An Emergency Childbirth Service in Civil Defense Planning

GEORGE MOORE, M.D., M.P.H., and CATHERINE M. SULLIVAN, R.N., M.S.

A MUCH expressed need in the civil defense health service program has been a guideline for organizing a special emergency service to assist expectant mothers during and after time of major disaster. Indeed, the authors' file on emergency childbirth comprising material prepared by State and local civil defense organizations is remarkably thin.

Professional nursing journals have published several articles relative to the practical and technical aspects of emergency childbirth (*1–4*). Training manuals have been prepared by civil defense offices in a few States and in Canada (*5–7*), and instructive literature has been issued by official and private organizations at the State and local levels (*1,8,9*). Civil defense organizational and operational guidelines, however, have been generally lacking.

That many people have been concerned about the survival of our unborn babies in the event of a thermonuclear war is reason enough to outline a practicable approach to the organization and operation of an emergency childbirth service.

Underlying Assumptions

Assumptions basic to planning effective civil defense programs consider conventional as well as atomic weapons, and chemical, biological, and psychological warfare. Civil defense planning is based on the requirements for meeting an attack where the maximum size weapon used would be a 20-megaton thermonuclear bomb. Blast and heat from such a weapon burst are tremendous. Average homes would be partially destroyed at 20 miles from the point of detonation and secondary fires may result at 30 to 40 miles. Survival from such a blast depends on two factors, distance and underground protection.

In order to put miles between such a weapon burst and ourselves, we plan for evacuation. At present, the National Warning System (NAWAS) of the Office of Civil and Defense Mobilization is expected to give most designated target cities 2 to 4 hours of warning against surprise attack from aircraft. Hence, evacuation plans from the heart of metropolitan areas have been prepared, employing the best in engineering technology. At the same time, a program in family shelter protection has been inaugurated. If there is not sufficient time for evacuation, the public is expected to seek immediate protection in basements and underground shelters prepared by themselves. Evacuation plans should never be minimized since there is possibility of evacuation in a strategic warning (probable attack), tactical warning (imminent attack), if time permits, and in a time-phase period following attack from highly radioactive areas.

The hope of millions of target-area evacuees is to eventually reach the reception areas which escape destruction. The dispersal of the target area population in these areas, generally rural, presents tremendous problems in resources and facilities for the host services. A strong mutual aid program between target and reception area

Dr. Moore is chief of Health Mobilization Services of the Charlottesville Regional Office (Region III), Public Health Service, and Miss Sullivan is chief nurse, Health Services, Office of Civil and Defense Mobilization, Battle Creek, Mich.

civil defense personnel is essential in the present survival preparedness period for successful operation of all services and subsequent mobilization, victory, and rehabilitation.

The thermonuclear surface-burst weapon complicates the matter further. From such a burst, radioactive particles are sucked up into the atmosphere and carried long distances by prevailing winds. Since most radioactive particles are heavy, they gravitate to the earth in time and create radioactive fallout. The fallout can be lethal nearest the blast area and injurious even to those downwind a few hundred miles away unless the population is warned and takes appropriate shelter.

In a successful mass attack involving many strikes, a high percentage of the Nation's population would have to take cover to escape death and injury. Civil defense authorities urge that every American should prepare to live underground in a home shelter for at least a 2-week period and should stockpile water and provisions accordingly (*10*). In addition, it is recommended that at least one member of a family group be trained in first aid and home nursing. The family must be prepared to solve its own emergency medical and health problems as well as to assist others in need. Organized medical care may not be available until radioactive fallout has decayed sufficiently to permit surface operations. Since this condition may last for days or even weeks, survival in this period could be a starkly personal matter.

At the end of the waiting interval, the existing and emergency hospitals not destroyed should be able to activate the medical care service. The correlation of millions of sick and injured, both casualties and noncasualties, with severe destruction of target area hospital beds will press this Nation sorely to care for the large number of critically sick and injured people. Hospitals crowded with patients in priority treatment categories will not be able to admit women in normal labor. The private practice of medicine may be discontinued temporarily as the too few remaining professional people will be working to save life in the hospitals and treatment stations.

During the first 2 weeks or more following enemy attack, most people will of necessity be underground in their isolated places of refuge. Exposure to radioactive fallout on the surface must be avoided. Babies will be born in basements and shelters without professional attention with relatives and possibly neighbors serving as best they can under the circumstances. In fact, the catastrophic attack may accelerate the birth of many babies prematurely because of fear and exertion on the part of the expectant mothers.

It is at once clear that both in the "take cover" period as well as the months after attack, the home remains the basic unit in the development of an effective emergency childbirth service. Self-help and help from neighbors in the initial postattack phase and organized home delivery service programs later are prerequisites for maintaining the health and longevity of our next generation. We can expect unnecessary loss of infants, imputable to our own neglect, if we are not prepared.

Self-Help and Neighbor Help

The civil defense director of a particular area is administratively responsible for the training of the public in the self-help and neighbor-help program. He will draw on physicians and nurses, hospital and medical auxiliaries, health and welfare agencies, and other related official and private organizations to cooperate in the program. In New York, the State civil defense commission and department of health have prepared a training guide and manual entitled "Assisting at the Birth of a Baby After Enemy Attack if no Doctor is Available." The guide, which may be considered a pilot venture, represents an organizational plan and teaching outline for special groups. The training course is considered a supplement to the program of self-help and neighbor help for the injured.

The Michigan State Medical Society has prepared an instruction sheet on emergency childbirth which is being distributed by private physicians to their obstetrical patients. On diagnosis, the expectant mother receives the instruction sheet and an explanation from her physician on what she must do to help herself if an attack should take place before the end of gestation. The Police Training Foundation of Franklin Park, Ill., has published a manual for policemen who are often confronted with emer-

gency childbirth. Consisting of 64 pages with 30 illustrations, the manual is designed to serve as the basis of a training program as well as a reference for the layman in the actual handling of emergency childbirth. A suggested training course is included with the booklet.

Also, the Maternity Center Association of New York City has issued reprints of "Bomb Born Babies" (*1*), an article published in a nursing magazine in 1951; and instructional pamphlets have been prepared by the Wisconsin State Board of Health and by Georgia and Canada.

Home Delivery Service

Understandably, those hospitals able to function in areas free from fallout or where fallout has decayed to permissible levels may not be available to pregnant women at any time. Pressed by enormous medical loads and limited by lack of hospital beds, physicians and nurses cannot consider a normal delivery to be of first priority. Not only will many hospitals be jammed with a cumbersome increase in patients, but facilities may be extensively contaminated with septic exudates from surgical and burn cases as well as with dangerous wastes from the irradiative injured. Under these conditions, the expectant mother's home becomes the most practical and safest facility in the post-fallout period. Linens, toilet facilities, intimate family care, and above all, cleanliness and privacy satisfy most requirements of a safe delivery. Professional assistance should be provided to the woman in labor as soon as the medical care service can absorb this function, radiation permitting.

Inasmuch as the establishment of a home delivery service is an emergency civil defense function and because the home is the fundamental facility, the civil defense emergency welfare service (*10*) should develop the framework of organization in cooperation with the health and medical service. In each welfare center, the social welfare services division of the emergency welfare service should arrange for a home delivery service in association with the county health and medical service. As described in most State operational survival plans, the welfare center is a geographic and service unit organized by county and city welfare departments to provide emergency services of registration and information, food, clothing, housing, financial assistance, and social welfare for the surviving population. A reception city or county may have several such welfare centers, each supporting approximately 10,000 persons including resident and expected evacuee populations. Each welfare center's home delivery service should cover the same population area.

During the present survival preparedness period, each welfare center director, in cooperation with the county health and medical service, should determine expected birth rates under disaster conditions and organize sufficient numbers of mobile teams embodying trained lay and paramedical personnel ready for emergency call. Health manpower priorities for casualty care do not contemplate the deployment of professional groups including medical students to normal delivery services.

Teams of two women each should be equipped with emergency kits and trained by professional medical personnel. Public health nurses have the experience to coordinate the professional relationships of this welfare center program while the availability of trained lay midwives in some rural reception areas may mitigate the need of training still another group. For the anticipated welfare center district averaging 10,000 people, including expected evacuees, 10 teams of 2 women each should be trained in emergency delivery. Trainees should have completed basic courses in first aid and home nursing and be dependable and mature.

After fallout has decayed to levels permitting surface operations, the home delivery service may function as follows. When an expectant mother goes into early labor, the family contacts its welfare center headquarters and a home delivery service team proceeds immediately to the home. The team provides complete care for a normal delivery. At welfare center headquarters, a nurse-midwife or a public health nurse with special training stands by to assist the team by telephone or messenger, if necessary. She does not leave headquarters since she must be available to give instructions to all teams wherever they may be in the wel-

fare center area. In turn, communication is available to her from a standby physician, preferably an obstetrician, at the nearest hospital. This single physician may act as consultant to all welfare centers in the area. He determines whether or not a complicated case should be admitted to the hospital.

In this manner, the home delivery service can be managed with a minimum number of professional personnel. Yet, the home delivery service is assured of trained personnel working under continual professional direction. That this system can work efficiently is demonstrated by similar operations in rural Alaska. As the medical profession realizes the necessity of such an emergency service, they should cooperate to insure the highest quality of training of lay personnel sufficient to cope with most normal deliveries. The trainees will be expected to recognize a dangerous condition early enough to ask for transmission of the patient to a hospital.

The problem of implementation in the past has been a general want of instructional materials. This has now been met to a certain degree.

Reception area counties must carry the full burden of organization and training for the home delivery service since it is here that the program will necessarily serve the surviving population. By mutual agreement, target cities will train supplementary personnel who will work in the reception areas after evacuation under the direction of the host county civil defense organization. In sparsely populated rural counties which plan to double and triple their population with evacuees, the target city may be asked to contribute most, if not all, of the home delivery service personnel.

It should be emphasized that the development of an emergency service such as this needs careful community interpretation. Every effort should be made to discuss it with representatives of those groups which may ultimately be involved in conducting the program. Needless to say, the program must have the support of the county medical society.

Training courses should stress that the lay assistant is not expected to assume the functions of a physician. The trainee is taught that childbirth is a natural process which, in most cases, will proceed to a happy conclusion without interference. The acquired knowledge should be considered as emergency aid to be used only in the event of a disaster situation resulting from enemy attack when professional assistance is not available. It will be used when women in normal labor cannot be admitted to hospitals which are crowded with seriously sick and injured patients whose care and treatment categories have priority.

Health and medical service personnel must be an integral part of the program in order to help select supplies as well as to provide training and controls. Welfare, responsible for the basic framework of organization, transportation, communications, and supplies, is also responsible for the success of this emergency civil defense program.

Summary

An appraisal of assumptions underlying present planning to meet a possible thermonuclear attack on this Nation evinces the need for an emergency childbirth program. The development of a program to insure the survival of our unborn babies should be the responsibility of health and medical as well as emergency welfare services. Priorities in medical care for millions of expected casualties, the restrictions placed on the medical care service by loss of hospital beds and lack of professional personnel and supplies, and hazards of radioactive fallout force upon us the programs of self-help and neighbor help and a home delivery service. It is hoped that the discussion of these programs will stimulate civil defense, private medicine, and public health to prepare for the problem of emergency childbirth. A strong emergency childbirth program ready to serve at any time will insure the continuance of the American Nation in spite of a possible thermonuclear war.

REFERENCES

(*1*) Hogan, A.: Bomb born babies. Pub. Health Nursing 43: 383–385, July 1951.

(*2*) Fetter, R., Whitridge, J., Jr., and Welch, J.: Disaster insurance for mothers and babies. Bull. Maternal Welfare 4: 9–13, March–April 1957.

(3) Green, J. M.: Emergency care of the obstetrical patient. Nursing Outlook 6: 694–696, December 1958.
(4) Clark, A. L.: Childbirth during disaster. Nursing World 133: 15–17, May 31, 1959.
(5) Bartholomew, R. A.: What to do at emergency childbirth in times of disaster. Atlanta, Georgia Department of Public Health, 13 pp.
(6) New York State Department of Health and New York State Civil Defense Commission: Assisting at the birth of a baby after enemy attack if no doctor is available. Albany, September 1954, 24 pp.
(7) Webb, J. F.: Management of emergency delivery. Ottawa, Canada, Department of National Health and Welfare, Civil Defense Health Service, 1957, 10 pp.
(8) White, G. J.: Emergency childbirth. A manual. Franklin Park, Ill., Police Training Foundation, 1958, 62 pp.
(9) Wisconsin State Board of Health: Protection of mother and infant in case of emergency delivery. Madison, September 1955, 8 pp.
(10) U.S. Office of Civil and Defense Mobilization: What you should know about the national plan for civil defense and defense mobilization. Washington, D.C., U.S. Government Printing Office, December 1958, 31 pp.

Education Note

Michigan's Continued Education Service. Among the short-term courses offered for 1961 by the continued education service of the University of Michigan School of Public Health are the following:

Institute on Newer Aspects of Public Health for Health Officers, March 27–31. This second advanced refresher course in the series on "Newer Health Problems" emphasizes leadership. It is conducted primarily for health officers from the central portions of the United States and Canada, but, to the extent that space is available, applications will be accepted from health officers from other areas.

Fifth Workshop in Public Health Dentistry—Local Public Health Dental Programs, June 19–23. For local public health dentists, health officers, State directors of dental programs and maternal and child health programs, interested personnel of the Public Health Service, Children's Bureau, State and local official and voluntary health agencies, and school officials.

Included in the program are studies of local dental programs, administration, coordination of State and Federal objectives, content, and methods, epidemiological principles and application, statistical analysis, operation of clinics, preventive dentistry, specialized dental programs, and educational principles and methods.

Requests for announcements of the program or published proceedings may be addressed to Director, Continued Education, School of Public Health, University of Michigan, Ann Arbor.

Expanded Nutrition Activities. The Massachusetts Institute of Technology will create a new department of nutrition, food science, and technology, formed around the existing food technology department. The extended curriculums and research activities will place more emphasis on the basic science and biological aspects of nutrition.

The new department will be headed by Dr. Nevin Scrimshaw, director of the Institute of Nutrition of Central America and Panama (INCAP) and regional adviser on nutrition of the Pan American Health Organization.

The cooperative relationship to be maintained between INCAP and M.I.T. will offer M.I.T. students opportunity to pursue studies in association with INCAP.