. If the indirect providers are viewed as consumer representatives, as they were when the Mon Valley Blood Services Task Force was formed, then the group was almost equally balanced.

The task force had to undertake activities that would be accepted as legitimate by the various parts of the community. Recognition and acceptance were vital because each of the four existing blood programs had a great deal of support from different groups in the valley. A new program would not be started in a vacuum, but would replace old systems with their attendant emotional and political commitments and attachments.

Because of the diverse backgrounds of task force members, and because most had no experience related to blood programs, an intensive educational process was initiated. It included presentations to the group by blood technologists and by the service-provider members, as well as site visits to other programs. Audiovisual and printed materials were used. This educational process solidified and united the task force into a well-informed and well-integrated group; its members had a single purpose and knew the actions that the group had to undertake to achieve it. Monthly meetings were held, and a 70 percent attendance record testifies to the members' continued interest and involvement.

Through this educational process and the resulting interaction, a list was compiled of issues that were deemed to be most important in the formation of a region-wide program. The issues included an adequate and timely blood supply, its cost, the quality of the blood, and legal liability. After these issues were incorporated into a program model, the task force sent requests for proposals to the organizations responsible for the four existing programs. The format of these requests used the concept of regionalization, as defined in the Federal Register, in the implemention plan for a national blood policy (*1*):

> An organization of voluntary non-profit blood banks and transfusion services that collectively can provide a full range of services will be officially designated as an Integrated Regional Program if it can substantially meet the following performance criteria:
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> 1. Accept the responsibility for recruiting volunteer donors in the region.
> 2. Include at least one facility that is licensed to ship blood over state lines.
> 3. Provide for total blood service within its area on a schedule in keeping with the needs of the region.
> 4. Have the capacity to provide expert medical consultation on hemotherapy, compatibility problems and other blood related problems whenever needed.
> 5. Provide the range and quantity of blood components required in the region.
> 6. Meet current appropriate inspection and accreditation standards.
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> In local areas served by several blood banks the Integrated Regional Program will encompass all the blood services in the area, including transfusion services. Physicians and directors of the area blood banks should exert leadership in the establishment of an organization that can provide the services deemed necessary to the successful administration of an integrated program. The blood banks and the hospital services that will be served by these larger programs must be invited to participate as they would be in an area served by a single blood bank.

Three proposals were subsequently submitted to the task force from program A, program B, and programs C and D together. The major elements in these proposals are shown in table 2.

Differences in the three proposals made a comparative analysis by the task force impossible. Therefore, during the next 5 months the members made an extensive study and evaluation to fill in many gaps in the proposals. Their work and a process of negotiation led to a decision on the type of program that would provide the best coverage for residents of the valley. Their recommendations to the Mon Valley Health and Welfare Council, based upon this decision, follow:

1. The task force endorses the proposal presented by and negotiated with program A.
2. The Mon Valley United Way should allocate

Table 2. Major elements in three blood programs' proposals

Elements	*Program A*	*Program B*	*Programs C, D*
Units of blood required for total coverage of all residents of the valley	3,600	7,000	....
Method of collection	Mobile units	Blood donor station ultimately required	Hospital-based blood bank
Persons covered	Individual and relatives	Individual predeposit plan, no geographic valley residency coverage	....

$5,000 to program A to help pay for initial implementation costs.

3. Coverage should include all 112,000 valley residents along with the immediate families of the donors, regardless of the family members' places of residence.

4. Units of blood collected should not exceed the number of units used by the population. The quota during the first year would be 3,360 units, an estimate based on 3 percent of the total population. After the first year of experience under the new program, this figure could be adjusted annually to reflect the actual number of units being used by the population.

5. Program A should establish a storage depot in the valley and should supply the local hospitals from this location as needed.

6. The task force should be established as a permanent, community-based entity known as the Mon Valley Blood Council, and be made a standing committee of the Mon Valley Health and Welfare Council. Its duties should include the monitoring and coordination of the new program.

7. The combined efforts of program A, the local hospitals, and the blood council should be called the Mon Valley Blood Program.

Early in 1975, endorsements of these recommendations were obtained from the health and welfare council, the medical staffs of the local hospitals, and the United Way which subsequently allocated the funds requested by program A for initial implementation costs of the new blood bank program.

How the New Blood Program Evolved

The commitment and determination of the task force members and other interested citizens provided the impetus behind the development of the new program. In a sense, the situation was classic, because although the problem had existed for many years, and many people had good ideas about its solution, no movement or action had taken place. Ultimately a combination of the determination of local citizens, the concern of community leaders, and the availability of professional leadership in community organization, health research, and health planning fields brought to fruition the solution that many people had known was needed.

It is these specific ingredients and their documentation which may be valuable for other sites with similar, longstanding problems. Certainly the problem or even the concern about it was not unique to the valley. What is worthy of review are the factors precipitating the movement and how they were employed to achieve a satisfactory solution. Among the factors were these:

1. Concerned and interested leaders in the community,
2. Education of the public, including donors and donor groups,
3. Professional research into the problem,
4. Consumer involvement and participation,
5. Availability of health professionals,
6. Community-based orientation,
7. Availability of funding sources,
8. The community's capacity to organize and pursue a solution, and
9. The high level of credibility achieved by the task force.

No one of these factors could have resulted in the development of the new program, but a combination of them precipitated and brought the movement to fruition. From a behavioristic perspective, it appears that social and economic conditions were ready for change. The valley had a recent history of cooperative movements which had successfully combined funds and programs for more efficient delivery of services. Further, the various community sectors and

specific agencies in the area had become aware of their interdependence.

An important element early in the sequence of events leading to the formation of the blood program was the consumers' prodding of the other participants. Although hospitals, physicians, and existing blood programs had endured for years the unreliable blood supply and its high costs, not until the consumers forced the issue was a movement begun to bring about changes. Related to this consumer pressure was the designation in 1971 of a local health planning agency as an experimental health services delivery system, with the valley designated as an EHSDS demonstration site. The EHSDS and its progeny, the health and welfare council, provided the fertile ground for changing the blood programs along with many other facets of the health care delivery system.

However, even with the EHSDS and the council, blood supply problems had lower priority than other activities such as research into the health status of the residents, the upgrading of outmoded hospital facilities, and the organization of a representative management board with subarea councils located throughout the community. Without the insistence of the consumer members who served on the board of directors of one blood program, the current comprehensive system could not have been developed in the time frame that it was, and it might never have become a priority of endeavor for local health professionals.

Analysis of Cost Savings

The two hospitals in the area had been charging relatively high prices for blood and its processing before the inception of the new program. These high rates were caused by traditional problems concerning the availability of blood in the region. The total charge of $112 for the first unit and $77 for each subsequent unit stimulated patients and their families to replace the units and only be responsible for paying a $42 per unit fee for processing and administration. An added incentive to replace units was a policy of paying for or replacing two units for the first one used.

Although costly and difficult for the patients using the local hospitals, these policies were viewed as necessary to help assure the availability of blood in the valley, a region 25 miles from each of three county seats and 30 miles from the medical centers in Pittsburgh. For those residents confined to the local area for medical care and hospitalization, the valley was a forgotten region in terms of access to an adequate and timely supply of blood. Providers of health care were forced to rely upon supplies located outside the valley to supplement the local supply when it was low. Problems pertaining to transportation, municipal boundaries, and commitment to this relatively isolated area made the maintenance of a sufficient supply difficult and tenuous much of the time.

With the advent of the Mon Valley Blood Program, the local hospitals' charges of $112 for the first unit and $77 for each subsequent unit were reduced to $35 per unit including processing. For blood units ordered but not used, the fee was reduced from $21 to $15. A comparison of current local hospital charges and those of three neighboring hospitals (X, Y, and Z) follows:

Task performed	*Mon Valley*	*X*	*Y*	*Z*
Blood administered	$35	$38.50	$25	$35
Blood ordered, not administered	$15	$16.50	$25	$7.50

The increased availability of blood has enabled the local hospitals to bring their charges in line with those of other hospitals in the geographic area. Based upon an average need of three units for each patient requiring blood, the new program is saving the average patient or third-party payor $161, if we assume that under the old system the patient was not able to replace the blood used and was not covered under a group health insurance plan.

Under the former two-for-one replacement policy on the first unit, the average patient was responsible for replacing the three units with four, or paying $140, and the patient or third-party payor was responsible for three processing and administration fees of $42 each, totaling $126. Under the new program, this latter figure has dropped to $105, a savings of $21, and the blood need not be replaced by the patient, a savings of $140. Although accurate figures regarding usage will not be available for some time, an estimated 1,120 patients requiring blood would result in a savings to the overall health care delivery system of about $180,000 per year.

Discussion

What occurred in the Mon Valley was the development of a system that relieves hospital patients and their families of the burden of either replacing blood used during hospitalization with a larger amount or being penalized financially. The new system places the responsibility of maintaining an adequate and timely blood supply on the community, which has, in turn, accepted this obligation. The new blood program reduces some anxiety regarding hos-

pitalization, charges to the patients and third-party payors are lower, and there is now a systematic mechanism to help to assure the availability of blood. The new program anticipates demand, and throughout the year it maintains an adequate level of available units. Although the four programs formerly managed this to a degree, they operated from much smaller bases of donors, geography, and coverage. The greatest assets of the new program are its broader geographic scope, increased coverage, ability to produce a larger amount of blood, and the reduction of costs related to this health service.

The number of units required to meet the demand during the first year of operation of the new program was estimated to be 3,219. This number would assure coverage of all valley residents, except the 4,700 people in two outlying municipalities who opted to remain affiliated with a county-based program. At the end of its first year, in the summer of 1976, the Mon Valley program had collected 3,359 units, or 140 more than the goal. After the actual number of units used during the first year was calculated as accurately as possible, the goal for the second year was increased by 240 units to 3,459.

This coordinated, planned approach toward improving the blood bank system would seem to be the most significant outcome. The participants and the system as a whole moved to change traditional methods of meeting needs and solving problems—methods which had never really been successful in the long run. To change the situation significantly, the participants had to overcome its exigencies and disengage themselves from previous patterns of behavior and activities. During this process, there was no consensus regarding the shape of the new system being designed. Cooperation, however, was present because the participants agreed that changes had to be made to achieve the desired improvements.

Rational coordination and planning do not occur spontaneously in such community-based changes. Because of vested interests, apathy, and sociopolitical relationships, such movements are often uncoordinated and irrational. If changes come about, it is often because some group or organization speaks the loudest. Often the result is short lived or no more functional than the previous situation.

The original blood bank services in the valley seemed so ingrained in the fabric of provincialism that nothing less than a revolution could change them. However, one coordinated and informed action led to another, until all the pieces of a logical, planned system came together into a structure acceptable to all the participants.

The road to the current system was not easy, and the current system is not without problems. For example, some vestiges of allegiance to former programs still hinder the procurement of blood by the new program under the Mon Valley Blood Council. The universal problem of institutions not recognizing other organizations and their credit-debit systems exists in the valley: hospitals outside the region have not yet unequivocally accepted patients' membership in the new program. Even the local hospitals' staffs are not yet completely familiar with the coverage policy of the new systems. Such problems will have to be solved over time as the new program is accepted and recognized, especially by the public, as a valid service of the health care delivery system.

Currently, the Mon Valley Health and Welfare Council continues to supply staff time to help maintain liaison and communication among the agencies, organizations, and groups in the new program. But the EHSDS funding that enabled the council to provide staff support has ended, and the council's role in the blood program will have to be the same as its role in other elements in the total health care system: general coordination, research, and information forum.

Eventually the council's support should not be needed because the blood collection agency will become better established and should be able to support this staff function. The Mon Valley Blood Council began as an ad hoc committee of the health and welfare council, but the size of the task and the ensuing commitment resulted in the creation of a standing committee with status and responsibilities exceeding those of a typical committee. The blood council has already expanded its membership to become more representative of the service area and community interests. Its future and the future of the new Mon Valley Blood Program that it coordinates will depend not only upon the maintenance of close ties with the health and welfare council, but also in becoming independent in staffing, funding, and decision making. The blood council is aiming for a relatively autonomous organization that oversees a responsive, needed blood program, while also participating and cooperating with the Mon Valley Health and Welfare Council in assuring a comprehensive, rational system of health and health-related services for the valley's residents.

Reference

1. National blood policy. Proposed implementation plan; request for comments. Federal Register 39: 9327–9328, Mar. 8, 1974.