VD Hotline: An Evaluation

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THE INCIDENCE OF VENEREAL DISEASE in the United States is growing at epidemic proportions despite the known etiology and the availability of effective, inexpensive treatments. This growth, continuing in the face of contributions from advanced medical technology and the accepted necessity for treatment, seems to indicate a need for more health education. But, can any impact of such education be demonstrated?

The need for evaluation of health education programs has long been recognized, yet few examples can be found in the literature. It seems to be generally believed that since any health education program is preferable to none, rigorous evaluations of such programs is unnecessary. Typical of current analyses is Forish's report about "Operation Venus," a VD hotline in Philadelphia (*1*). This program seems to be successful, if one considers the large number of telephone calls, yet there is no mention of followthrough to determine the number of visits to physicians or clinics as a result of hotline calls.

The American Social Health Association reported (*2*):

> . . . This year's question asked whether any method of evaluating the effect of VD education on the teenage VD rate had been established. A majority of replies said that increased self-referrals for treatment by the young were the best evidence of the effect of VD education. The Monterey County, Cali-

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fornia, health department stated that, 'There is no evidence that VD education has lowered our county VD rate, but it has greatly facilitated earlier diagnosis through self-referral and speeded up contact follow-up and immeasurably increased community awareness and interest in finding out the extent of the problem.'

Self-referral patients in one city were asked routinely why they had come to the clinic. Records kept of their replies showed that over 35% mentioned school VD education programs or radio and TV announcements. . . . Increased knowledge shown by young patients about gonorrhea and about its lack of symptoms in females was often cited as evidence that VD education had been effective."

The VD education program in Washington, D.C. (*3*) is one of the few programs that attempts to evaluate results in terms of approximate cost, numbers of persons screened and treated, effects of increased visits to private physicians, and so forth. However, the long-range lasting effects of such an educational program still remains to be evaluated.

The effectiveness of health education in casefinding, reporting, and treating venereal disease will not be known until the many programs that include venereal disease education are carefully evaluated. Our examination of a VD hotline in New Jersey is a first attempt at such evaluation.

Background

The VD Hotline at the Monmouth Medical Center in Long Branch, N.J., began in January 1973 under the sponsorship of the Medical Center's Department of Community Health Education and Planned Parenthood of Monmouth County. The Office of Consumer Health Education of the College of Medicine and Dentistry of New Jersey assisted in the evaluation of this program. The hotline was designed to provide a link between untreated venereal disease patients and available medical services, to encourage persons who suspect that they have venereal disease to visit appropriate health facilities for treatment, and to expand the role of community education toward eradication of venereal disease.

The VD Hotline serves the Monmouth County population—estimated to be 471,850 in 1971. Approximately 100,655 persons, 25 percent of the county's population, are in the high-risk age group for venereal disease—15–30 years old. Long Branch, the largest city in the county, has a population of more than 31,000. It is a resort community that experiences substantial demographic changes during the summer months. The year-round college student population drops 50 percent, while the general population, buoyed by a substantial number of young people employed in the resort industries, doubles in size.

There are numerous possible sources of medical care for venereal disease in the hotline's area, in addition to Monmouth Medical Center. A majority of the private physicians in the county treat venereal disease, aided by a New Jersey law that permits physicians to provide such treatment to minors without parental consent. Treatment is also available from college health services and the four other hospitals in the county. The county has no health department clinic or free clinic.

The Hotline

The operators of the hotline are trained by Monmouth Medical Center staff on both venereal disease factual information and role-playing and communications. They are provided with a "Guide for Venereal Disease Hotline Operators" that contains basic information on syphilis and gonorrhea and the appropriate treatment. In addition, there is a discussion on confidentiality with respect to minors. The hotline is operated within the outpatient department between 5 and 8 pm daily.

The hotline was promoted through radio and television public service spots and flyers posted in the high schools, local community colleges, and planned parenthood clinics. During its first year of operation, the hotline received 260 calls. The frequency varied from month to month and peaked in April, June, and October:

Month	*Number of calls*	*Percent*
January	13	5.0
February	11	4.2
March	15	5.8
April	35	13.5
May	22	8.5
June	39	15.0
July	27	10.4
August	15	5.8
September	13	5.0
October	31	11.9
November	12	4.6
December	27	10.4
Total	260	100.1

Since the radio and television announcements were confined to April and June, the increased number of calls in those months can probably be attributed to the hotline. The explanation for other fluctuations in the frequency of calls is not readily apparent. The summer decline may be related to the proportion of local residents away on vacation, the exodus of local college students from the immediate vicinity, and the unfamiliarity of vacationers with the hotline—particularly students who work in the area for the summer and are in the high-risk age group. Since schools were closed in the summer and no media advertising occurred, there was no ongoing publicity for the hotline in this period.

For each call, operators recorded information on the caller's age, sex, and occupation, the reason for the call, and the disposition of the call. An analysis of these data revealed a startling and significant diversity. As expected, most callers were relatively young—57.3 percent were under 21. However, the age of the callers ranged from 14 to 59. The median age of male callers was 20, and of females, 18 (table 1). Men called more frequently than women and accounted for 60.3 percent of the calls.

Table 1. Number of calls to VD hotline, by sex and age, Monmouth County, N.J.

Age	Male	Female	Total
14	1	1	2
15	5	5	10
16	8	17	25
17	13	11	24
18	19	17	36
19	13	4	17
20	18	1	19
21	7	2	9
22	2	4	6
23	7	7	14
24	6	2	8
25–29	26	10	36
30–39	10	5	15
50 and over	1	2	3
Unidentified [1]	4	4	8
Total	140	92	[2] 232
Percent	60.3	39.7	39.7
Median age	20	18	20

[1] Age not specified according to above categories.
[2] Age missing from data of 28 additional calls, making a total of 260 calls recorded.

Again, contrary to expectations, students did not make the majority of calls. Indeed, employed persons comprised the largest category of callers and were responsible for 38.5 percent of the calls. Students ranked second with 34.6 percent (table 2).

It is instructive to examine the data on how callers learned of the hotline (table 3). Friends and relatives were the most important source of information; this suggests that the spillover effect of any publicity effort may be substantial. More than 36 percent of the callers were directed to the hotline by this indirect source. Media advertising had a substantial direct impact—15.3 percent of the callers learned of the hotline from the spots broadcasted in 2 months. More consistent advertising may have significantly raised the number of calls. However, the actual number of calls associated with media advertising was only 40; in relation to the costs of radio and television time, the actual return may be very small.

Table 2. Number of calls to VD hotline, by occupation, Monmouth County, N.J.

Occupation	Number of calls	Percent
Unspecified student	2	0.8
Secondary school student	62	23.8
College student	26	10.0
Employed	100	38.5
Unemployed	3	1.2
Housewife	5	1.9
Other	25	9.6
Missing	37	14.2
Total	260	100.0

Table 3. How callers learned of VD hotline, Monmouth County, N.J.

Callers learned from—	Number	Percent
Friends and relatives	96	36.9
Radio	23	8.8
Television	17	6.5
School	21	8.1
Newspaper	22	8.5
Telephone directory	14	5.4
Miscellaneous and unknown sources	67	25.8
Total	260	100.0

Many callers asked the operator more than one question; the most frequent inquiries related to making clinic appointments, (location, hours, and cost) and the symptoms of venereal disease. Some callers, however, probed more intensively and raised questions regarding treatment procedures and tests for venereal disease. The frequency of such questions confirmed the staff's initial premise that hotline operators should be carefully trained.

Use and Treatment

Unfortunately, two factors preclude a definitive analysis of the hotline's impact: first, there is no simple way to count the people who called the hotline and then sought care from private physicians or hospitals other than the Monmouth Medical Center and, second, it is impossible to isolate the direct effect of the hotline on the number of venereal disease cases treated from that of advertising for the hotline or of other venereal disease health education programs.

Nonetheless, one can compare the use of the Medical Center's public venereal disease treatment facilities—the clinic and emergency room—before and after the hotline's initiation. The total number of visits for venereal disease in both facilities, between 1972 before the hotline began and 1973 during the first year of operation, rose 53 percent—from 356 to 545. (Most of the findings for emergency room and clinic visits are based on the second half of 1972 and 1973, because the records of clinic visits for the first half of 1972 were not available for comparison.)

Hotline operators encouraged callers to make clinic appointments rather than to use the emergency room; a greater increase in clinic visits than in emergency

Table 4. Monthly variations in use of facilities, July–December 1972 and 1973, Monmouth County, N.J.

Month	Clinic visits		Clinic treatment		Emergency room	
	1972	1973	1972	1973	1972	1973
July	58	89	34	31	28	24
August	43	86	33	36	21	24
September	24	71	20	16	15	26
October	54	63	32	21	13	22
November	30	54	22	24	15	23
December	35	48	21	26	20	15
Total	244	411	162	154	112	134

room visits would suggest the hotline's impact. In fact, visits to the emergency room rose 17 percent and to the clinic, 68 percent. Table 4 shows the monthly variations in visits separately for each facility. Since the clinic was not open evenings and weekends, the rise in emergency room use may be, in part, attributable to persons who found that the clinic hours were inconvenient for them.

Procedures for treating venereal disease patients are different in the emergency room and the clinic. In the emergency room almost all patients with overt symptoms (90 percent) were treated with medication. Laboratory tests were also performed. The remaining 10 percent of the patients had no symptoms of venereal disease and therefore received only laboratory tests; they were asked to return to the clinic for followup.

In the clinic, the staff was able to differentiate patients more carefully. Patients with overt symptoms of venereal disease were given comprehensive treatment which included examination by a physician, laboratory tests, medication, and counseling. Patients obtained the results of the laboratory tests by telephone in 72 hours, but were asked to return for a followup visit in 1 week. Patients without overt symptoms were only given laboratory tests on their first visit. If the results were positive, they were asked to return for a second visit. The number of patients requiring this second visit was small; it constituted only 10 percent of all clinic patients treated for venereal disease.

The number of patients treated for venereal disease in the emergency room remained an approximately constant and very high proportion of the number of visits. From 1972 to 1973 the number of visits rose from 112 to 134 (20 percent). In the clinic, on the other hand, there was no close relationship between the number of visits and the number of patients treated. Indeed, while the number of clinic visits rose by 34 percent, the number of patients treated leveled off.

The use of both the emergency room and the clinic appeared to peak in the summer months and then gradually decline. This pattern may have been associated with the large influx of young adults who work at the resorts during the summer months.

Costs

To definitively evaluate the hotline's costs and benefits, one would have to consider social factors that are perhaps impossible to measure. The costs would include not only the direct expenditures for the hotline, but also its advertising, the administrative costs to Monmouth Medical Center, and additional outlays for venereal disease treatment by the patients, the clinic, the emergency room, and other health providers. Analysis of the hotline's benefits would include estimates of the reduced social cost of treating venereal disease early and preventing the spread of infection. The largely intangible benefit of a better educated society would also be considered.

For the Monmouth Medical Center Hotline, only some of the more immediate costs are calculable. In 1973, the operating cost for 21 hours a week was $3,822 for salaries. For 260 calls, the cost was $14.70 per call.

The attempt to determine the cost to the hospital for the increased number of venereal disease patients in 1973, however, demonstrates the difficulty of obtaining estimates of even one dimension of the costs—the outlays for treatment of additional venereal disease patients by Monmouth Medical Center. First, it is not evident how many adidtional patients came to the Medical Center as a result of the hotline. Second, it is difficult to isolate the actual unit cost of treating one patient; the amount the patient is billed does not correspond, necessarily, to the actual cost. The Medical Center absorbs many costs; the clinic has a sliding scale of fees so that low-income patients pay less, and many patients pay nothing. In addition, the State pays for the laboratory tests of patients treated in the emergency room. The current status of cost accounting in health facilities makes the isolation of accurate cost figures very difficult.

Conclusion

The VD Hotline provided information to a diverse population: a 59-year-old man, a 14-year-old high school

girl, a housewife, and a young man working in the community. A profile of the typical caller is a 20-year-old employed male. The frequency of calls from employed persons indicates the need for informational efforts that will reach these persons. Too frequently, venereal disease education programs are limited to the schools. The VD Hotline is one way to fill this information gap.

The overall success of the hotline cannot be adequately assessed with the retrospective data that are presently available. There are numerous sources of treatment in Monmouth Medical Center. Therefore, the number of additional venereal disease patients treated as a result of the hotline cannot be accurately measured. Indeed, even the number of calls to the hotline does not provide an accurate estimate because it does not capture the spillover effect of friends communicating what they have learned.

The data from the clinic and emergency room are, understandably, inconclusive. They do suggest, however, one possible positive effect of the hotline: a changeover from the emergency room to the clinic as the location of treatment. This was encouraged by the hotline operators, because the clinic is both a less costly and a more effective setting.

The evaluation of the Monmouth Medical Center Hotline leads to two specific recommendations for the operation of hotlines. First, the number of calls is directly responsive to the amount of media and other advertising. Therefore, greater attention should be given to publicity. Second, the relatively low demand for venereal disease information in an area such as Monmouth County makes the operation of a hotline for venereal disease information only very expensive on a per-call basis. To use limited resources most effectively, it is preferable to expand the functions of the hotline. Monmouth Medical Center has already enlarged its program to a health hotline which provides information about numerous health problems, including drug use, child abuse, pregnancy, and the accessibility of health care.

The director of the hospital's Department of Community Health Education, Mary Jane Shu, recently reported a total of 759 calls to the hotline in 1975. A large number of these calls concerned family planning; they were directly attributed to the fact that Planned Parenthood of Monmouth County regularly publicizes the hotline's number. The same three persons who were trained to operate the hotline in 1973 are still operating it.

To obtain a more statistically significant evaluation of the effectiveness of the hotline, it is suggested that a prospective study be undertaken that includes obtaining data about how the patients learned about the clinic.

References

1. Forish, J.: Reaching the young, the VD crisis. International Venereal Disease Symposium. American Social Health Association and Pfizer Laboratories Division, Pfizer, Inc., 1971, pp. 70–71.
2. Venereal disease education, today's VD control problem. Amer Soc Health Assoc 31–35 (1972).
3. Conn, R. H.: Information and education program "To Free Metro D.C. of VD." Health Services Rep 89: 293–299, May–June 1974.

SYNOPSIS

BRYANT, NANCY H. (College of Medicine and Dentistry of New Jersey, Rutgers Medical School), STENDER, WILLIAM, FRIST, WILLIAM, and SOMERS, ANNE R.: *VD hotline: an evaluation. Public Health Reports, Vol. 91, May–June 1976, pp.* 231–235.

A VD hotline started in January 1973 at Monmouth Medical Center, Long Branch, N.J., was evaluated with the following results. Hotline operators handled 260 calls in 1973. The typical caller was a 20-year-old employed male who heard about the hotline from a friend, wanted information about clinic hours and costs, and had questions about symptoms of venereal disease.

At Monmouth Medical Center, venereal disease patients who go to the emergency room receive specific diagnosis and therapy, and in the clinic they receive broader medical care. The hotline encourages patients to go to the clinic or to their private physicians.

Visits to Monmouth Medical Center for venereal disease increased during the second half of 1972 from 356 to 545 (53 percent). For the emergency room alone, the rise was 17 percent and for the clinic, 68 percent. There was an increase of 20 percent in the number of patients treated in the emergency room, but the number treated in the clinic leveled. Thus, there was a substantial increase in visits, especially to the clinics where the most care is provided, and a modest increase in treated patients. The causal contribution of the hotline to these increases cannot be stated wih certainty.

The cost of operating the hotline was $14.70 per call. While high, it might be defended on the basis of avoiding the higher costs of untreated disease. The cost can be reduced by making the hotline serve multiple health purposes. The hotline appeared useful but costly. This retrospective evaluation was hampered by the unavailability of some critical data.