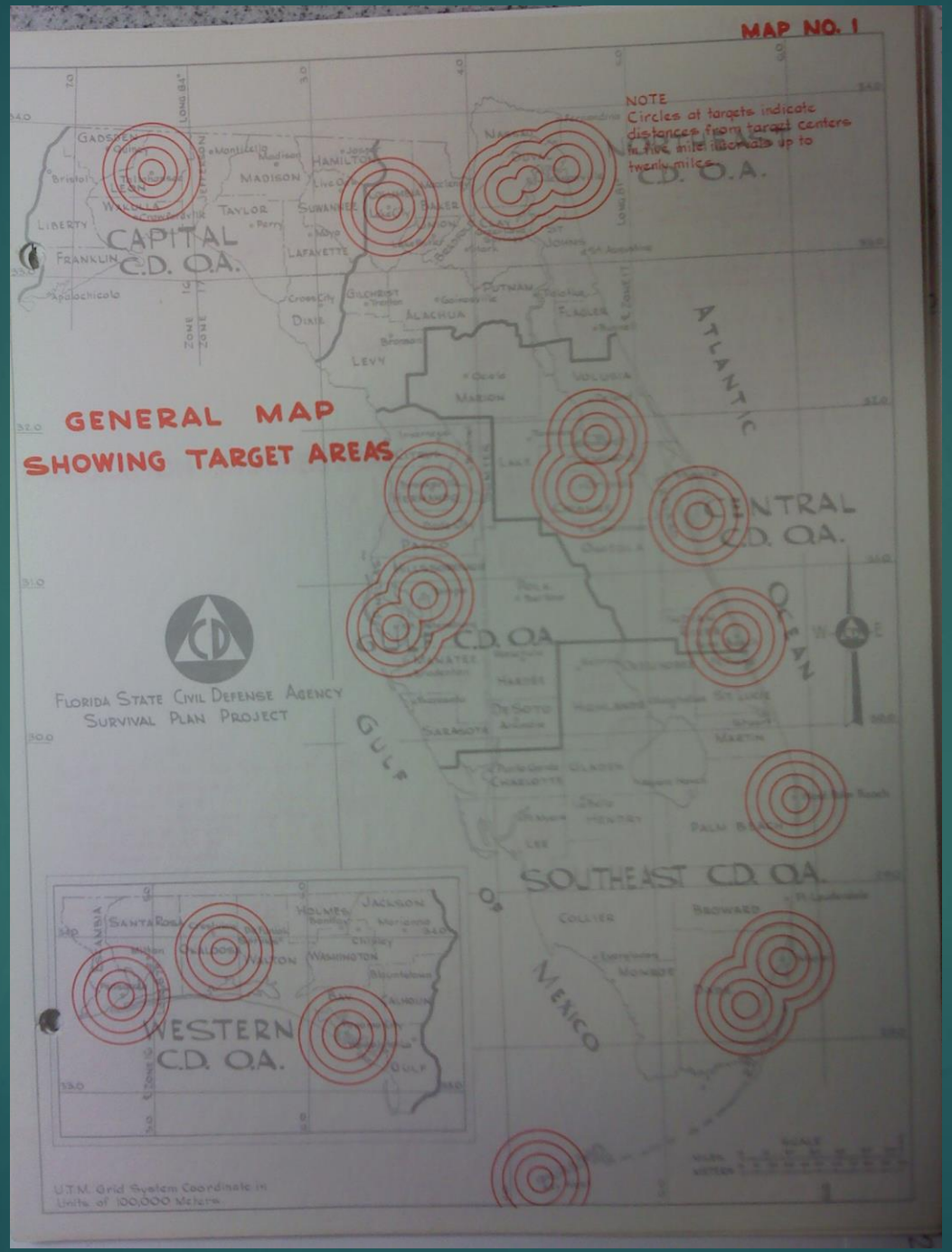
Doctors and the Bomb: Civil Defense Training and the Emergence of Cold War Medical Activism

JOHN WHITEHURST

FLORIDA STATE UNIVERSITY

19TH SEPTEMBER 2015


MAP NO. 1
NOTE
Circles at targets indicate distances from target centers in five mile increments up to twenty miles
GENERAL MAP
SHOWING TARGET AREAS
CAPITAL C.D. O.A.
C.D. O.A.
CENTRAL C.D. O.A.
C.D. O.A.
SOUTHEAST C.D. O.A.
WESTERN C.D. O.A.
ATLANTIC
OCEAN
GULF
MEXICO
FLORIDA STATE CIVIL DEFENSE AGENCY
SURVIVAL PLAN PROJECT
U.T.M. Grid System Coordinate in Units of 100,000 Meters


OCDM REGIONS
ALASKA
WASHINGTON
EVERETT
OREGON
IDAHO
MONTANA
8
NORTH DAKOTA
MINNESOTA
SOUTH DAKOTA
WYOMING
6
NEBRASKA
IOWA
CALIFORNIA
NEVADA
UTAH
SANTA ROSA
7
ARIZONA
COLORADO
DENVER
KANSAS
MISSOURI
4
ILLINOIS
INDIANA
MICHIGAN
BATTLE CREEK
OHIO
PENNSYLVANIA
2
OLNEY
KENTUCKY
VIRGINIA
1
HARVARD
NEW MEXICO
OKLAHOMA
ARKANSAS
TEXAS
5
DENTON
LOUISIANA
TENNESSEE
N. CAROLINA
MISSISSIPPI
ALABAMA
S. CAROLINA
3
THOMASVILLE
FLORIDA
Territories, Possessions, etc. | Serviced By
District of Columbia . . Region 2
Canal Zone, Puerto Rico, Virgin Islands . . . . Region 3
American Samoa, Guam, Hawaii . . . . . Region 7
REGIONAL HEADQUARTERS
Effective date March 1, 1958


GUARANTEED
LEGAL LOANS
LOANS LEGAL
INQUIRE
CLUB PEACHTREE
DINE and DANCE
EXCELLENT FOOD
ARTHUR MURRAY
DINE-DANCE
EQUIPPED for SERVICE
SOUTHERN BELL


ey've got
eir eye on
EHI
once de Leon
ALL PARK
LVS
ACON
230 TODAY
Coca-Cola

REGION 3 NEWSLETTER

DEPARTMENT OF DEFENSE
OFFICE OF CIVIL DEFENSE
REGION THREE
THOMASVILLE, GEORGIA

Dial F. Sweeny
Regional Director

Pete Craig
Public Information Officer

Alabama Georgia North Carolina Tennessee
Florida Mississippi South Carolina Canal Zone

Vol. 3 JUNE 1965 No. 6

VICE PRESIDENT LAUDS CIVIL DEFENSE FOR WORK IN MIDWEST DISASTER AREAS

WASHINGTON---Vice President Hubert H. Humphrey made a surprise appearance before the U. S. Civil Defense Council Meeting here May 12 to praise local civil defense personnel for the job they are doing on strengthening the Nation against the possibility of nuclear attack.

He spoke at the Council's three-day midyear conference in its closing session at the Sheraton Park Hotel. The meeting involved more than 300 local civil defense directors and others associated with civil defense from all parts of the Nation.

The Vice President recently toured tornado and flood-damaged areas in the midwest where he had an opportunity to observe State and local civil defense organizations in action.

"I saw unbelievable trouble and vast damage," he said. "The tornadoes which struck in April and the flood conditions along the rivers there resulted in unprecedented disaster situations in a number of places. But civil defense was there. Civil defense was on the job. We cannot estimate what pandemonium would have ensued if you had not been prepared, trained and ready. In one area I saw more than 1,500 homes destroyed by tornadoes as effectively as if they had been hit by a bomb."

In praising civil defense for outstanding performance in disaster situations, the Vice President warned that it must utilize such training and preparation to offset the less likely but far more dangerous prospect of atomic war.

"Days of uncertainty lie ahead," he said. "If the American people become tired or careless, freedom could die...you are part of the total mobilization of the communities, States and Nation to help maintain the peace and safety of the country. It would be suicide for us to plan for less than defense in depth -- and you are a part of the Nation's total defense force."

* * *

MOTHER-OF-YEAR. Mrs. Emma P. Flowers, Director-Coordinator of Dale County-Ozark Civil Defense is Alabama's Mother-of-the-Year. When she competed in the national selections in New York recently she was guest of the Waldorf Astoria, one of the Big City's famed hotels. What impressed her most? "The hotel has a huge fallout shelter," she wrote friends back home. Mrs. Emma has served in civil defense since 1959. Prior to that she served in every capacity in the Ozark city school system---from student to superintendent. Among her many honors, she was Alabama Woman of the Year in 1953 and Civil Defense Woman of the Year for Region Three in 1960-61.

* * *

DISASTER HOSPITAL TRAINING PLAN TESTED BY FLORIDA CIVIL DEFENSE

A pilot program designed to train medical and staff personnel in the effective use of 200-bed Packaged Disaster Hospitals is underway in Florida and is being closely observed by public health and civil defense officials.

Under the pioneer Florida plan, courses are conducted in the communities where the emergency hospitals have been prepositioned and concentrated on the staffs of existing community hospitals which would have the responsibility of operating them in an emergency.

The pilot program, assisted by OCD matching funds, will provide training in six cities, Gainesville, Panama City, Tallahassee, Madison and Lake City. The training program is directed for Florida State Civil Defense by the Florida Institute of Continuing Studies, using medical doctors and hospital administration specialists from the University of Florida Medical Center as instructors.

The Florida concept of operations emphasizes assignment of Packaged Disaster Hospitals to existing hospitals for storage and operation. Recommended methods of employment are; (1) use the disaster hospital to expand existing facilities with parent hospital furnishing trained cadre and key personnel, (2) operate as an independent hospital, using surviving medical personnel and supplies, (3) use materials as an auxiliary supply for existing hospital, or (4) use as a First aid station.

The pilot training program has the following objectives (1) familiarize planning officials with capabilities, limitations and methods of employment, (2) train key medical and hospital personnel in installation and operation of packaged equipment, (3) acquaint responsible personnel with logistical support necessary, and, (4) develop for each community a Disaster Hospital Plan consistent with State and local civil defense plans and coordinated with supporting services.

DHEW plans to preposition 55 packaged hospitals in Florida valued at $2.5 million. A total of 383 packaged hospitals will be prepositioned throughout Region Three with a value of approximately $17 million. 287 packaged hospitals have already been prepositioned in the Region.

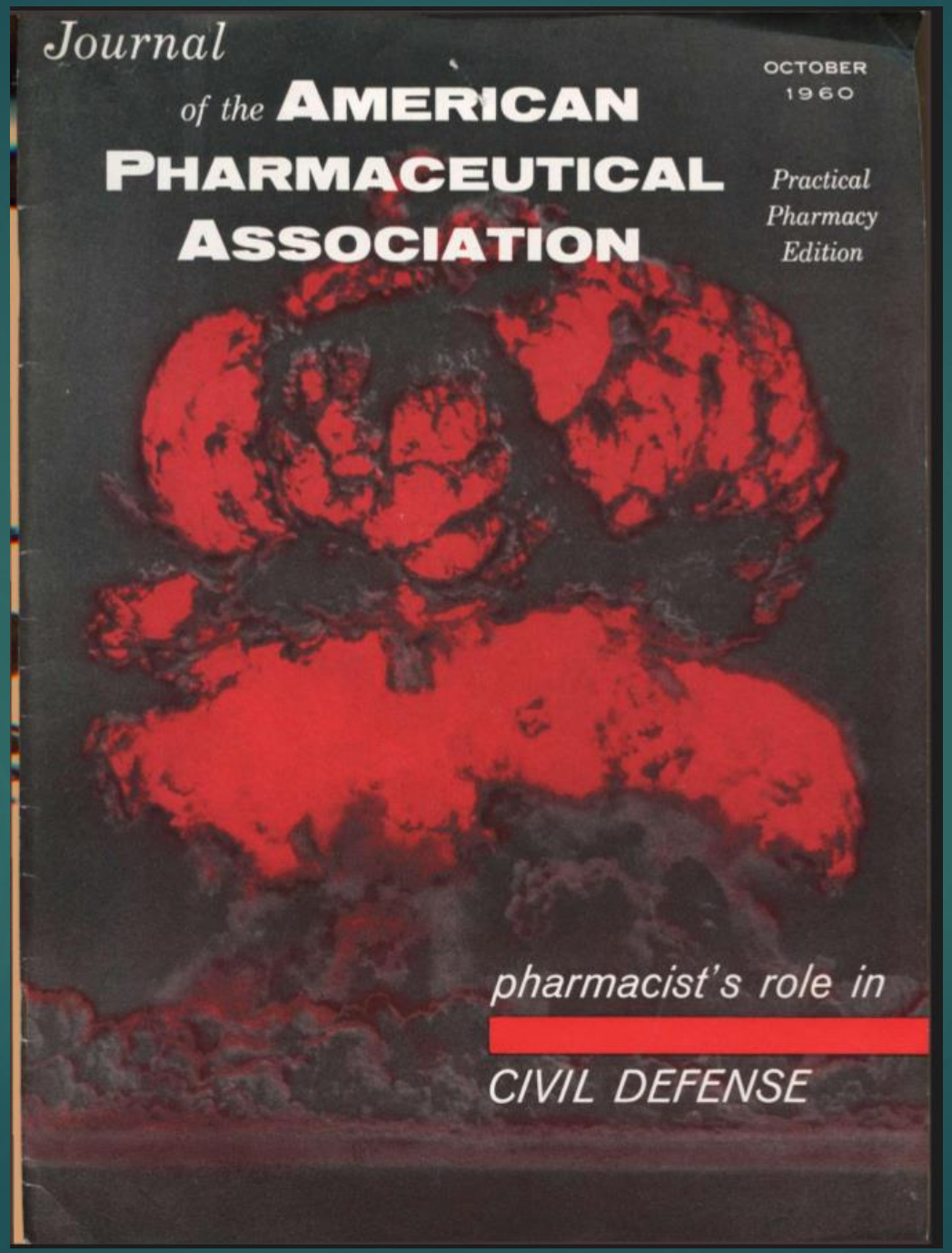
* * *

SHELTER IN NEW SCHOOLS. When Alabama and North Carolina legislatures recently authorized huge bond issues for state-wide construction of new schools, both State Civil Defense Directors were quick to begin campaigns to have fallout shelter incorporated in the designs for the new buildings. Local directors in both states were urged to immediately contact their local school boards and other education leaders to acquaint them with the need for fallout protection, and the method of obtaining shelter at low or no cost by applying "slanting techniques" during the initial design stage. Local directors were reminded of OCD's free architectural advisory service in applying slanting techniques to assure fullest exploitation of low cost shelter potential.

* * *

STRAWS IN THE WIND. When Mayor Danny Guice campaigned for re-election as Mayor of Biloxi, support of an effective civil defense was advertised as one of his major planks. He won. Colonel Al Key, Veteran Civil Defense Director at Meridian, resigned to run for Mayor. He won, too.

* * *


Journal
of the AMERICAN
PHARMACEUTICAL
ASSOCIATION
OCTOBER
1960
Practical
Pharmacy
Edition
pharmacist's role in
CIVIL DEFENSE

RECEIVED
OCT 13 1941
State Defense Council of Florida
Tallahassee, Florida

[Reprinted from the Journal of the American Pharmaceutical Association, Practical Pharmacy Edition, Vol. II, No. 7. July, 1941.]

THE PHARMACIST IN CIVILIAN DEFENSE

WITH the entire country mobilizing for civilian defense in the event of an emergency it is appropriate that pharmacists make a careful study of how they can best serve in the program and, as a result of such study, fit themselves into the work where they can do the most good.

In general, the civilian defense program has three general objectives: (1) the protection of life, (2) the protection of property, and (3) the maintenance of morale. Since England has been face to face with emergency conditions for many long months, it is only natural that the program in this country will be developed along lines which experiences in England have shown to be most effective and efficient. Under other circumstances such a program would have to be built on a theory of what should be done in the event of an emergency but the development of a practical program to meet actual conditions in England provides a pattern for this country to follow.

In considering the first objective of the civilian defense program, the protection of life, the first question which arises is the advisability of making every retail pharmacy in the country a potential first aid station. England has found such a plan inadvisable. The average pharmacy has so much glass in windows, showcases and in bottle stock that it would be a very dangerous spot during an explosion. Furthermore, in most pharmacies the counters, showcases and display tables take up the greater share of the floor space and there is not sufficient room to set up a first aid station. The corner pharmacy has always been considered a first aid depot to which an injured or suddenly ill person can be taken for help, and although it has the space to accommodate one or two such cases at a time, it could not take care of fifty or a hundred sudden casualties. Therefore, retail pharmacies in England are not used as first aid stations and, in all probability, they will not be so used in this country.

Although his pharmacy is not suited for use as a first aid station, the pharmacist himself would make an excellent first aid warden. Those pharmacists who have been graduated during the past few years have had instruction in first aid and all pharmacists, through their knowledge of drugs and medicines and their years of experience in working hand-in-hand with physicians in saving lives, have acquired a calmness and stability under the pressure of responsibility that is a necessary qualification of one who is to render first aid in an emergency. It is advisable that pharmacists, as well as physicians, refresh their knowledge of first aid techniques, however, and in this need the colleges of pharmacy can serve by offering suitable extension courses.

The pharmacist can also serve in the protection of human life by making his pharmacy a supplementary source of supply of such drugs and medicines as would be required in an emergency. It is probable that hospitals will serve as first aid bases and that mobile units will operate from them, but few hospitals have the pharmaceutical staffs or equipment which would be required to manufacture gallons of antiseptic solutions, burn dressings, and other medication in an emergency of considerable proportions. By working with the physicians who will direct the type of treatments which will be used for various types of casualties and

Donaldson
D

civil defense review

COUNCIL ON NATIONAL DEFENSE
AMERICAN MEDICAL ASSOCIATION
535 NORTH DEARBORN STREET
CHICAGO 10, ILLINOIS

Volume 10, No. 1 February, 1960 Circulation 2,100

OPERATION PREP PITT III

On May 7, 1960, the University of Pittsburgh Football Stadium will be the setting for the third edition of Operation Prep Pitt. This annual medical civil defense disaster drill will feature 1,000 simulated casualties. The event will be staged by students from all of the health professions. Over 4,500 professional and allied medical and health personnel will participate in demonstrating the management of mass casualties in an Emergency Principal First Aid Station and the OCDM 200-bed emergency hospital as well as at the more than ten participating community hospitals.

Also featured will be emergency first aid, communications for hospitals and the transport of the injured. Thirty-seven community agencies are being asked to support the exercise. The public will be invited to observe the activity at first hand while nationally prominent experts in the field of trauma will critically review the entire operation. Exhibits are planned to illustrate the detection of biochemical agents and radioactive materials. Self-help techniques and an effective shelter from radioactive fallout will be demonstrated.

Operation Prep Pitt III is sponsored by the Allegheny County (Pennsylvania) Medical Society, the Hospital Council of Western Pennsylvania, the MEND Program of the University of Pittsburgh and the Office of Civil Defense. Further information may be obtained by writing David W. Clare, M.D., Chairman, Disaster Committee, Allegheny County Medical Society, Jenkins Building, Pittsburgh 22, Pennsylvania.

CD EMERGENCY HOSPITAL EQUIPMENT USED IN SNOWSTORM

Civil defense emergency hospital equipment was pressed into service during the snowstorm in eastern Nebraska the last week in 1959. Many motorists were stranded by the blizzard. Approximately

CIVILIAN PHYSICIANS ATTEND MANAGEMENT OF MASS CASUALTIES COURSE

Two civilian physicians, Francis C. Jackson, Assistant Professor of Surgery at the University of Pittsburgh School of Medicine and William C. Spring, Jr., of the School of Public Health and Administrative Medicine at Columbia University, attended the February 24-28, 1958 Management of Mass Casualties course at Brooke Army Medical Center, Fort Sam Houston, Texas. The course is conducted by the Army Medical Service School.

NATIONAL ADVISORY COMMITTEE ON RADIATION ESTABLISHED

The Public Health Service recently established a National Advisory Committee on Radiation to plan epidemiological studies, radiation monitoring of milk, water, and air, and state radiation safety measures. The new committee will be under the chairmanship of Dr. Russell H. Morgan of Johns Hopkins, the Surgeon General's new special consultant on radiation.

NEW YORK TRAINS EMERGENCY HOSPITAL TEAMS

In New York State, thirty teams of Emergency Medical Service Volunteers have been trained since last September to set up and operate the FCDA 200-bed emergency hospital. A team is composed of 76 physicians, nurses, medical aides and other hospital personnel. Each team will form the core of a staff of 220 which would be needed to keep the hospital in operation. By May, 1958, twenty-four more such teams will have been trained.

NEW PLASTIC BLOOD PACK UNIT IS SAVER OF SPACE

Armed services have gone into production with a standardized plastic blood pack unit which is markedly superior to glass from the standpoint of bulk and weight. A twin improvement is the newly developed disposable blood refrigerant shipping container which is lighter than cartons used previously and which makes returns of "empties" unnecessary. It is virtually certain that the plastic transfusion unit will take the place of glass equipment as far as the military is concerned.

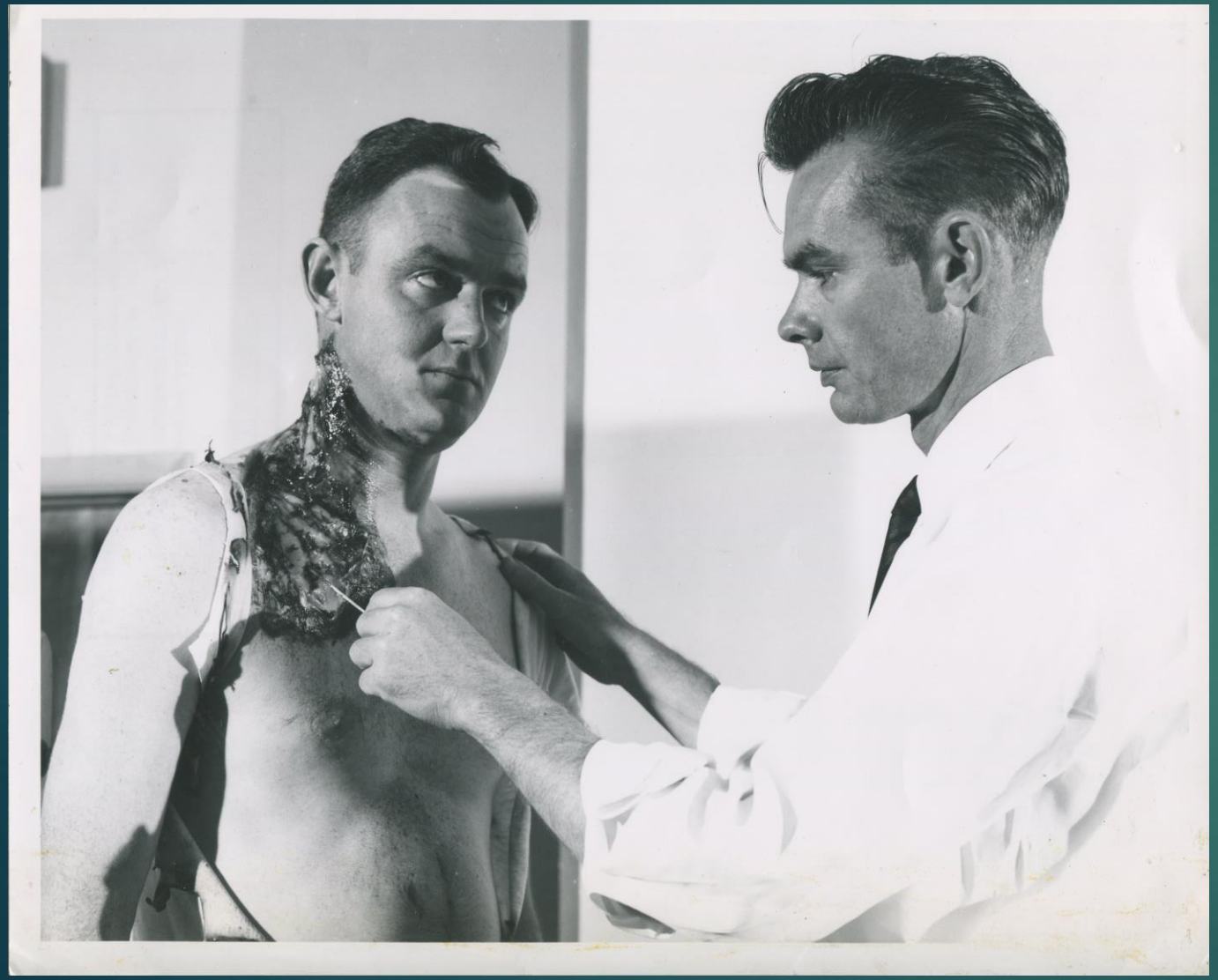
INSTITUTE ON INTERPROFESSIONAL PLANNING FOR DISASTER RELIEF

In a unique cooperative effort, representatives of all branches of the medical and associated professions in Greater Cleveland met last January 29, to discuss an over-all plan for disaster relief. The attendance was over 1,100

Entrance--EITC, Brooklyn, N.Y.


Rescue Training Facility


FEDERAL
CIVIL DEFENSE
ADMINISTRATION
REGIONAL
OFFICE
REGION 3



TENTH
COUNTY MEDICAL SOCIETIES
CIVIL DEFENSE CONFERENCE
NOVEMBER 7-8, 1959

SPONSORED BY

COUNCIL ON NATIONAL DEFENSE
AMERICAN MEDICAL ASSOCIATION

Talks on National Defense

The Physician's Role in a Nuclear Disaster

by

Edward Teller, Ph.D.

Thank you for your most kind words. I know that doctors are very wonderful, not only as you described in diagnosis, but in prescription also, I know that they are ingenious and inventive, so it does not surprise me too much to find that this time I have been described as the medium by which nerves should be soothed. And having been so prescribed, I will attempt immediately to proceed and do just that.

I do not know how many of you have read or seen "On The Beach". To my mind it is very frightening, not because it predicts that the human race will be wiped out by the next war. It cannot be done. If somebody wanted to do it, he could have tried much more successfully, not with our clumsy atoms, but with the much more agile bacteria which have been around a much longer time.

What frightens me rather is the description of our state of society. If there is disaster, what should we do? Let's throw up our hands, let's take suicide pills, and let's die. Is that the solution?

Ladies and gentlemen, a society where a book is written about this topic, where this book is a best-seller, where a movie is made about this topic, where none of the reviewers point out that this is dangerous nonsense, and where this book and this movie are great successes, I say there is something wrong with the state of mental health of that society, and that is what scares me.

Now our job here is to discuss what can be done in case of an over-all disaster. This disaster, nuclear war, is not something for which we have properly prepared.

Presented at the Eleventh County Medical Societies Conference on Disaster Medical Care, Palmer House, Chicago, Illinois, November 4-6, 1960. Sponsored by the Council on National Security, American Medical Association.


I GAVE MY TOOTH
TO SCIENCE
This card shows that I
am a member of the
RATION TOOTH CLUB
with full privileges, and
am entitled to wear the
membership button.
Because science needs my teeth when they fall
out, I will continue sending them to "Operation
Tooth".
Signature

1963

SWARTHMORE COLLEGE PEACE COLLECTION RECEIVED

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STATEMENT OF PURPOSE

Physicians for Social Responsibility is an association of doctors concerned with the challenge of the nuclear age: Man's scientific knowledge now provides an unprecedented opportunity for medical and social advance; yet thermonuclear war poses a supreme threat to the health and survival of mankind.

We believe that the physician's response to this challenge must stem from his dual role as scientist and as clinician. As a scientist he is a custodian of technical information, trained in the analysis of complex problems, and experienced in the objective presentation of data. It is the physician's responsibility as scientist to study the medical consequences of nuclear testing, of attack by chemical or biological weapons, and of thermonuclear war. Other relevant problems include such issues as the psychologic factors in the arms race, alternative approaches to the resolution of conflict, and the peaceful uses of atomic energy. It is the physician's further responsibility as scientist to share his knowledge with the public, in order to make possible rational discussion and informed decision-making by the community.

But the physician's responsibility goes beyond his role as scientist. He is also a clinician, often forced to make decisions affecting human life while relying on data which admit of no certain conclusions. He is an active participant, not only an impartial supplier of information.

(Continued overleaf)

PHYSICIANS FOR SOCIAL RESPONSIBILITY 416 Marlborough Street, Suite 17, Boston 15, Mass.

Milk Content Found Safe

By the Associated Press

Radioactive content of milk collected during May and June from 12 sampling stations across the country remained far below levels currently considered permissible.

Reporting this today, the Public Health Service said the Strontium 90 count in milk samples from the St. Louis area dropped from a high of 37.3 micromicrocuries per liter in April to 34.6 in May and then to 11.2 in June.

The Strontium 90 count for the St. Louis area in May was the highest among the samples, as it had been previously.

But the big drop in June left Spokane with the high count that month, 22.1 micromicrocuries of Strontium 90 per liter.

In May the Strontium 90 count for Atlanta, Ga., was 22.8, to make it second highest among the samples, and in June it was the Fargo, N. Dak.-Moorhead, Minn., area that was second, with a count of 20.6.

The maximum concentration of Strontium 90 recommended by the National Committee on Radiation Protection and Measurments as permissible for lifetime exposure of the general population is 80 micromicrocuries per liter.

curity policing system for the drill exercise itself. The latter consisted of a cordon of traffic lanes and the security of the disaster and hospital areas. Thus, persons without proper authority to enter the restricted areas came under control of the security police. A communications system was also set up to provide adequate contact between all units. Several students who were experienced amateur photographers were assigned to take extensive documentary photographs during the drill.

THE PROFESSION'S CIVIL DEFENSE RESPONSIBILITIES

Gunnar Gundersen, M.D.

It is an honor for me to participate in this civil defense conference, and I am delighted that you invited me. I always consider it a pleasure to meet and talk with dedicated individuals. Yes, I think of you as dedicated—serving a cause in which the American people generally are complacent and apathetic. And, I'm sorry to say, many medical and health personnel share this complacency and apathy. But you, by your very presence here, demonstrate that you are indeed laboring in the service of mankind.

One of my last duties as president-elect of the American Medical Association was to address the Sixth Annual National Medical Civil Defense Conference in San Francisco sponsored by the A. M. A. Council on National Defense. It is at meetings such as that one—and this one here today—that the responsibility of the medical profession in civil defense affairs is manifested. And that is what I want to talk about briefly today—the medical profession's civil defense responsibilities.

The diligent and sustained work which is being given to civil defense by the A. M. A. is not a new activity of organized medicine. Nearly 13 years ago, the A. M. A. appointed a special committee to study emergency medical services during war or grave national emergency. The medical profession was aware of the problem and alert to the need for its solution fully five years before the federal government enacted civil defense legislation.

The Association is most fortunate in having such experienced and energetic physicians to serve on the Council on National Defense and its Committee on Civil Defense. Through them, the Association has followed a positive, realistic, and sustained policy of active participation in medical civil defense affairs.

The 85th Congress provided for greater federal leadership and financial assistance to the states in the development of civil defense plans and preparations. The change in the declaration of policy in the Federal Civil Defense Act to make the responsibility for civil defense a joint one between the federal government and the several states and their political subdivisions is indeed a long-awaited and much-advocated step in the right direction. But, of course, only time and future meetings of Congress will determine its implementation and consequent effectiveness.

President, American Medical Association.

Mass Emergency Care

Meanwhile, the average individual physician and his role in the larger civil defense picture is of paramount importance. Usually, a physician thinks of emergency medical care in terms of treating one person. However, it seems to me that if the profession is to discharge its responsibility effectively in any disaster situation the thinking of such physicians must be reoriented. Medicine must think in terms of providing emergency service on a mass basis.

I know that your efforts have been in that direction. You know the value of proper collection, evacuation, sorting, admission, and reception of patients to medical facilities under disaster conditions. Each group involved in this process—the rescue and warden, transportation, and hospital clerical services—look to the physician for proper medical guidance in their work. Physicians who work with such groups are rendering services equally as valuable as the surgeon in the operating room. All are important members of the medical team.

Medical service rendered in an emergency differs from that in civilian practice. The assignment of priorities for care is a most important medical duty. As such, it should be performed by the most experienced physician on the scene. Here judgment must be exercised to a degree the physician seldom is called upon to make.

SPECIAL ARTICLES

THE MEDICAL CONSEQUENCES OF THERMONUCLEAR WAR

Editor's Note

A GROUP of physicians and physicists, intensely interested in the whole problem of thermonuclear war and its medical consequences, have collaborated in the preparation of the papers that compose this symposium.

The following introduction has been submitted by a committee representing the Special Study Section of the Physicians for Social Responsibility, an organization that originated in Boston several months ago. The committee consists of Drs. David G. Nathan, research associate in medicine, H. Jack Geiger, instructor in preventive medicine, and Victor W. Sidel, teaching fellow in medicine, all at the Harvard Medical School, and Bernard Lown, assistant professor of medicine, Department of Nutrition, Harvard School of Public Health.

Introduction

THE following articles are written to describe the biologic, physical and psychologic consequences of a thermonuclear attack. Much has appeared in the lay press and in scientific journals on these subjects. Why should physicians also be especially interested in the problem? The answers are clear. No single group is as deeply involved in and committed to the survival of mankind. No group is as accustomed to the labor of applying the practical solutions to life-threatening difficulties. Physicians are aware, however, that intelligent therapy depends on accurate diagnosis and a realistic appraisal of the problem. The object of these articles is therefore the presentation to physicians of some of the facts of thermonuclear warfare.

Descriptions of a thermonuclear attack and its sequelae are limited by the unavailability of all the pertinent data and by the need to rely upon a host of uncertain assumptions. The limitations of the data result in part from governmental classification and in part from the happy fact that few nuclear weapons (and no thermonuclear weapons) have been exploded over major cities. Information resulting from coral-reef blasts may not be applicable to cities of concrete, steel, glass and macadam. The major assumptions, however, lie in the political and military sphere. It is obvious that there is no certain way of predicting the nature of a thermonuclear attack on the United States. Since no single system of defense can meet all the possible conditions of attack, there is no sure way of predicting the efficacy or futility of a given civil-defense program. Numerous models of thermonuclear war have been presented to the public in recent years. The models range from massive single strikes against missile bases to repeated multimegaton saturation bombing of cities. In the former, significant protection might be provided for individuals in cities by adequate shelters against radioactive fallout. In the latter, no system of shelters would spare the people of the urban and industrial centers from blast and fire.

This is an age in which the scientific and technologic revolution has provided military forces with an exponential growth in the power of weapons. The fission bombs dropped over Hiroshima and Nagasaki represented a thousandfold increase in destructiveness as compared to their chemical predecessors; the development of fusion bombs represents a further thousandfold multiplication. Guided missiles, antimissile missiles, neutron bombs and manned space platforms all influence the validity of plans for civilian protection. The rapid rate of arms development has been reflected in the changing and at times contradictory Civil Defense Program. The public seeks the facts and a coherent policy. Yet the magnitude of the spiraling arms race, the complexities of the cold war and the ever increasing size of the Government create a broadening gulf between citizen and decision-making process. It is essential that physicians, in their roles as protectors of the health of the community and advisors to their patients, become fully informed.

Any formulation of the subject of thermonuclear war must state its assumptions regarding the type of attack. The assumptions chosen by the authors of the following papers are those of the Joint Congressional Committee on Atomic Energy (the Holifield Committee). The Committee heard testimony from many authoritative sources and arrived at a hypothetical attack, which its members, in 1959, considered a "realistic possibility." Of course, the attack may be less severe; on the other hand, in the light of recent thermonuclear-weapon development, the Committee report may be an underestimate. The 1446-megaton attack on missile bases and urban-industrial complexes of the United States envisaged by the Committee is probably an underestimate in the era of the 100-megaton high-altitude explosion, tidal-wave and fire-storm production and rapid advances in missile technology. Ervin and his associates describe the immediate sequelae for Boston and Southern New England of the attack outlined by the Committee. The authors assume a single strike, although it might be expected that an enemy would not be content with a single blow. The choice of Boston and Southern New England as the representative attack site is an inverse type

Reprinted from the *New England Journal of Medicine*
266:1126-1135, 1174 (May 31), 1962

EXCERPTS FROM REMARKS OF SENATOR JOHN F. KENNEDY

For Release Upon Delivery

THE INCREASING PERILS OF RADIOACTIVITY

No issue has more meaning for our daily lives -- for the health of our children, our life expectancy, the food we eat and the very air we breathe -- than the threat of radioactivity and strontium contamination. Until now we have considered this problem largely in terms of "fallout" from atmospheric bomb tests. But increasingly urgent also will be the dangers created by the waste disposal which is an inevitable by-product of all peace-time as well as military nuclear enterprises. There is a slow but irresistible multiplication of waste materials, whose hazards a few years from now could become quite considerable unless we make forward plans.

I know that is is not easy to discuss these issues which both in Government and in the public mind are shrouded in mystery if not secrecy. But we have seen very recently -- in the announcement and aftermath of the Argus tests -- how great these perils are and how stubbornly our Government has resisted a fresh look at the danger of fallout.

Increasingly there has been a sharp division of opinion between the scientist and the Government official on these problems. From the Government we hear only of the difficulties of achieving inspection and control systems; from most scientists we learn that this is well within range of practical scientific achievement. From the Government we receive word of low fallout of megaton bombs; from the professional scientist we learn that the Government has vastly overestimated the rate of strontium "decay". The Government reacts apathetically to discussion of new means of waste disposal; practically every sanitary engineer who has studied the problem has expressed grave concern.

T R E A T Y

banning nuclear weapon tests in the atmosphere, in outer space and under water

The Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland, and the Union of Soviet Socialist Republics, hereinafter referred to as the "Original Parties",

Proclaiming as their principal aim the speediest possible achievement of an agreement on general and complete disarmament under strict international control in accordance with the objectives of the United Nations which would put an end to the armaments race and eliminate the incentive to the production and testing of all kinds of weapons, including nuclear weapons,

Seeking to achieve the discontinuance of all test explosions of nuclear weapons for all time, determined to continue negotiations to this end, and desiring to put an end to the contamination of man's environment by radioactive substances,

Have agreed as follows:

Article I

1. Each of the Parties to this Treaty undertakes to prohibit, to prevent, and not to carry out any nuclear weapon test explosion, or any other nuclear explosion, at any place under its jurisdiction or control:

(a) in the atmosphere; beyond its limits, including outer space; or underwater, including territorial waters or high seas; or

bath H A. S.