

# Evaluation of Communications Media in Two Health Projects in Baltimore

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**I**N THE conduct of health programs requiring the general participation of the public or of selected populations, health officers and health educators use many avenues of communication (1, 2). The press, radio, and television accept news items, and both radio and television broadcast spot messages or special programs in the public interest at little or no cost to the agency (3, 4). Also widely used are the agency's news publications, leaflets, posters, exhibits, and letters, and conferences. While health officials attempt to inform the public through every means within the limits of staff and budget, little effort is made to evaluate the effectiveness of the particular media used.

This paper is an evaluation of the success of communications media in publicizing two health projects in Baltimore, Md. A long-term project concerned a maternity facility established in 1954 (5) and expanded in scope in 1965 through Federal funds (6). A short-term project concerned a 3-day diabetes detection clinic held during Diabetes Week in November 1966. Both programs involved the entire city.

## The Long-Term Project

The maternity facility was established as the prenatal interviewing service of the Baltimore City Health Department in October 1954, principally to provide guidance to pregnant women who had made no arrangements for prenatal care or delivery. For 10 years the service screened expectant mothers for physical need

and financial ability, and referrals were made to appropriate resources—clinics, physicians, hospitals, and social agencies. In April 1964 a grant to expand the service was received from the U.S. Children's Bureau, and in February 1965 the prenatal interviewing service was transferred to new, larger quarters, the staff increased, and a comprehensive plan for expanded health care instituted.

*Communication activities.* At the outset persons were referred to the prenatal interviewing service by hospitals, health department clinics, public health nurses, and agencies that work closely with the health department. Periodic announcements were made through the press, radio, and television. Many of the clients were either unlettered or unable to afford newspapers or television, and much emphasis was directed through WEBB, a radio station popular with the inner city low-income group. Communication with the public was maintained chiefly through the department's bureau of health information and public health nursing services.

The bureau issues the "Weekly Letter to the Mayor," a combined news-statistical report sent to 500 persons on a mailing list, including representatives of the press, radio and television, and organizations concerned with health programs

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in the city. The maternity service project was the subject of 21 such news releases from 1954 through June 1966.

The *Baltimore Health News*, an 8-page periodical of the health department sent to 15,000 persons, published 15 items referring to the maternity service. All local daily or other periodical press sources received 12 news releases in addition to the 21 *Weekly Letter* releases.

Radio and television stations received 33 news releases. In addition, the 11 local radio stations received 22 spot announcements and broadcast 6 special programs. The city's three television stations received 15 spot announcements each and broadcast 3 special programs. A variety of spots of different time lengths were aired over periods ranging from 1 week to several months. Coverage was usually good.

Leaflets were distributed through leaflet racks in clinics, as handouts in drugstores and neighborhood food markets, through schools and housing projects, as an enclosure with welfare checks, and by public health nurses.

Individual contact regarding the service was made chiefly through public health nurses, from patient to patient (patients were asked to tell their friends about the service and were given postcards telling about the center to send their friends), and by agencies or persons alerted to the program by other means.

*Referral records.* Records of referrals to the prenatal interviewing service were begun in 1956 on a systematic basis. All press releases

and radio and television referrals were included in the category "publicity." In 1965 this was further detailed as "television," "radio," and "newspapers."

Table 1 shows the total number of patients seen and the source of referrals by percent from 1956 to 1964, the period prior to expansion of the prenatal interviewing service.

Table 2 shows the referrals to the newly established Baltimore Maternity Center for selected time intervals from February 1965 to June 1966. It reflects the initial intensive effort to alert all community groups and the public to the new location, as well as the time intervals when the publicity efforts leveled off and the novelty of the new service was no longer a strong influence for maximum level announcements by the mass media. The January-June 1966 columns represent the time when the use of the mass media had settled down to routine periodic press, radio, and television announcements along with other health department releases of public health significance.

*Results.* Over a long period of time the person-to-person transfer of information produced the best results. In low-income groups most referrals were made by previous patients and relatives and friends aware of the service. Hospital referrals accounted for the second highest number of referrals, although radio stations asserted a powerful influence—17.2 percent of the first 500 persons using the new center cited radio as the source of referral (table 2).

**Table 1. Source of referrals to prenatal interviewing service, by percent, 1956-64**

Source	1956	1957	1958	1959	1960	1961	1962	1963	1964
Previous patients, friends, and relatives.....	31.4	48.0	45.0	49.0	54.0	60.0	64.5	64.2	65.0
Hospitals.....	30.0	18.8	19.0	15.0	12.0	10.0	10.0	11.0	11.0
Physicians.....	3.2	4.1	4.0	5.0	5.0	4.5	4.0	4.2	4.0
Clinics.....	12.0	11.6	6.0	7.0	5.0	1.0	1.0	1.4	1.0
Medical care program (for persons on welfare).....	3.0	2.5	6.0	2.0	2.0	2.0	2.0	1.0	1.5
Public health nurses.....	4.1	4.0	3.0	4.2	4.0	4.0	3.5	3.2	3.1
Legal agencies.....	4.0	4.5	3.0	3.0	3.0	2.0	1.0	1.0	1.0
Social agencies.....	4.5	3.3	3.0	3.5	3.5	4.0	4.0	3.5	3.5
Schools.....	0	0	3.0	3.1	3.0	3.5	3.0	2.5	2.5
Publicity.....	3.0	2.0	2.0	3.0	2.5	3.0	2.7	2.7	2.8
Midwives.....	3.0	1.5	4.0	1.0	1.0	1.0	.3	.1	.1
Commercial.....	1.5	1.7	2.0	2.1	2.2	2.6	1.0	1.5	1.5
Form letters.....				2.1	2.5	3.0	3.0	3.0	3.0
Number of patients.....	5, 013	6, 011	6, 705	6, 472	6, 400	6, 435	6, 594	6, 387	6, 211

**Table 2. Source of referrals at new maternity center for selected time intervals**

Source of referrals	February <sup>1</sup> -April 1965		July-November 1965		January-June 1966	
	Number	Percent	Number	Percent	Number	Percent
Previous patients, relatives, friends.....	224	44.8	1,313	53.3	2,036	63.0
Hospitals.....	75	15.0	355	14.4	350	10.9
Private physicians.....	12	2.4	70	2.8	92	2.8
Public health nurses.....	24	4.8	180	7.3	194	6.0
Department of public welfare.....	24	4.8	117	4.7	120	3.7
Other social agencies.....	1	.2	40	1.6	56	1.8
Commercial.....	10	2.0	8	.3	17	.4
Television.....	41	8.2	34	1.4	49	1.5
Radio.....	86	17.2	319	13.0	252	7.8
Newspapers.....	3	.6	20	.8	11	.3
Schools.....	0	-----	0	-----	51	1.6
Form letters.....	0	-----	0	-----	6	.2
Other.....	0	-----	11	.4	0	-----
<b>Total.....</b>	<b>500</b>	<b>100</b>	<b>2,467</b>	<b>100</b>	<b>3,234</b>	<b>100</b>

<sup>1</sup> New center opened in February 1965.

To test the continued effectiveness of one radio station beaming its programs at low-income groups in the inner city, peak coverage with spot announcements was requested and the station aired announcements every half hour during the day for 1 week urging listeners to visit the center. During this time 60 of 146 persons (7) indicated they were influenced to come to the interviewing center by this radio station alone.

Television was less effective than radio in influencing listeners to visit the center. This may be because there is a greater demand for the limited public service time on television from both local and national groups. Radio has greater flexibility than television for meeting local requests for service. In addition, many poor persons who do not own television sets do possess inexpensive transistor radios.

Other communication efforts included mailing letters and referral forms to clergymen, physicians, hospitals, dentists, druggists, midwives, school personnel, housing project administrators, and civic and service organizations; visiting laundromats and city parks to deposit literature and to seek out prospective patients; contacting industry and labor unions to place news items in house organs and newsletters; visiting small, independent, healing store front churches in inner city areas; and conferences with insurance agents selling policies to inner city families. Public health nurses carried the

word to patients in clinics, in schools, and on home visits. Every effort helped spread the word about the maternity center and its services (8).

**The Short-Term Project**

The short-term project was a 3-day diabetes detection center sponsored by the Maryland Diabetes Association in cooperation with local medical and health groups in November 1966. Chest X-rays and visual acuity tests were also offered.

All public information activities were conducted by the bureau of health information, Baltimore City Health Department. The target population was persons over age 40, overweight, or with a history of diabetes in the family.

In view of a late decision to conduct the program—less than 3 weeks before the target date for the opening of the detection center—it was decided to concentrate on the mass media and conduct other informational programs only as time permitted. Efforts included distribution of 800 posters and 50,000 leaflets to all drugstores in the city through wholesale druggists' delivery services, and a mass mailing of letters to churches, golden age clubs, city bureau of recreation leaders, and health, education, welfare, and governmental groups on the "Weekly Letter to the Mayor" mailing list. The letter requested assistance in publicizing the diabetes detection center.

*Communication activities.* The first press re-

lease was issued 2 weeks prior to opening date, another the week before opening, and others on each day of the center's operation, with a followup report on conclusion of the center's activities. Press releases were issued to daily and other newspapers and to radio and television news departments. A retail drugstore chain placed a ¼-page advertisement in the daily papers announcing the center's establishment.

All 11 radio station public service directors were telephoned and asked for cooperation in pushing the drive. All agreed to assist. Radio spot announcements were issued 2 weeks prior to the opening of the detection center, and spots were dated for use through the end of the program. Two stations used taped messages from the commissioner of health, five broadcast 15-minute programs, five had 5-minute physician interviews, and one had a 30-minute program. All urged persons in the target population to visit the center.

The city's three television stations also received the press releases. In addition, three different 2 by 2 visual spot announcements were distributed 2 weeks prior to the opening of the clinic for use through the test dates. One station video-taped two spot announcements by two public health nurses. Another taped a 15-minute television program with the chairman of the drive as guest; this program, however, was preempted by a Gemini flight telecast by the network and could not be aired later because of tight scheduling of programs. All television stations covered the diabetes detection center with newsreel movies during its operation and reported daily on its progress when called on the telephone. On the second day of operation of the center, all radio and television stations were called again to request additional emphasis wherever possible. Attendance at the center was 512 persons on the first day, 790 on the second, and 1,350 on the third.

*Source of referrals.* Almost 65 percent of those interviewed indicated newspapers as their source of information or referral. This was followed by 14.6 percent, radio, and 7.9 percent, television. Friends referred 5.1 percent of those interviewed, followed by church and physician referrals. The category of "others" includes 11 persons who saw the large sign in front of the center, 11 who had attended the center the previ-

ous year, and 9 who were student nurses told about the center in class. The source of information for 6 persons was recreation center announcements; for 6, school announcements; for 4, drugstores; for 3, State health department; 2, neighbors; 1, police publicity; 1, work; and 1, senior citizens group.

<i>Source</i>	<i>Number</i>	<i>Percent</i>
Newspapers.....	1, 131	64. 4
Radio.....	257	14. 4
Television.....	138	7. 9
Friends.....	89	5. 1
Churches, ministers.....	36	2. 1
Physicians.....	26	1. 5
Other.....	78	4. 4
Total.....	1, 755	100

### Conclusions

Health departments should not underestimate the power of the press, radio, and television in spurring people to take action, especially in short-term health projects. Rosenstock (9) has indicated that large groups of individuals stand ready to take action on any given issue and merely lack the information or cue to make the action possible. The Baltimore study shows that the press, radio, and television accounted for 86.7 percent of the attendance at the diabetes clinic.

In both long- and short-term programs there was little response to mass distribution of leaflets and posters. Certainly such findings are indicative of the need for more research in the use and effectiveness of various communications methods, particularly of printed matter. Baumgartner (10) clearly identified this need when she said, "Communication is as much a part of medicine as penicillin. We should be putting twice as much money and talent into research on communications as we are now."

The extensive use of the mass media in public health information-education programs makes it reasonable and necessary for health departments to include staff personnel skilled in the communications arts. The writing-editing public information function is highly specialized; the professional expertise it requires is increasingly needed if health departments are to achieve their stated community health goals. Not only will the department then be in a better position to compete for space in newspapers

and for time on radio and television, but these media will come to look upon the health department as a source of ready, usable information and programing.

If health educators are to perform these mass communications functions—and many of them do—then schools of public health and others awarding advanced degrees in health education should take a closer look at their curriculums to determine if they are providing the kind of study program that will qualify students to meet these needs.

### Summary

Analysis of the communications methods bringing expectant mothers to a maternity facility in Baltimore over a 10-year period reveals the importance of person-to-person contacts. The greatest number of referrals were from previous patients, relatives, and friends with a range from 31.4 percent during the first year of operation to 63 percent in 1966. Radio was found to be a more effective means in reaching low-income groups than television. Leaflets and other published media were of little significance.

In the short-term project, a 3-day diabetes clinic, newspapers, radio, and television accounted for 86.7 percent of clients tested. Newspaper announcements brought in 64.4 percent. Significantly, radio again proved more effective than television, 14.4 percent compared with 7.9 percent. Pamphlets, posters, and mass

mailing of informational letters to community groups were of little or no value.

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## WHO Regional Reference Center for Rabies

The National Communicable Disease Center of the Public Health Service, Atlanta, Ga., has been designated as the WHO Regional Reference Center for Rabies in the Americas.

In its new role the laboratory will be responsible for training workers, from countries in the Americas as well as other countries, in diagnostic and control procedures. It will also direct studies of rabies in domestic animals and wildlife. In addition, the laboratory will conduct research on vaccines for both humans and animals and on rabies diagnostic materials in collaboration with other WHO Reference Centers and laboratories.

**DENSEN, PAUL M. (City of New York Health Services Administration):** *Prospects for chronic disease research in health departments. Public Health Reports, Vol. 82, July 1967, pp. 575-581.*

Opportunities for chronic disease research by official health agencies are limited only by the imagination of the researchers. Because these agencies are legally responsible for protecting, maintaining, and improving the health of the population, they can undertake certain types of chronic disease research which would be difficult for other agencies to perform. Studies on narcotic addiction, mental health, and cancer and a referral program for selective service rejectees have offered health

departments research opportunities. Health departments bear a responsibility for translating the knowledge gained through research into public health programs, but too few of them are giving any time or thought to this responsibility. Service programs still need to be based upon sound epidemiologic observation.

Control of the chronic diseases depends upon the availability of high-quality medical care, and recent legislation, such as titles XVIII

and XIX of the Social Security Act, re-emphasizes the standard-setting role of the official health agencies. To be accepted, standards must, in the final analysis, be based upon the fruits of research. More research into the natural history of disease is therefore needed.

A number of health departments have undertaken continuing household surveys, similar to those of the National Health Survey of the Public Health Service, to enable them to carry out their traditional role of defining the nature and extent of the chronic disease problem in their own areas.

**SCHWARTZ, J. THEODORE (Public Health Service), POWERS, DOUGLAS K., DELL'OSSO, GEOFFREY G., and WILLIAMS, GAIL R.:** *Status of tonometry surveys as a source of epidemiologic data. Public Health Reports, Vol. 82, July 1967, pp. 582-586.*

In a communitywide survey on the Colorado River Reservation in Arizona, the ocular pressure of 396 examinees was estimated by Goldman applanation tonometry in the sitting position, Goldman applanation tonometry in the supine recumbent position, and Schiotz tonometry

in the same supine recumbent position.

The results of this investigation confirmed the existence of a wide disparity among tonometric measurements by these methods. A comparison of the data from the Colorado River Reservation survey with

a previous communitywide survey of 502 persons in Nesquehoning, Pa., suggested that uncontrolled factors can influence the reliability of measurements made under similar field conditions.

Broad acceptance of a single, carefully detailed procedure for field tonometry seems necessary in order to obtain comparable descriptive data on the frequency of ocular hypertension.

**ASSAL, NABIH (University of Oklahoma School of Medicine), BLENDEN, DONALD C., and PRICE, EDMUND R.:** *Epidemiologic study of human tularemia reported in Missouri, 1949-65. Public Health Reports, Vol. 82, July 1967, pp. 627-632.*

A total of 536 cases of tularemia have been reported to the Division of Health of Missouri during the period 1949-65. These cases form the basis for an epidemiologic analysis which reveals certain characteristics of the disease, influenced to unmeasurable extent by reporting bias.

Although tularemia is popularly

associated with wild rabbits, the disease appears to be transmitted more often by infected ticks. Of 536 cases of illness reported in Missouri in the period 1949-65, 25.9 percent were known to be transmitted by contact with ticks, while only 13.4 percent were transmitted by contact with infected rabbits. More than 58 per-

cent had an unknown source of contact.

The white male between the ages of 11 and 70 years, residing in the southern half of Missouri, seems most prone to infection (or the likelihood of his infection being reported is greatest). This person is at greatest risk when his activities expose him to ticks in the summer and rabbits in the winter. The probability of the patient dying from the disease is low, especially if he receives appropriate therapy.

**HILLMAN, ROBERT W. (State University of New York, Downstate Medical Center), REUTER, MAGDA, DEMAREST, ELSIE, SMITH, VIRGINIA M., and WANZER, RUTH A.:** *Smoking and illness experience of student nurses. Public Health Reports, Vol. 82, July 1967, pp. 633-638.*

The illness experience of 84 nursing students who smoked was observed to be significantly less favorable than that of 185 nonsmoking peers. The excess morbidity incurred by the smoking group was noted in respect to nonrespiratory as well as respiratory conditions.

Smokers tended to be of greater stature and of relatively lighter weight than nonsmokers. They also included a greater proportion of students whose mental health status was identified as "questionable."

Infants subsequently born to the smokers weighed less at birth than

those born to the nonsmokers. This difference was especially conspicuous among female infants and was evidenced even after adjustments for the generally lighter birth weights also recorded for the mothers who smoked.

Longitudinal studies are required to delineate the precise role of constitutional factors as well as the early and residual effects of smoking on health status.

**DeLAY, PAUL D.** (U.S. Department of Agriculture, Beltsville, Md.), **CASEY, HELEN L.**, and **TUBIASH, HASKELL S.**: *Comparative study of fowl plague virus and a virus isolated from man. Public Health Reports, Vol. 82, July 1967, pp. 615-620.*

Fowl plague-like virus isolated from a man was infective for chickens. Clinical signs resembling those of fowl plague developed in the chickens when they were inoculated with blood clot material from the man, who had become ill after a trip

abroad. The trip had included visits to areas from which fowl plague had been reported.

Fowl plague-like virus and fowl plague virus elicited neutralizing antibodies for the heterologous as well as the homologous virus. A

serologic relationship between the two was also shown by hemagglutination-inhibition tests.

The course of fowl plague-like virus infection in chickens and its clinical signs and lesions were indistinguishable from those seen in chickens infected with fowl plague virus. Chickens that recovered from infection with fowl plague-like virus were refractory to fowl plague virus.

**WEBSTER, DANIEL P.** (Public Health Service): *Pool drownings and their prevention. Public Health Reports, Vol. 82, July 1967, pp. 587-600.*

Nearly 500 Americans, mostly children under 10 years, with the peak number at age 2, died in swimming, wading, and decorative pool accidents in 1965. Newspaper reports disclosed that only five States and the District of Columbia had no such reported fatalities. Of the 484 deaths, the majority occurred in residential pools—at motels, hotels, apartments, and private homes.

Absence of protective barriers, or inadequate ones, and temporary failures to provide adult supervision were related to most drownings of youngsters. Direct causes of adult deaths were overestimation of ability, exhaustion, and the incapacities arising out of party high jinks. In

these instances, swimming alone or being alone at the pool, as well as trespass and ingestion of alcohol, were frequent contributing causes. Poolside service of alcoholic beverages should be barred at public facilities and discouraged at all other pools.

All pools other than those at private homes should have professional lifeguards. The number of public-pool drownings that occurred with lifeguards present indicates that the ratios of lifeguards to pool users and to pool size and the standards for lifeguard qualifications, training, certification, and remuneration should be reexamined. Overcrowding and murky waters were reported in

some drownings that occurred with the lifeguard present.

That 207 of the 484 drowning victims were of preschool age shows the need for public education that will alert parents and guardians to the importance of constant supervision whenever children are near the water. Community health and safety ordinances are also needed which will require adequate fencing around pools.

Pool fatalities will increase unless coordinated public health and safety measures are taken. The pool-fatality toll could probably be reduced by half through community instructional programs, such as "Pools in Schools" for teaching youngsters water knowledge and survival skills, clinics for owners and operators, and legislation requiring use of protective and supervisory safeguards.

**BELLOC, NEDRA B.** (California State Department of Public Health): *Deaths from congenital heart disease in California, 1945-64. Public Health Reports, Vol. 82, July 1967, pp. 621-626.*

The major portion of deaths from congenital cardiovascular malformations in California from 1945 to 1964 occurred in infants. However, children born with congenital heart defects live longer now than they did 20 years ago, as indicated by the increased proportion of the deaths due to the defects that occur in persons in the older age groups, as well as by the age-specific rates which show a decline in deaths in persons under age 5.

The death rate from congenital cardiovascular malformations was about 25 percent higher in Negroes than whites even when adjusted for age.

Surgical operations were mentioned on more than 26 percent of the death certificates for persons with congenital cardiovascular malforma-

tions in 1964, an increase from the 11 percent mentioning operations in 1955. The proportion of certificates with mention of surgical operations has increased steadily in the youngest age group. However, there is indication that surgery was performed on a backlog of cases in persons older than 5 years after new techniques became available in 1948-50 and again in the early 1960's.

Whether advances in surgery contributed to the decline in mortality from congenital cardiovascular malformations cannot be demonstrated from an analysis of the cases of decedents alone. Death rates from this cause have declined at almost the same rate as the overall death rate for infants and children under 5 years of age, in which the proportion of death certificates with men-

tion of surgical operations was relatively small.

In recent years the death rate has been increasing in the age group over 20 years, in which 30-40 percent of the persons who died had had surgical operations. In the age group 5-19 years, critical years for treatment, the death rate increased in the period when the highest proportion of the persons who died had had surgical operations. If these operations were performed in a backlog of cases in which the optimum time for surgical correction had passed, it is possible that the downward trend in the death rate of the 5-19 year group, which was evident in 1960 to 1964, will continue. As children in this age group reach maturity, if surgical treatment has been successful, there may be a downturn in the death rate from congenital heart disease for those over the age of 20 years.