
EPIDEMIC AND DISASTER AID

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In the November 1950 issue of the CDC Bulletin there appeared an article on the subject of Epidemic and Disaster Aid. This article included the following:

- Part I - Disaster Aid of Long Ago
- Part II - A Natural Disaster at Texas City
- Part III - The Northwest Flood

With the purpose in view of bringing readers of the CDC Bulletin up to date, a summary of Public Health Service participation in the recent flood disaster in Kansas and Missouri is presented here. The flood situation in Oklahoma was nominal and, therefore, CDC participation was limited to the furnishing of a small amount of insecticide and the loan of a few men then on duty in Oklahoma.

PART IV THE MIDWEST FLOOD OF 1951

The general magnitude and seriousness of the recent flood in Kansas, Missouri, and Oklahoma is well known. This is crystallized in the statistics which appeared in an article in the September-October issue of "Military Engineer" by an Officer of the Corps of Engineers (see table 1). Few lives were lost, but the cost was obviously the greatest in the history of floods in this country.

Because of the strategic location of the Federal Security Agency Regional Office at Kansas City, Mo., the Regional Medical Director was designated by the Surgeon General to act as Director of all Public Health Service disaster aid activities in the States of Kansas and Missouri, and CDC was directed to furnish assistance as requested to the limit of its facilities.

The flood in Kansas became serious during the early part of July. Upon the request of the State Sanitary Engineer of Kansas, the 100 g.p.m. truck-mounted water purification unit and collapsible water tanks stored at Kansas City, Kans., under the care of the Office of Midwestern CDC Services (now Kansas City Field Station) were sent the night of July 11 to Ottawa, Kans., where the water plant had been inundated. This unit purified water for approximately 10,000 people during a period of 2 weeks. It is interesting to note that the difficulty of high turbidity of the raw water was overcome by mixing, coagulating, and settling in tanks prior to the passage of the water through the pressure filter. The mixing was accomplished by the use of an outboard motor. Without doubt, ingenuity has an important place in disaster aid.

Most of the sanitation activities in connection with a flood begin after the flood waters recede. The domestic water supply, however, is a noteworthy exception whenever it is affected. When the municipal water supply or the private well supply becomes inoperative, some steps must be taken immediately to provide a source for minimum needs, particularly drinking and culinary water needs. A second truck-mounted water purification unit and four collapsible tanks were transferred from Tyler, Tex., to the flood area on July 13. This served in the Mission area of Kansas City for a period of time. The low pressure in the Kansas City, Mo., municipal water system caused by the inundation of one pumping station and the loss of water through this part of the system led to the distribution of chlorine-impregnated tablets to the people through the medium of drug stores. Persons presenting a labeled envelope were given a small supply of the 8 mg. tablets, each one of which adequately disinfected a quart of water. When the stock pile of 5,000,000

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Table 1

**FIGURES INDICATING MAGNITUDE AND SERIOUSNESS
OF 1951 FLOOD IN KANSAS, MISSOURI, AND OKLAHOMA**

	Kansas	Missouri	Total
Acres Flooded	1,074,000	926,000	2,000,000
People Displaced	368,500	150,000	518,500
Major Bridges Lost	17	-	17
Railroad Rolling Stock Affected	22,100	65,000	87,100
Livestock Lost or Stranded	7,000	9,000	16,000
Flood Loss	\$813,000,000	\$177,000,000	\$990,000,000

tablets at the Office of Midwestern CDC Services was nearing exhaustion, the Public Health Service Regional Engineer requisitioned additional supplies and 20,000,000 were flown in by Air Force planes from the four other stock-piling points, maintained by CDC. It is of interest to note that these tablets came

originally from War Surplus and were given to CDC by the New York State Department of Education. Tests last spring of random samples revealed no loss of strength.

Post-flood sanitation includes, in addition to general clean-up and home rehabilitation, the restoration, cleaning, and disinfection of municipal and private

Table 2

**EQUIPMENT FURNISHED BY CDC FROM STOCK PILES OR
PURCHASE TO THE KANSAS - MISSOURI AREA**

3 100 g.p.m. Truck-Mounted Water Purification Units
13 Collapsible Water Tanks
3 100 lb. Cl./day Emergency Chlorination Trailers
1 Motor Drying Unit Including a 25 kw. Generator
30 90 g.p.m. Dewatering Pumps
1 Power Driven Sewer Cleaner
1 L 40 Lawrence Aero Powered Mist Sprayer
1 L 80 Lawrence Aero Powered Mist Sprayer
1 Buffalo Sprayer-Duster
35 Perfection Hand Sprayers
32 Hudson Hand Sprayers
1 Hardy Powered Sprayer
1 Root Duster Converted to Power Sprayer
12 Light Traps
1 Block and Tackle and Well Jack
4 Tokheim Transfer Pumps
1 3/4 Ton Dodge Power Wagon with Winch and Cable on Front
141 TOTAL UNITS
9 1 1/2 Ton Trucks
19 1/2 Ton Trucks
2 Jeeps
2 Jeep Trailers, 2 Wheels
32 TOTAL TRUCKS AND TRAILERS

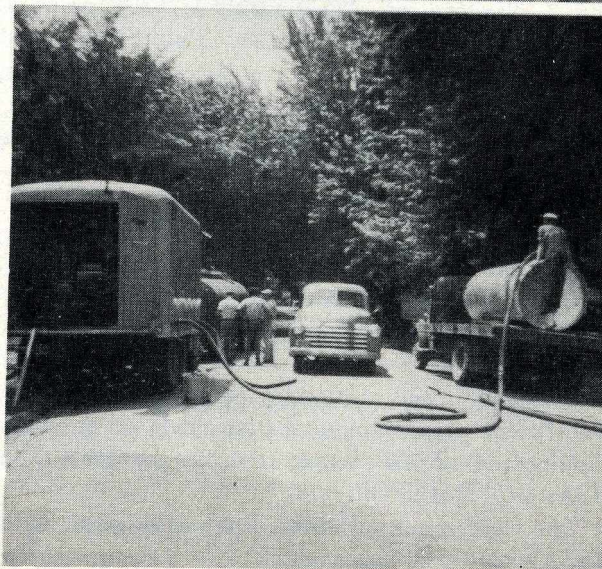
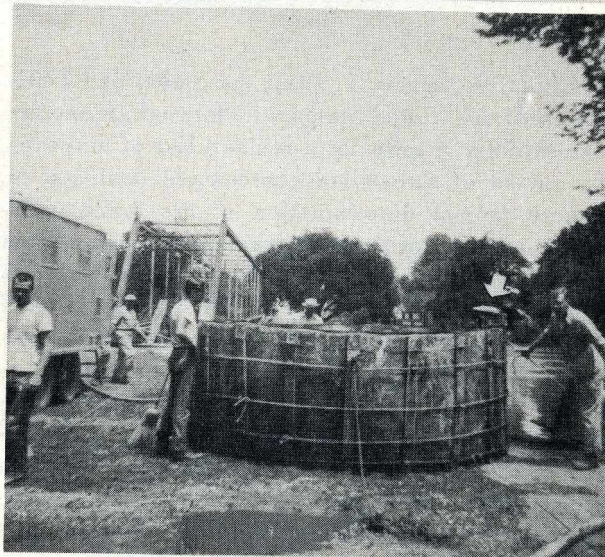
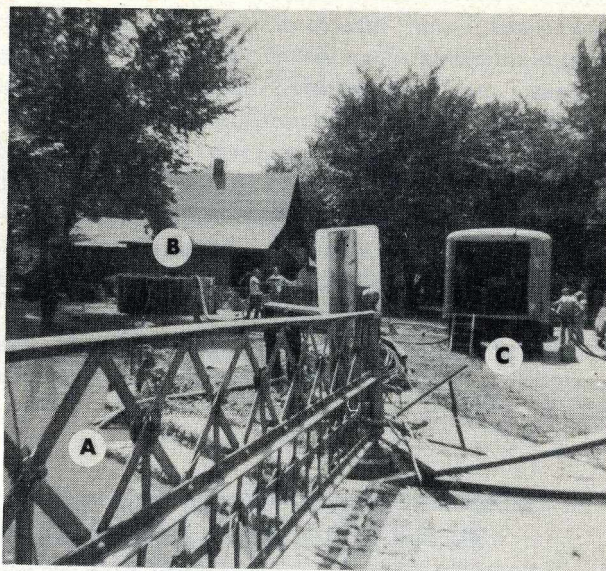
water supplies which were inundated; the unclogging of affected sewers; food sanitation; and mosquito, rodent, and fly control.

During the early stages of the flood, the Federal Security Agency Regional Office and CDC took steps to prepare to offer assistance if requested to do so by the State health officers. Because the need is immediate when it arises, equipment, supplies, personnel, and vehicles were moved to the area. The items of equipment and vehicles furnished are given in table 2. They include 141 units of equipment and 32 trucks and trailers. Supplies furnished included DDT, solvents, and insecticide formulations; chlorine products and tablets; and gasoline and oil for motor and motor vehicle operations. The personnel furnished, including those from Washington, D. C., Region VII, EHC, and CDC, but excluding the executive personnel at Kansas City and at Atlanta, was as follows:

Sanitary Engineers	15
Sanitarians and Scientists	6
Entomologists	3
Malaria, Fly, and Rodent Specialists	18
Airplane Pilot	1
Total	<u>43</u>

As the normal activities of both Kansas and Missouri were under highly qualified and competent executive and technical direction, and district and local health services covered the States, the aid rendered by the Public Health Service consisted of supplementing that of the existing health departments, and was directed mostly toward the control of mosquitoes and flies.

These factors in environmental sanitation were magnified by (1) the existence of many areas of pooled water and temperatures favorable to mosquito breeding; and (2) the existence of large numbers of dead



TOP: Flow of raw water from river (A), through pump to coagulation and settling tank (B), thence to purification unit (C).

MIDDLE: Close-up of coagulation and settling tank showing outboard motor (arrow) used for agitating water.

BOTTOM: Transfer of purified water from purification unit to tank truck for delivery to residents.

animals, and quantities of putrefying meat and meat products, wet and decaying grain, and a favorable temperature for the breeding of flies and mosquitoes.

The services in these matters included advisory guidance of local personnel where an organized program existed, entomological survey and evaluation, estimation of need, and supervision of field operations where needed.

A very special entomological study was

conducted in the River des Peres Valley in St. Louis, where outbreaks of encephalitis have occurred in the past.

In no case was personnel assigned or assistance rendered until requested by the State health officer.

The magnitude of the assistance rendered is reflected by the cost, which will total nearly \$90,000. This cost does not include salaries, except in the cases of four temporarily employed persons.

NATIONAL MORBIDITY REPORTING - 1952

Effective January 1, 1952, the States and Territories of the United States will forward summaries of morbidity reports for a revised list of diseases by means of streamlined procedures designed to assure prompt dissemination of the information.

Inauguration of these changes was assured when the Association of State and Territorial Health Officers meeting in San Francisco at the annual convention of the American Public Health Association approved and endorsed the report and recommendations of the Subcommittee on National Morbidity Reporting, presented by Dr. Bruce Underwood, Chairman of the Infectious Diseases Committee. The same report, presented by the Subcommittee on National Morbidity Reporting of the Committee on Administrative Practice was approved by the American Public Health Association.

Thus, the Subcommittee on National Morbidity Reporting, consisting of five State epidemiologists and constituting a Subcommittee for the ASTHO, the APHA, and the Conference of State Epidemiologists, after more than a year's effort and with the assistance and consultation of State epidemiologists, laboratory directors, statisticians, U. S. Public Health Service consultants, and other well-known research workers in fields of epidemiology, microbiology, and statistics, prepared the way for fulfillment of a recommendation made at the 49th Conference of the Association of the State and Territorial Health Officers.

The Conference of State Epidemiologists, with Dr. Alexander D. Langmuir, CDC, as general chair-

man, and Dr. R. E. Serfling, also of CDC, as Executive Secretary, enunciated the broad principles governing the revision of the list of diseases and reporting procedures. The Conference, held in Atlanta last April under the sponsorship of the CDC and National Office of Vital Statistics, was conducted by the Subcommittee with Dr. A. C. Hollister as chairman. The tentative report of the Conference was forwarded to each State and Territory for comment, suggestion, and revision, and on September 26 when the Subcommittee gathered in Atlanta to write the final report and recommendations, replies had been received from 37 States, 2 independent cities, and 2 Territories. After study and consideration of the submitted comments, the final report was drafted for submission to the Association of State and Territorial Health Officers.

The revised reporting procedures provide for submission of weekly reports of State morbidity totals to the NOVS, and at the end of the calendar year, a corrected summary of these figures by months for the State, and by annual totals for each county. In addition, it was recommended for those diseases for which confirmatory laboratory tests are available, that a State total for the known number of laboratory-confirmed cases be reported. It was also recommended that a system be developed for reporting animal diseases which are transmissible to man.

The NOVS has prepared a manual of procedures which will be made available to all States, and which describes in detail the forms and procedures