Health Priorities in Lubbock, Texas, According to Socioeconomic Groups

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AT THE UNITED STATES-MEXICO Border Public Health Association meeting in 1966, the director of the Lubbock City Health Department heard a presentation by the director of the Cameron County Health Department concerning a health services action program geared to the needs of specific socioeconomic groups. Suspecting that many of the poor and a few others in Lubbock were not receiving basic primary health care, the director of the city health department requested

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Thus, in 1967 the Lubbock Health Department became 1 of 75 departments in the United States that have participated with Community Demonstrations in the past decade in developing and demonstrating a primary health services delivery system, called POPE, according to socioeconomic groups. The model consists of (a) problem specification, (b) objective setting, (c) plan development, and (d) effectuation according to geographic socioeconomic strata and neighborhoods.

Each of the 75 participating communities has added to previously developed procedures by cooperating with Community Demonstrations in testing and adjusting and altering research findings and local ideas (especially in behavioral science) into applied, practical, workable, effective, and economical operational procedures. The model is designed for local health departments and other providers of primary health care. The system provides for identification and motivation of groups and individuals who have failed to practice preventive care and have high prevalence rates of disease and illness.

Technical advisory services are continually available from Community Demonstrations to any health department or agency that wishes to provide health services according to the needs of groups and individuals. The advisory services are provided by persons with years of experience in working with local health departments.

State and Federal personnel who promote the POPE model have encountered much opposition from health department administrators who are not interested in making health services available to the "less advantaged" groups. Many health departments still provide services at a central administrative facility, which is usually inaccessible to the poor people of the community. Thus, administrators and staffs of such departments must undergo attitudinal and behavioral changes before the nonusers of needed health services can be motivated to change their behavior. How such changes came about in Lubbock is highlighted in this paper. Lubbock's program is described in four phases.

Phase 1: Problem Specification

Stratification. In phase 1, Lubbock was stratified into three geographic socioeconomic groups by the method developed by the Community Demonstrations staff. Data on exterior house deterioration and infant mortality were the two basic indicators of socioeconomic or behavioral status. The stratification boundaries were determined by absolute rather than relative socioeconomic conditions in each stratum, and although the low socioeconomic stratum was confined to as small an area as possible it included most underusers of health services. The absolute socioeconomic conditions are necessary for efficient provision of priority health services, particularly in the low socioeconomic stratum.

The low socioeconomic stratum (SES) comprised 40,209 persons or 28.6 percent of the total population. Only 22,071 persons or 15.7 percent of the total population were in the middle SES. The high SES, the largest group, had a population of 78,310 or 55.7 percent of the total population. The stratification of Lubbock and 1967 fertility rates by SES are shown in figure 1. Problem specification. Data on health conditions were collected and assembled according to socioeconomic groups. These data consisted of demographic information taken from the Federal Census, live births with home addresses (1), neonatal and postneonatal infant mortality by home address (1), all morbidity and mortality of significant numbers, reported by address (1), immunization levels and other health information not readily available (2), residential sanitary conditions (3), and kinds of health services and the extent of their availability to each socioeconomic group.

The data were assembled, and the incidence rates were figured by SES and illustrated by tables, graphs, charts, maps, and colored cartograms. Pictures were taken of housing that was contributing to diseases and illness. The visuals were designed and used not only to inform the people and influence decision makers, but to aid in the necessary epidemiology.

Epidemiology. Sociological epidemiology started in Lubbock's Health Department auditorium in 1967 when more than 100 people, representing the city government, medical society, schools, churches, civic clubs, poor people, and others, met to discuss the health problems and find answers to such epidemiologic questions as What? Where? Who? Why? When? How? They were invited for a 2-hour presentation and discussion. but they stayed all day. They studied and planned. By the end of the day, this group resolved to support and assist the health department in providing more preventive and primary medical care for those in the low socioeconomic group who needed services. Most of the 1967 socioepidemiologic findings are shown in table 1.

Behavioral change of the health department staff. The Lubbock Health Department staff was confronted with problems other than determining the groups with high rates of mortality, morbidity, and poor health. We had to consider our own behavior and make decisions. Did we wish to give up our comfortable routine of working from 8 to 5 in "providing" preventive and public health services in our one health department building? Were we ready to make major changes attitudinally, financially, and technically? Were we ready to go to the low socioeconomic neighborhoods with services for people who needed them so desperately but had priorities other than health? Were we willing to go the "extra mile" to motivate

Figure 1. Socioeconomic groups and fertility rates, Lubbock, Tex., 1970



nonusers to seek and use needed health services? Were we willing to expand services to include primary medical care?

By early 1968 most of our staff, supported by citizens of the community, decided to execute a trial neighborhood action program in Posey, a grade school district in the low socioeconomic stratum of Lubbock. Posey was selected because the infant death and tuberculosis rates were very high and the immunization levels of preschool children very low. Posey had three ethnic groups —blacks, persons of Mexican descent, and Anglos. The neighborhood boundaries were readily identifiable.

Immunizations, tuberculosis control, infant and maternal health, and venereal disease control

services were provided in the Posey school building and in a church. A three-step, communicationmotivation program was developed with assistance from Community Demonstrations and the Texas State Department of Health.

Leaders of the Posey neighborhood were engaged in highly effective group communication activities, and people of all ethnic groups in the Posey neighborhood participated. As a result, neighborhood daytime clinics served their quota, and night clinics, established to accommodate working parents, overflowed. Young people participated in activities ranging from assisting physicians in clinics to tearing down dilapidated houses (by request of owners).

	Socioeconomic groups, 1967				Socioeconomic groups, 1970			
Factors –	Low	Middle	High	Total	Low	Middle	High	Total
Population:								
Number	40,209	22,071	78,310	140,590	42,700	23,282	83,119	149,101
Percent	28.6	15.7	55.7	100.0	28.6	15.6	55.8	100.0
Births:								
Number	1,355	627	1,075	3,057	1,294	632	1,376	3,302
Rate per 1,000 population	33.7	28.4	13.7	21.7	30.3	27.1	16.6	22.1
Women, 15–45 years:								
Number	8,691	5,025	20,898	34,614	9,457	5,292	21,746	36,495
Fertility rate per 1,000 women	155.9	124.8	51.4	88.3	136.8	119.4	63.3	90.5
Infant deaths:								
Number	54	16	17	87	42	14	22	78
Rate per 1,000 live births	39.8	25.5	15.8	28.4	32.4	22.2	16.0	23.6
Postneonatal deaths:								
Number	21	4	3	28	13	4	5	22
Percent	38.9	25.0	17.6	32.2	31.0	28.6	22.7	28.2
Tuberculosis cases:								
Number	24	3	4	31	16	2	3	21
Rate per 100,000 population	59.7	13.6	5.1	22.0	37.5	8.6	3.6	14.1
Syphilis cases:								
Number	63	13	0	76	28	11	1	40
Rate per 100.000 population	156.7	58.9	Ō	54.0	65.6	47.2	1.2	26.8
Hepatitis cases:								
Number	22	12	19	53	18	9	12	39
Rate per 100.000 population	54.7	54.4	24.3	37.7	42.2	38.6	14.4	26.2
Heart disease deaths:								
Number	117	49	97	263	115	51	111	277
Rate per 100.000 population	291.0	222.0	123.9	187.1	269.3	219.1	133.5	185.8
Immunizations, children under 5:								
Number					5.334	1.871	6.433	13.638
Percent					39.1	13.7	47.2	100.0
DTP. percent	73.0	72.0	90.0		48.0	85.0	83.0	
Poliomyelitis, percent.	59.0	59.0	84.0		36.0	68.0	65.0	
Measles, percent	40.0	25.0	68.0		70.0	87.0	88.0	
Rubella (smallpox 1967), percent.	48.0	43.0	67.0		51.0	59.0	69.0	
Average percent immunized	55.0	50.0	77.0		51.0	75.0	76.0	

Table 1. Socioepidemiologic analysis, 1967 and 1970, Lubbock, Tex.



Left to right: Dr. James E. Peary, Commissioner, Texas State Department of Health, Reuel H. Waldrop, and Dr. David M. Cowgill at the original citizens planning meeting

Although at this point the health department staff and Posey neighborhood workers "knew" that all the people in Posey had used needed available health services, an accurate enumeration revealed that approximately 25 percent had not. One-to-one communication had taken place with the majority of residents, but not with the 25 percent of nonusers. Because the nonusers had not been identified, they were never contacted individually. Nevertheless, the number of neighborhood persons using health services had increased from 25 to 75 percent. This increase stimulated us to do more.

During 1969 some of what was learned in Posey was applied to other neighborhoods having a high prevalence of health problems. For example, tuberculosis control activities were redirected at small neighborhood groups that had excessive numbers of active cases. The rapid reduction in prevalence rates was dramatic. But Lubbock needed more resources if it was to provide all of the most needed preventive and primary health care services to everyone in the low socioeconomic neighborhoods.

Updating community analysis. In 1970 community analysis was updated by respecifying health problems by socioeconomic groups. These findings, as well as 1967 data, are shown in table 1. The 1970 analysis was much more specific than the 1967 one with respect to both health problems and their prevalence.

During the past decade a consistently uniform gradient of 20 percent was found to exist between the social status indices of the socioeconomic areas in all communities analyzed by the POPE method. Thus, using the national rate in the middle, we determined a three-strata 20 percent rate gradient for each disease or other healthrelated condition. In 1970 we related an incidence rate for each condition in Lubbock to the 20 percent gradient and established the excess





of each condition in each socioeconomic group, as illustrated in table 2 and figure 2; the equation used for the table is: the existing rate minus the 20 percent gradient rate equals the excess.

In 1970 a neighborhood analysis was performed after the socioepidemiologic analysis. We divided Lubbock's low SES into six identifiable neighborhoods, using a number of factors to establish their boundaries. For example, old grade school boundary lines were helpful in determining neighborhoods; sometimes identification of a number of residents who were neighborhood leaders provided recognizable boundaries, and nurses serving the area were aware of natural groupings of persons. After the six neighborhoods were established, we determined the numbers and rates of prevalent conditions by using the previously assembled data for the low SES.

Rates of morbidity, mortality, and ill health varied irregularly among the six neighborhoods; usually each neighborhood had one or two rates that were much higher than those for the total low SES. Thus the neighborhood analysis pro-

 Table 2. Health condition rates excessive to the 20 percent gradient,

 Lubbock, Tex., 1967

Condition	Low	Middle	High
Fertility. Infant mortality. Tuberculosis. Syphilis. Heart disease deaths. Immunization levels. percent inadequate	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	125 - 86 = 39 25 - 21 = 4 14 - 18 = 0 59 - 9 = 50 222 - 364 = 0	51 - 69 = 0 16 - 17 = 0 5 - 15 = 0 0 - 7 = 0 124 - 291 = 0
ages 1–4	80 - 55 = 25	85 - 50 = 35	90-77=13



When houses were condemned by the City Housing Development young people would get permission, tear them down, and build garbage can racks. Extra racks were sold and the money was put into a social fund for the young people of the neighborhood.



vided a means of identifying small areas that had condition rates in excess of those of the total low SES. For example, 75 percent of the persons with tuberculosis were in two of the low SES neighborhoods. The neighborhood rates and their excess over the total rates of the low socioeconomic group are shown in table 3 and figure 3.

Phase 2: Priority Objectives

After the 1970 socioeconomic and neighborhood analysis, we established first, second, and third priorities. Our first priority was to eliminate the excessive prevalence of diseases and other health problems in neighborhoods that had rates in excess of those of the low socioeconomic group.

Figure 3. Neighborhood tuberculosis rates in excess of total low socioeconomic stratum of Lubbock, Tex., and of national rate, 1970



NEIGHBORHOODS

Table 3. Analysis of six low socioeconomic neighborhoods, Lubbock, Tex., 1970

Factors	Posey	Clayton Carter	Harwell	Cherry Point	Arnett Benson	Ella Isles	Total
	I	II	III	IV	V	VI	
Population:							
Number	6,620	2,822	5,598	4,470	15,397	7,793	42,700
Percent of low group	15.5	6.6	13.1	10.5	36.1	18.2	100.0
Women, 15-45 years:							
Number	1,333	586	1,133	1,062	3,693	1,650	9,457
Fertility rate	151.5 (14.7)	148.5 (11.7)	168.8 (30.0)	113.0	129.4	132.1	136.8
Births:		· · ·	· · ·				
Number	202	87	189	120	478	218	1,294
Rate	30.5 (0.2)	30.8 (0.5)	33.8 (3.5)	26.8	31.0 (0.7)	28.0	30.3
Infant deaths, 1969-70:							
Number	4	4	5	4	11	14	42
Rate	19.8	46.0 (13.6)	26.4	33.3 (0.9)	23.0	64.2 (31.8)	32.4
Tuberculosis cases:							
Number	0	0	2	4	8	2	16
Rate	0	0	35.7	89.5 (52.0)	52.0 (14.5)	25.7	37.5
Syphilis cases:							
Number	2	0	4	9	3	10	28
Rate	30.2	0	71.4 (5.8)	201.3 (135.7)	19.5	128.3 (62.7)	65.6

Note: Figures in parentheses are the excess of the rate for the total low socioeconomic group.



Dr. Cowgill providing medical services in one of the neighborhood clinics

The second priority was to eliminate prevalence of conditions in excess of the 20 percent gradient. Our third priority was to reduce condition prevalences in all socioeconomic groups according to remaining needs and remaining resources. Shortrange objectives were expressed in meaningful behavioral and quantitative terms that were applicable to each neighborhood. The neighborhood short-range or 1-year objectives were designed to contribute to the long-range objectives. Longrange objectives were expressed in rate-reduction specifics, applicable to the excessively high neighborhood and total low socioeconomic group. Some of our short-term neighborhood behavioral objectives were to:

1. Increase by 10 percent the number of women practicing family planning;

2. Increase by 10 percent clinic attendance of pregnant women;

3. Maintain treatment of 100 percent of persons known to have active tuberculosis;

4. Increase by 25 percent the proportion of persons receiving adequate medical diagnosis and treatment of syphilis; and

5. Increase from 55 percent to 65 percent the infants and preschool children receiving DTP, poliomyelitis, measles, and rubella immunizations.

Some first-priority long-range neighborhood objectives were to eliminate:

1. The highest excessive fertility rates by reducing the rates of neighborhood 3 from 166.8 to 103 and neighborhood 1 from 151.5 to 103;

2. The highest excessive infant mortality rates

by reducing the rates in neighborhood 6 from 64.2 to 25 and neighborhood 2 from 45.9 to 25;

3. The two highest tuberculosis rates by reducing the rates in neighborhood 4 from 89.5 to 20 and neighborhood 5 from 52.0 to 20;

4. The highest syphilis rates by reducing the rate in neighborhood 4 from 201.3 to 11 and neighborhood 6 from 128.3 to 11; and

5. The low immunization levels of children ages 1-4 living in the low SES by increasing the percentage of immunized from 55 to 80.

Some long-range (5-year) or second-priority objectives for the low socioeconomic group were to eliminate:

1. Births excessive to the 20 percent gradient by reducing the fertility rate from 156 to 103;

2. Infant deaths excessive to the 20 percent gradient by reducing the infant mortality rate from 40 to 25;

3. The prevalence of tuberculosis excessive to the 20 percent gradient by reducing the rate from 60 to 22;

4. The incidence of syphilis excessive to the 20 percent gradient by reducing the rate from 157 to 11; and

5. The number of inadequately immunized children ages 1-4 by increasing the immunization levels for poliomyelitis, DTP, measles, and rubella from 55 to 80 percent.

Phase 3: Plan Development

Health plans are usually developed and then initiated. This was not true in Lubbock. The planning was done by health department staff and citizens with advisory services from Community Demonstrations personnel. The staff adopted a "show me" attitude, and they had to experience a procedure that worked before they accepted it. Attitudes changed when activities were successful, and thus planning was in broken phases. The plan was written as phases of POPE developed; it included "what had been done" as well as "what was to be done." For example, objectives were written after the staff proved to themselves that they could reduce the prevalence of disease and illness among persons in the low socioeconomic group. The plan finally included alternate methods for accomplishing the objectives for organization, administration, manpower, financing, and cataloging potential resources. Effectuation was also included in the plan, and it is discussed under phase 4.



Posey Neighborhood Center and Clinic built by the City of Lubbock

Phase 4: Effectuation

Health services. Lubbock, like most communities, does not have adequate resources to provide total comprehensive health care for all its residents. The health department had to establish priorities and begin effectuation by providing as many as possible of the preventive and primary care services most needed. A Federal family planning grant, approved in 1970, provided enough additional money and personnel to include some preventive and primary health care in each of the six low socioeconomic neighborhoods with a high prevalence of disease. By redistributing and combining services, the department established clinics in each neighborhood and assigned to each of them one nurse, one health aide, and one sanitarian part time. One health educator divided his time among the six neighborhoods.

The clinic facilities were limited. Five neighborhood clinics were located in schools or churches. As a result of the people's enthusiastic response in Posey (neighborhood 1), officials of the city of Lubbock built a \$50,000 health and social services center in Posey. Not only were services provided in each neighborhood, but each neighborhood team had its own portable record file. This was a departure from the central record system but an innovative step toward providing better services for persons not likely to use health services. As each person or family used a service, a "Household Record of Action" form was filled out and filed by street address. The coordinated neighborhood services and records enabled continuous maintenance of nurse-aide-patient contact. The use of the record system is discussed further in step 3 of Communication-Motivation.

The limited neighborhood services were supplemented by private medical or public clinic facilities, or both. For example, no neighborhood clinic has an X-ray facility. When a person needed an X-ray he was referred to the central health department for this service. Persons needing more sophisticated medical services were referred to the private medical sector.

Communication-motivation. As services were provided in each neighborhood, nonusers were identified and motivated to seek and become regular users of needed health services by a continuing three-step process.

Step 1—mass media. Mass media were used to inform and influence the people in the community to seek and use needed health services. In most communities, little attention is given to the problems of the low socioeconomic group in the community news media. The neighborhood health groups in Lubbock, however, undertook activities that attracted the attention of television, radio, and newspapers. For example, the Posey Neighborhood Youth Council made headlines when it appeared before the city council to give a tuberculin test to the Mayor and council members and when the Mayor presented it with awards for exceptional neighborhood work. Also, the neighborhood people were shown on television when they removed 24 tons of rubble from their yards during one weekend.

The 1967 evaluation in Lubbock indicated that more than 90 percent of the families and individuals living in the high SES obtained their most needed health services, about 80 percent of the middle SES did, and only about 50 percent of the low SES obtained these services. From observations by staff of Community Demonstrations and behavioral research, these percentages of participation can be expected in a conventional health services system that has fairly good mass media coverage for its health education program (unpublished paper by R. H. Waldrop, J. M. Lane, and W. W. Dyal: "Community Health by Socioeconomic Groups").

Step 2-neighborhood group media. Neighborhood group education is a necessary adjunct to communitywide education. Neighborhood groups in Lubbock were continually engaged in the communication process in each of Lubbock's six neighborhoods with a high prevalence of disease. Organized and unorganized formal and informal groups were involved, including groups in churches, schools, PTAs, day care centers, mothers' clubs, "gossip" groups, family groups, youth groups such as Boy Scouts, "bull sessions" and gang meetings, block leader meetings, and home meetings. The neighborhood educator, nurse, health aide, other health department personnel, and neighborhood leaders and other volunteers met with the groups to inform and motivate persons to obtain needed health services. Participation in obtaining services was closely aligned with all educational meetings; for example, a church group's first objective was to get all of its preschool children adequately immunized.

The portable neighborhood file was taken to all meetings. Household data and the use of a service were recorded on the "Household Record of Action" form and placed in the file.

Step 2 is a supplement to step 1. In addition to the 50 percent of the people reached by community media, an additional 25 percent were involved by neighborhood group education-motivation activities in most of Lubbock's low socioeconomic neighborhoods.

Step 3—person-to-person communication. In the original Posey neighborhood program, personto-person communication took place with the neighborhood activities, but persons not likely to participate in these activities were missed. We knew that we had reached 75 percent of the persons in Posey, but who were the remaining 25 percent? They were not identified, were not purposely visited, and were not involved.

We solved this problem by supplementing the previously mentioned neighborhood record system with a neighborhood map to identify the users of health services. As each person in a neighborhood responded to steps 1 and 2 by using a service, a "Family Record of Action" form was completed as extensively as possible for the respondent and his family and placed in the file. A large neighborhood wall map, showing the location of all houses, accompanied each neighborhood file. When the family action form was completed and placed in the neighborhood file, the family's home location was checked on the map. Thus, a quick glance at the map revealed who had and who had not participated. The partial users of health services were determined from the family folders. After approximately 75 percent of the families were participating, or after mass and neighborhood group efforts were no longer productive, the unmarked homes were visited by professionals, health aides, volunteers, persons of influence, kinfolk, "gate keepers," or anyone interested enough in his neighbor's health to make a personal visit. When such home visits were made, family data were collected, filed, and used in later visits until the family was motivated to become a regular user of needed health services.

Motivation of the 25 percent nonuser families was and still is a difficult task. These persons have gone so long without services that they have acquired such deep-rooted mores and cultural behavior patterns of nonutilization of needed health services that they actually have a behavioral illness. Such a person, like one with tuberculosis, must be identified and his behavioral attitude and condition diagnosed (understood) and treated. Group approaches neither reach nor treat him. He must be identified and given personal treatment until he regularly seeks and uses his needed health services. The health worker must understand the patient's point of view. No one formula will motivate all. Each person is different. Basic behavioral principles, along with experience, intuition, positive thinking, concern, strong will, hard work, and continuing personal effort will result in informing and motivating many to seek and use needed services. When a worker fails to reach a person after a reasonable effort, he should look to others to communicate for him. A child, a grandparent, a friend, a neighbor, or maybe a complete stranger might be the one who can change the attitude of an unreached person. In Lubbock we have demonstrated that 10 to 15 percent of the 25 percent nonuser families have been reached.

The communication-motivation steps 1–3, like a waltz, must be performed in unison. Human behavioral patterns differ with neighborhoods just as health problems do. In one of Lubbock's low socioeconomic neighborhoods, participation reached 90 percent; in another, 80 percent. In one neighborhood the culture and behavior have been influenced for generations by extreme poverty, poor housing, crowding, filth, low morals, neglect, lack of services, and illness. It will take generations to accomplish some changes, and it will take a long time to motivate 90 percent of the people to use needed services. Nevertheless, the health department neighborhood health team has established health goals and is reaching at least an additional 5 percent each year in this neighborhood.

Mobility in the low SES has always been a problem for providers of health services, but in Lubbock we solved much of this problem by using the neighborhood map, mentioned previously, to identify the "movers." When a family moves, a note is made. After the mapping system has been in operation for a while, certain houses, usually those which have a high turnover of renters, are targeted. The "repeater" houses, actually few in number, are watched by neighborhood volunteers who have a telephone. They report moves to the neighborhood staff as soon as moves occur, and the new tenants are visited immediately, informed of available services, and encouraged to attend clinics if services are needed.

The four-phase program is now Lubbock's continuing system of providing primary health care, and plans are underway for more comprehensive health services. The West Texas Health Planning Council has received a Federal grant to design and implement an experimental health service delivery system. The council is considering a system similar to the much-discussed health maintenance organization.

Evaluation of Results

In 1970 the previously established long-range priorities for the low socioeconomic group were evaluated (1967 compared with 1970), and the following results were noted.

• The priority to reduce the fertility rate in the low socioeconomic group from 156 per 1,000 women aged 15-45 years to 100 by 1975 resulted in a rate of 137 by 1970-34 percent accomplished.

The priority to reduce the infant death rate from 40 per 1,000 live births to 25 by 1975 resulted in a rate of 32 in 1970—53 percent accomplished.
The tuberculosis rate in 1970 was 37 per 100,000 population compared with 60 in 1967. Thus the objective to reduce the rate to 20 by 1975 was 58 percent accomplished.

• The syphilis rate was reduced from 157 per 100,000 population to 66 in 1970. Thus the objective to reduce the rate to 11 by 1975 was 62 percent accomplished.

• The average immunization level of preschool children had decreased from 55 percent in 1967 to 51 percent in 1970 because of a lack of vaccine. (By 1971 it increased to 65 percent.)

Comment

The preliminary results of the Lubbock demonstration program indicate that if community health problems are specified for priority action according to socioeconomic groups, if groups with a high prevalence of disease and poor health are identified, and if priorities are established to reduce or eliminate excessive health problems in low socioeconomic groups in all communities, persons in all socioeconomic groups can experience more nearly equal and more positive health conditions.

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