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Health Status Indicator Reports: "State of the Art"

The Centers for Disease Control and Prevention introduced a set of Health Status Indicators in 1990 in response to a need for health status measures that present a broad overview of health and can be used by various levels of government (1). The indicators include 18 measures of health status and/or factors that put individuals at increased risk of disease or premature death. The development and definition of the indicators are described in *Healthy People 2000* Statistical Notes (1,2).

At the national level, the Health Status Indicators (HSI) are published annually in the *Healthy People 2000* Review (3). In this report, the HSI data are presented for the total population for the three most recent years and by race (White, Black, American Indian and Alaska Native, Asian and Pacific Islander) and Hispanic origin for the most recent year. At the State level, there are a number of different types of reports done for the HSI (see Table 1). The reports listed have been sent to the National Center for Health Statistics and do not represent a comprehensive list of reports. The following describes the "state of the art" of reporting.

State Reports

At least ten states have produced reports based on the Health Status Indicators. Many of these reports include trend data for the Indicators. For example, Utah's "*Healthy People 2000* Health Status Indicators" report gives trend data for all the Indicators starting from the early 1980's, except for childhood poverty and air pollution.

Another type of state-level report which uses most of the HSI is the Center for Disease Control and Prevention's "State Health Profiles." These reports are produced every year for each state. The contents of these reports vary from year to year. In 1995, data for 12 HSI's were included in these reports.

Race and Hispanic Origin Reports

One HSI, infant mortality, specifically utilizes race/ethnic data for a population's significant race and ethnic groups. In 1994, Committee 22.1, a group of health professionals who established the HSI, recommended that States and localities should analyze the rest of the indicators for each of the major population groups in their jurisdictions when possible (4). Production of State and local reports by race and ethnicity is, therefore, encouraged.

A report by the National Center for Health Statistics was recently published describing the HSI by race and Hispanic origin at the national level (5). At the State level, three of the ten States reported the HSI by race/ethnicity. For example, California, in "Analysis of Health Indicators for California's Minority Populations," presented the HSI by total, white, black, Native American, Hispanic (including 4 subgroups), Asian (including 10 subgroups), Pacific Islander (including 4 subgroups) and other races. For each indicator, the population, number of occurrences, age-adjusted rate, comparison to whites (indicated as significantly higher or lower), and standard errors were shown. Other States do not have such a large and

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Table 1. Health Status Indicators: Examples of State Reports

STATE	REPORT	DATA YEARS COVERED[1]	RACE AND HISPANIC ORIGIN[2]	LOCAL AREAS	CONTACT
California	Analysis of Health Indicators for California's Minority Populations	1990	W, B, AI/AN, Hisp (subgroups), A/PI (subgroups)	No	James Sutocky (916) 657–3057
	County Health Status Profiles	1991–93 average	(W, B, A, Hisp, for infant mortality)	County	
Maine	Maine's Health Status Indicators	1980–1992	(Maine total population compared to U.S. white population)	No	Edward Hayes, M.D. (207) 287–6653
Maryland	Consensus Set of Health Indicators for the General Assessment of Community Health Status	1986–1990	(Non-white, white for infant mortality)	County	Norma Kanarek (410) 225–6783
Nevada	Healthy Nevadans 2000 Health Status Indicators for Nevada 2000	1985–1990	(W, B, AI , Hisp for infant mortality)	No	Jean Gunter (702) 687–4482
New Jersey	Regional Health Planning: Data Book	1988	(W, B, Other for infant mortality)	Region	Rose Marie Martin (609) 984–6702
North Carolina	Health Objectives for the Year 2000: The North Carolina Challenge	1990–1992	(B, AI/AN for infant mortality)	No	George Myers (919)715–0269
Oregon	The Health of Oregon: Oregon Benchmarks and Health Status Indicators	1980–1992	(W, B, AI, A, Hisp, for infant mortality)	No	Lore Lee (503) 731–4479
Pennsylvania	Health Status Indicators for Pennsylvania Counties	1992–94 average	(W, B, Hisp for infant mortality, low birthweight, prenatal care, teenage births)	County	Jerry Orris (717) 783–2548
Texas	Health Status Indicators	1980–1992	(Non-Hisp W,Non-Hisp B, Hisp for infant mortality)	No	Carol Friedman, D.O. (512) 458–7261
	Health Status Indicators by Race and Ethnicity	1980–1993	Non-Hisp W, non-Hisp B, Hisp	No	
	Health Profiles	1990–1993	Non-Hisp W, non-Hisp B, Hisp	Senate Districts and selected counties	
	Texas County Health Status Database Project	1989–91 average	Non-Hisp W, non-Hisp B, Hisp	County, Region, and other areas	
Utah	Utah's Healthy People 2000 Health Status Indicators	1980–1991	(AI, B, W, other non-white, Hisp for infant mortality)	No	Robert Rolfs, M.D. (801) 538-6035
	Utah's Healthy People 2000 Health Status Indicators *Update*	1980–1992	(Utah total population compared to U.S. white population)	No	
	Utah's Healthy People 2000 Health Status Indicators by Race and Ethnicity	1989–91 average	W, B, Native American, A/PI, Hisp	No	
	Utah's Healthy People 2000 Health Status Indicators by Local Health Department District	1991–93 average	(Utah total population compared to U.S. white population)	Health Department Districts	
	Health Status in Utah by Education	1989–91 average	No	No	
All States[3]	State Health Profiles	1990–92 average	W, B, AI, A/PI, Hisp	No	Elliot Churchill (404) 639–3636

[1]Years based on vital statistics.

[2]Race and Hispanic origin identified by the following:
W = white B = black Hisp = Hispanic origin AI = American Indian AN = Alaska Native A = Asian PI = Pacific Islander

[3]State Health Profiles are prepared annually by the Centers for Disease Control and Prevention. These reports include some of the Health Status Indicators.

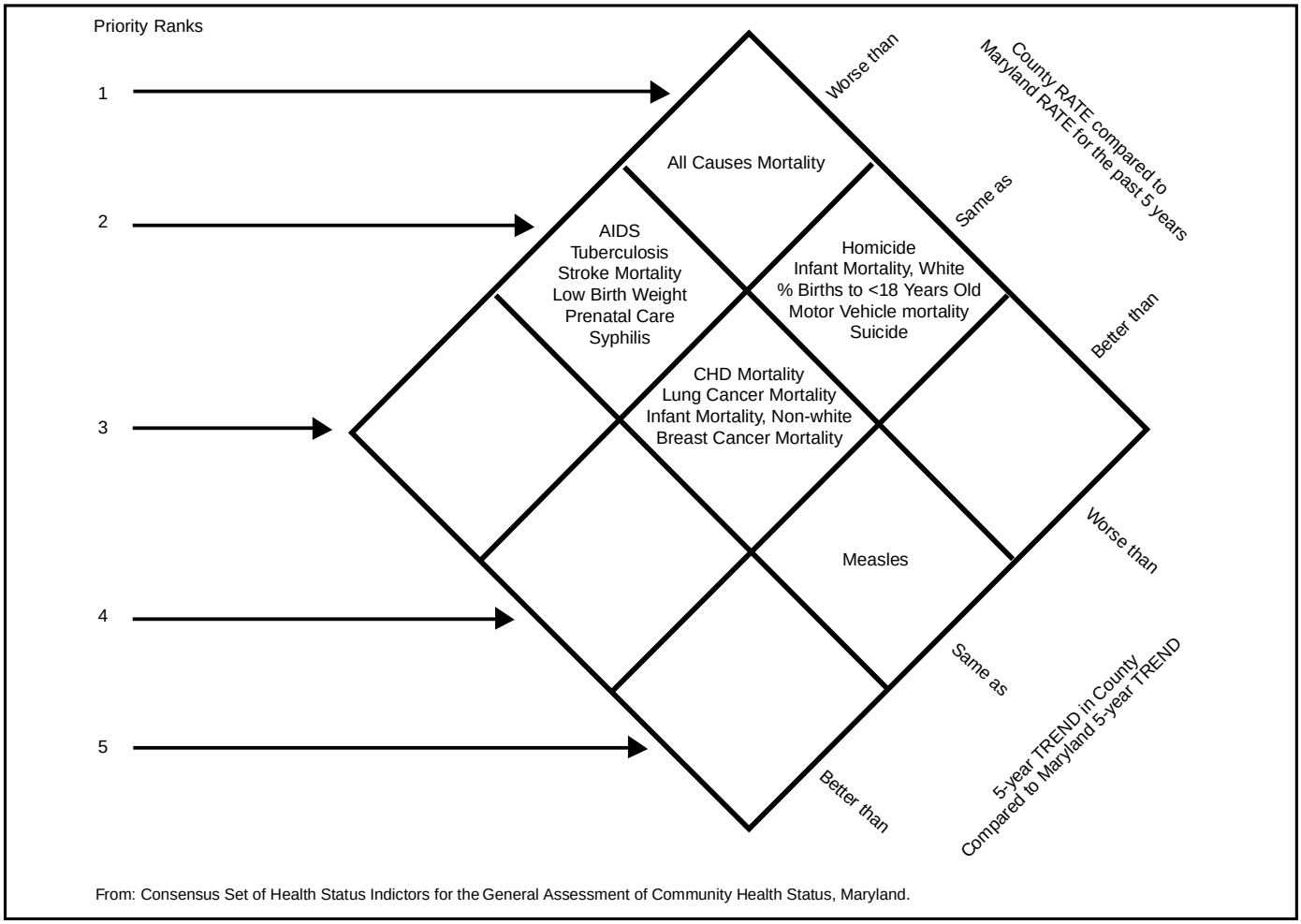

Figure 1. Prince George's County Priority Ranks

diverse population as California and, therefore, cannot produce reliable statistics for so many groups. North Carolina, for example, limited their race groups to blacks and American Indians and Alaska Natives.

In Texas, which has a large Hispanic population, persons of Hispanic origin are excluded from race categories. Thus, the Texas HSI reports present data for non-Hispanic white (including Asians and Pacific Islanders and American Indians and Alaska Natives), non-Hispanic black, and persons of Hispanic origin. This differs from the presentation of national data, which includes persons of Hispanic origin in the appropriate race categories.

Some states have more homogeneous populations. For example, the population in Maine is 98 percent white. The HSI report for Maine compares rates for Maine's total population with the national rates for whites. Utah also presented a similar comparison in two of its reports (see Table 1).

Local Area Reports

Since the Health Status Indicators are intended for use at the local level, some States have published data for local areas (county, region, or health department district). In Texas, ''Health Profiles'' were produced for 1995 State senate districts, composed of counties. In many instances, counties were shared by senate districts. Thus, additional individual ''Health Profiles'' were produced for each shared county. In Utah, reports have been produced for 1994 and 1995 which include the data for all of the HSI in each of 12 health department districts.

The State of Maryland produced a HSI report for counties. This report included a comparison between each county and the State in terms of current rates and recent trends. Maryland developed consensus matrices to prioritize indicators based on these comparisons for each county (see Figure 1). Two comparisons were made for each indicator. The first compared the county's rates to the state's rates for the past 5 years. The Sign Test was used to test for statistical significance. To be worse or better than the State, all five years had to have the same relationship. The second comparison was between the 5-year county trend compared to the State trend over the same time period. Using Kendall's Tau to measure significance, the indicator was placed in the better than, same as, or worse than category. Priorities were assigned based on the joint category, as shown in Figure 1. In addition, trend data for the HSI were given in the report, showing the county, State, and national data along with the Year 2000 target, if that

indicator is also an *Healthy People 2000* objective.

Another example of county level data is California's ''County Health Status Profiles.'' For each indicator (excluding air quality), the counties were ranked and divided into quartiles. For reference, data for the Year 2000 national target (if there is a corresponding *Healthy People 2000* objective) and the State-wide data for California were included in the ranking table. Counties with unreliable rates were not included in the ranking.

To address problems of small numbers at local levels, some States aggregate years to produce reliable statistics. For example, ''Health Status Indicators for Pennsylvania Counties'' presents three-year averages for the Indicators for each county with available data.

Exhortation

Experience has shown that the HSI can be used to make geographic comparisons with a consistent set of indicators, as originally intended. State health departments have produced reports showing trends over time and comparing local data with U.S. data. The HSI provide a compact description of health status across an array of health measures. The HSI have been used to summarize differences among racial and ethnic groups. These reports provide a powerful description of disparities in health status. The HSI have also been employed to examine differences among local health districts or counties. Such reports point out local variations in health status and provide a basis for community assessment and priority setting. We want to encourage the use of the HSI for these purposes. If you would like to receive copies of the reports identified in Table 1, contact the individuals listed. If you have questions about the HSI please contact Ken Keppel or Richard Klein with the Division of Health Promotion Statistics at the National Center for Health Statistics (301) 436–3548.

R.S.V.P.

We would like to hear about other state and local areas that have used the HSI and how they have been used. Please call us at the number shown above and/or send a copy of any reports to: State and Local Support Branch, National Center for Health Statistics, 6525 Belcrest Road, Rm 770, Hyattsville, MD 20782.

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1. Freedman MA. Health status indicators for the year 2000. Statistical Notes; vol 1, no 1. Hyattsville, Maryland: National Center for Health Statistics. 1991.
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(From Christine Plepys, Statistician, Data Monitoring and Analysis Branch, Division of Health Promotion Statistics, NCHS, CDC)

Health Status Indicators for States are now available on the INTERNET

Health Status Indicators calculated for the nation and for each State separately are now available on the INTERNET from the File Transfer Protocol (FTP) server of CDC. These are available on a LOTUS file so you can work directly with the statistics. They are currently available in LOTUS 4.0 .wk4 format (Windows), and in .wk1 format (DOS). (The associated .fmt file is also available.) The current file includes data from vital statistics for 1992.

There are two ways to access the file named **hsi-st92.wk4**. Using the CDC home page **(http://www.cdc.gov)**, you click on the following series of choices:

Information networks and Other Information Sources
CDC FTP server
Pub
Health statistics
NCHS
Datasets
Healthy_People_2000

If your browser software supports file transfer, you can click on the file name and it will be downloaded to your machine. You will then access the file through your LOTUS program. However, if you get an error message, this indicates your browser does not have these capabilities.

Alternatively, you can download the file using your own FTP connection program to access the directory as follows:

ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Datasets/Healthy_People_2000

If you have questions concerning these files please call the Data Monitoring and Analysis Branch at (301) 436–3548.

Capacity Building in Kansas and the CDC Assessment Initiative

Investment in Capacity Building

When referred to in an industrial context, we intuitively understand the concept of capacity. For example, when an electric company's demand for power exceeds its ability to produce and deliver power, shortages occur. The demand has exceeded its capacity. A solution requires the company to identify the limiting step or ''the bottleneck''. Cash in the bank won't solve the problem. Huge mounds of coal are of little value if there aren't enough furnaces and turbines. Power generation is of little value if power lines or transformers cannot deliver the product to the consumer. Short term power needs can sometimes be met by borrowing on the capacity of other producers, but consistent underproduction requires a long term solution. The long term solution involves investment in capacity building.

Public health agencies use resources to meet the need for health services and protection. When a public health agency cannot respond to public health needs, then the needs have exceeded the agency's capacity. High demand may create temporary shortages (e.g., a measles outbreak) which can be met by borrowing resources (e.g., experienced personnel) from other public health agencies. However, a persistent inability to perform public health functions requires an investment in capacity building.

A variety of resources and investments in infrastructure are required to build public health capacity. Money, knowledge, personnel, political influence, buildings, equipment, supplies, data, credibility, and access to the public are some of the resources that a public health agency must have in order to meet the needs of the population. One way to increase capacity is to invest in one type of resource which, in turn, leads to an increase in another resource. Examples include using experienced personnel to train inexperienced ones or investing money in database development. As in industry, bottlenecks can occur. Lots of experienced staff without vaccine makes dealing with a measles epidemic impractical. Lots of data are also useless without the knowledge of diseases, risk factors, and populations required to understand the implications of the data for public health.

One way to measure the capacity of a public health agency is to look at the agency's ability to absorb one resource and quickly convert it into another. For instance, when money is appropriated for a public health problem (e.g., breast cancer or immunization), the receiving agency may experience ''bottlenecks'' which impair its ability to respond (e.g., lack of staff, lack of access to the target population). One way to alleviate capacity problems is by resource sharing, or moving the resource to the level of the public health system which can most effectively complete a part of the mandate. For instance, a federal agency may identify state health departments capable of effectively converting money into public health action. This assumes that the State health departments have sufficiently well developed infrastructures to efficiently develop programs, recruit staff, provide training, collect data, implement interventions, and conduct evaluations. This demonstrates the paradox that a certain level of capacity is required to build capacity.

The Kansas Experience

The Kansas Department of Health and Environment has been building capacity in recent years. This has required the identification and investment of resources in many areas (e.g., obtaining grant funds, training personnel, hiring epidemiologists, building data systems, and creating credibility). Kansas has not escaped the difficulties associated with building capacity when there wasn't much pre-existing capacity upon which to build. Prior to this recent period of growth, the Bureau of Chronic Disease and Health Promotion (BCDHP) was turned down for several ''capacity building grants'' because the Bureau did not have enough of a foundation upon which to build. Kansas overcame this bottleneck and has become successful in building public health capacity for both acute and chronic diseases. As a result, the State is much more competitive in the process of obtaining outside funds.

In 1991, BCDHP was accepted by the Centers for Disease Control and Prevention (CDC) for inclusion in the CDC Assessment Initiative. Unlike the other seven participating states, however, the financial resources needed for the project in Kansas did not come from CDC; rather these resources were provided through a grant from the Kansas Health Foundation. The purpose of the Assessment Initiative is to help states use public health data for decision making. Although it is easy to recognize the merit of making decisions based on the best available information,

heretofore, decision making in public health, especially in the area of policy, has suffered from a lack of capacity to effectively collect, analyze, and interpret relevant data.

Participation in the Assessment Initiative and funding from the Kansas Health Foundation provided the opportunity to recruit two epidemiologists—one medical epidemiologist was assigned by CDC and a second was hired by BCDHP. These two individuals were the second and third epidemiologists in the Division of Health. This created a basic foundation which helped the Division of Health to attract six additional epidemiologists over the next 18 months. This growth in capacity helped the agency to meet some of its needs for scientific support in communicable disease, chronic disease, and injury. However, needs for additional capacity in environmental epidemiology and maternal and child health epidemiology remain.

The process of ''data driven decision making'' is initiated by accessing and analyzing health data. Data are analyzed 1) to define the health status of the population, 2) to determine how resources are being expended, 3) to establish objectives for high priority health issues, 4) to identify causes of disease and propose intervention strategies, and 5) to communicate information to policy makers and other users of public health data who need to make decisions regarding feasible solutions. Typically, additional problems become apparent through this process. These problems range from poor data quality, to ineffective allocation of resources, to the need for enabling legislation.

Although centered in the BCDHP, the intent of the Assessment Initiative is to enhance the capacity of the entire State health agency. Areas of focus during the project include 1) capacity building and general epidemiology, 2) community assessment and local data development, 3) collaboration between public health agencies and universities in research and teaching, 4) data system development, 5) analysis and dissemination of public health data for policy makers, 6) support for public health capacity, and 7) Healthy Kansans 2000.

(From Stephen Pickard, M.D., Medical Epidemiologist assigned to the Kansas Department of Health and Environment through the CDC Assessment Initiative.)

CDC Assessment Initiative Projects: How Do You Spell Success?

One of the contributions of the CDC Assessment Initiative has been to define assessment (1). To reiterate briefly; assessment is a process, an ongoing effort, involving expertise in medicine, epidemiology, statistics, data management, program administration, and information systems. The assessment process entails monitoring health status and measuring risk factors, identifying and evaluating health promotion and protection resources, and informing and advising policy makers in ways that facilitate decision making.

The Assessment Initiative projects in eight State health departments are designed to make the assessment process an integral part of State and local health departments (2). How do these projects know when they are succeeding? They are succeeding in different ways. Five ''types'' of success are spelled out below. These types are described in pure forms to emphasize differences; in reality, projects are more of an alphabet soup.

Type A—The project improves or initiates a number of specific activities that contribute to the assessment process in various parts of the health department (e.g., develop a hospital discharge data system, revamp the cancer registry, or prepare health profiles for local areas).

Type B—The project focuses more intensely on several areas of the health department and instills an ongoing assessment process in those areas (e.g., develop a needs assessment process for maternal and child health at the local and State level).

Type C—The project enhances or instills an ongoing assessment process in its local health departments by providing them with data, training, planning tools, etc.

Type D—The project enhances or instills an ongoing assessment process in most areas of the health department.

Type E—A State health department where the use of data becomes an integral part of the culture—the ability to produce what is needed is a given—and the use of information in the policy process happens naturally.

The goal of the Assessment Initiative is type E success—a broad-based, ongoing, assessment process where policy makers rely on information to make decisions. Types A-D all contribute to success. How could you use data more successfully to promote public health?

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2. National Center for Health Statistics. The CDC Assessment Initiative: A Summary of State Activities. Statistics and Surveillance; no 7. Hyattsville, Maryland. October 1995.

Pat on the Back

This section is intended to highlight activities that contribute to assessment as a core function of public health. This ''Pat on the Back'' goes to the Bureau of Local and Rural Health Systems in the Kansas Department of Health and Environment for their development of a Community Health Assessment Process. Congratulations to Kansas for a job well started.

The Kansas Community Health Assessment Process (CHAP)

The Bureau of Local and Rural Health Systems of the Kansas Department of Health and Environment (KDHE) responded to requests from local health departments, hospitals, and community organizations for assistance with community health assessment by assembling a state technical assistance team. Because the initiative was largely unfunded, assembling the team required redirection of existing personnel and resources within that Bureau toward furthering community health assessment in Kansas. The Bureau requested scientific/epidemiologic support from the CDC Assessment Initiative project in Kansas.

One of the first tasks undertaken by the team was to create a uniform community assessment process intended for all communities. The team extensively revised tools and documentation from existing models to assemble the CHAP workbook. The workbook was issued jointly by the Kansas Association of Local Health Departments, the Kansas Hospital Association, and KDHE.

Although no shortage of community assessment models exists, the team elected to create a uniquely Kansas community health assessment process for the following reasons: 1) to borrow strengths from and avoid weaknesses in other available models; 2) to identify a uniform process to be offered to Kansas communities which was endorsed by both state public health entities and collaborating private organizations; 3) to use the state-sponsored process as a mechanism for establishing a relationship between the technical assistance team and as many communities as possible; 4) to incorporate into the workbook for each community, county-specific data in a standard format; 5) to adapt the implementation process to Kansas' predominately rural communities; 6) to make the process flexible so that lessons learned could be incorporated into future versions; 7) to ensure that all team members and collaborating organizations were comfortable with the process; 8) to collect input into the process from the local level; 9) to work on solutions to recurring local problems such as sponsorship, leadership, resource identification, community buy-in, interagency competition, and lack of experience interpreting health data; and, 10) to establish a sense of ownership of the process among all Kansas participants.

When the team distributed the CHAP workbook to communities, it was with the understanding that the process was incomplete, especially those phases dealing with local planning and implementation. In exchange for technical assistance, the team requested that communities allow team members to observe and ask questions for the purpose of identifying strategies which resulted in successful community health planning and action. With assistance from the Masters in Public Health Program at the University of Kansas, an evaluation of initial phases of community implementation of CHAP has begun.

Although community assessment in Kansas is completely voluntary, initial implementation of CHAP has been successful. Seventeen communities have committed to the process and approximately that many more have shown interest. Although most of the seventeen communities currently engaged in the process are in the coalition development phase, several have progressed to the data collection phase.

For more information about the community health assessment team, the process, or the workbook please call Abby Horak at (913) 296–7100 or Stephen Pickard at (913) 296–8039.

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