Health surveillance based on social and health indicators

INDICADORES SOCIAIS E DE SAÚDE PARA A OPERACIONALIZAÇÃO DA VIGILÂNCIA À SAÚDE

INDICADORES SOCIALES Y DE SALUD PARA LA OPERACIONALIZACIÓN DE LA VIGILANCIA EN SALUD

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ABSTRACT

The proposal of Health Surveillance is a techno-assistance model that is still in construction in Brazil. To implement the Health Surveillance proposition, the healthcare professionals have to be prepared to capture and understand the epidemiologic and social profiles of the population. The goal of this study was to identify and classify information about social and health indicators available on the Internet to be used by healthcare professionals. One is about a literature review, performed in several databases. The results show that there is a wide range of information related of health indicators on the Internet, although all this information is a limited instrument for healthcare professionals. The level of aggregation and the focus in morbimortality make the utilization of these databases difficult within the proposal of Health Surveillance. The conclusion of this study notes that research findings based on social and health indicators must be made available in Internet.

KEY WORDS

Health status indicators.
Population surveillance.
Public health.

RESUMO

A Vigilância da Saúde é um modelo tecno-assistencial em construção no Brasil. Para sua efetivação, é necessário que os profissionais de saúde sejam instrumentalizados para a captação e apreensão dos perfis sociais e de saúde-doença das populações. O objetivo desse estudo foi identificar e classificar informações relativas a indicadores sociais e de saúde, disponíveis na Internet para ser utilizado pelos trabalhadores de saúde. Trata-se de uma revisão bibliográfica realizada em diversas bases de dados. Os resultados mostram a existência de uma ampla gama de informações relativas a indicadores de saúde disponíveis na Internet. Contudo, estas informações são instrumentos limitados para os trabalhadores de saúde, pois o nível de agregação e a centralidade na morbi-mortalidade dificultam sua utilização dentro da proposta de Vigilância da Saúde. Conclui-se que é muito importante que resultados de pesquisa com base em indicadores sociais e de saúde sejam disponibilizados na Internet.

DESCRITORES

Indicadores básicos de saúde.
Vigilância da população.
Saúde pública.

RESUMEN

En Brasil, la Vigilancia en Salud es un modelo técnico-asistencial en construcción. Para ser efectiva es necesario que los profesionales de salud sean capacitados en la captación y conocimiento de los perfiles sociales y de salud-enfermedad de las poblaciones. El objetivo de este estudio fue identificar y clasificar informaciones relacionadas a los indicadores sociales y de salud disponibles en Internet, para ser usado por trabajadores de salud. Se trata de una revisión bibliográfica realizada en diversas bases de datos. Los resultados muestran la existencia de una amplia gama de informaciones sobre indicadores en salud disponibles en internet. A pesar de ello, estas informaciones son instrumentos limitados, pues el nivel de agregación y centralidad en la morbilidad y mortalidad dificultan su uso en Vigilancia en Salud. Se concluye que es de gran importancia que resultados de investigación sobre indicadores sociales y de salud estén disponibles en Internet.

DESCRIPTORES

Indicadores de salud.
Vigilancia de la población.
Salud pública.

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INTRODUCTION

Health Surveillance, as a healthcare model, emerges in a national scenario that aims to implement the Unified Health System – Sistema *Único de Saúde (SUS)* – in Brazil, and covers healthcare as a social product, derived from the social relations present in a specific political, economic, ideological and cultural scenario. In the Health Surveillance proposal, the collective healthcare actions should not be restricted to interventions on the host, the etiological agent and the environment, but also focus on the determiners behind this triad[1]. This proposition represents a change in the traditional conceptual base, limited to controlling or eradication of disease-transmitting agents, towards a widening that covers the social relations that end up defining inequalities as well.

There are two formulated conceptions of Health Surveillance. The first, with a wide scope, reiterates actions for disease containment, but requires an equally wide perspective of health-disease when incorporating the interpretation of the determiners, in the light of critical epidemiology. The second conception, considered rather narrower, comprehends Health Surveillance as a group of actions focused on knowledge, prediction, prevention and coping with selected healthcare problems related to factors and conditions of risk, simply meaning a modest enhancement of epidemiological surveillance[2].

In the Health Surveillance proposal, the collective healthcare actions should not be restricted to interventions on the host, the etiological agent and the environment, but focus on the determiners behind this triad

The debates about Health Surveillance are split in three branches, regarding its focus of action. The first is equivalent to the analysis of health situations, which looks at the healthcare situations of the many population groups in function of their living conditions. The second branch postulates the possibility of institutional integration between Epidemiologic Surveillance and Health Surveillance. And the third refers to a redefinition of health practices, integrating two dimensions: one, technical, resulting in the conception of Health Surveillance as an alternative healthcare model conformed by a group of health practices with distinct technological combinations, aiming to control determiners, risks and damages, and another dimension that emphasizes management, characterizing Health Surveillance as a practice that organizes the work processes of healthcare[2].

One author[3] defends that the Health Surveillance practice is an organized form of social response to healthcare problems, with references to the positive concept of health and the paradigm of social production of health. In this perspective, health is the result of a process of social production that expresses the quality of life of a population. Quality of life in this case represents the conditions of existence of human beings in their daily life, either individually or collectively, particularly considering that this way of living assumes a certain level of access to economic and social goods and services. Therefore, the construction of a Health Surveillance system, guided by a model of analysis of risk situations that replaces the individual risk model, uses territory as the space of reference and highlights the importance of considering the heterogeneity of the population regarding necessities and access to healthcare services[3].

In order to act in the perspective of Health Surveillance, it is indispensable to use social and health indicators that, when articulated, help to measure problems and evaluate results of healthcare interventions. These indicators, used in agreement, are the appropriate way to involve different social actors in the construction of inter-sector projects capable of influencing the formulation of public policies that can respond better to social healthcare demands.

It is necessary to distinguish between social indicators and public statistics. Public statistics (obtained from demographic census, sample surveys or collected from the administrative records of Ministries, State Secretariats or Municipal governments) correspond to raw social data, not entirely contextualized. They are actually *raw materials* for the construction of social indicators.

Examples of public statistics are vital events, such as deaths and births. These are still in a preliminary stage, but they are useful for the construction of indicators that will allow for a better-contextualized and comparative verification (in time and space) of the social reality, with the construction of birth and death rates. Indicators are expressed as rates, ratios, averages, indexes, distributions by class and by absolute figures. They can refer to the whole population or specific sociodemographic groups[4].

The hypothesis that guided the study, whose results are presented in this article, considers that, with the technological evolution and advances in healthcare research, there is enough information about the social and health situation, especially in the state of São Paulo, to support professionals' Health Surveillance practice. Therefore, the goal of this research was to verify whether the information produced about the health of the population is published for the population as a whole and, more specifically, for healthcare professionals.

With this article, we attempt to contribute to the implementation of the Health Surveillance model by systematically presenting information related to social and health indicators available on the Internet and on public domain websites, facilitating the access of healthcare professionals to resources that can enhance the construction of health-disease profiles of the populations they are responsible for.

OBJECTIVES

Identifying and classifying information available on the Internet or public domain software related to: (i) social and health indicators; (ii) indicators of production in healthcare services; (iii) indicators of quality of life; (iv) compound health indicators and others that can be used by healthcare workers in Health Surveillance.

METHOD

This is a literature review study. The studied theme was *Health Surveillance Indicators*, according to the Critical Epidemiology perspective. After the theme was defined, the following component stages of the literature review were performed:

- Search for catalogues on articles in the *DEDALUS*, *LILACS*, *MEDLINE* e *SCIELO* databases;

- Gathering the articles according to the abstracts of the topics addressed in these articles and the verification of the bibliographic references at the end of each article in order to identify other possible references;

- Search in websites in the healthcare area, WHO (World Health Organization), PAHO (Pan American Health Organization), the Ministry of Health, other related areas, the SEADE Foundation (State System for Data Analysis – *Fundação Sistema Estadual de Análise de Dados*), UNESCO (United Nations Educational, Scientific and Cultural Organization) and IBGE (Brazilian Institute for Geography and Statistics – *Instituto Brasileiro de Geografia e Estatística*), research groups, etc.;

- Systematic compilation of the material identified, classifying according to the type of media (book, magazine articles, journal articles or websites);

- Selection of the bibliographic references that presented data about social and health indicators, available on the Internet.

- Transcription of the data on a catalogue sheet to ease the sorting of the topic and the selection of data.

The literature search was based on the following keywords: health indicators, indicators of quality of life, social indicators, economic indicators, indices, social development, healthcare quality indicators and education indicators.

The basis for this presentation consisted of websites or information available on the Internet between October and November, 2005.

The collected data were organized according to the source, author, abstract, type of indicator and the aggregation level. Afterwards, the data were analyzed critically, considering all information. The data were organized in spreadsheets with EXCEL software and transcribed to an MS-WORD table.

Data analysis was performed through exhaustive reading, aiming at external criticism – criticism about the text, authenticity and origin – and internal criticism – criticism about the intrinsic value of the content, which analyzes the article and judges the author's authority, the value of the article and the ideas contained within [5].

RESULTS AND DISCUSSION

The results showed that a large volume of information about social and health indicators can be identified on Internet websites, as seen in chart I. Some of the known databases used in this study are: DATASUS (database of the Unified Health System - *Sistema Único de Saúde*), IBGE, WHO, UNESCO, PAHO, SEADE foundation, SIM (Mortality Information System *Sistema de Informações sobre Mortalidade*), SINASC (Live births information system - *Sistema de Informação de Nascidos Vivos*), SI-PNI (National Immunization Program Information System – *Sistema de Informação do Programa Nacional de Imunizações*), CEM (Metropolitan Center of Studies – *Centro de Estudos da Metrópole*) and the São Paulo City Secretariat of Health.

The presented results refer to data relative to Brazil and/or São Paulo, since the goal was to evidence the possibility of utilizing this information, especially for healthcare professionals working in São Paulo.

Chart 1 – Internet addresses for websites with data about social and health indicators, according to author, information summary, type of indicator and aggregation level - São Paulo – October to November, 2005

Source	Author	Summary	Type of Indicator	Aggregation Level
http://w3.datasus.gov.br/datasus/datasus.php	Ministry of Health	Statistical data about morbidity and mortality and healthcare, among others. Keywords: Health Indicators, Healthcare, Healthcare Network, Epidemiology, Morbidity, Vital Statistics, Demographics and Social -economy.	Morbidity data, disability, access to services, quality of service, conditions of life and environmental factors.	Brazil, Brazilian regions and cities.
http://www.seade.gov.br/	SEADE	Indexes such as the Youth Vulnerability Index – Índice de Vulnerabilidade Juvenil (IVJ), Research on Life Conditions – Pesquisa de Condições de Vida (PCV), Social Responsibility Index of São Paulo – Índice Paulista de Responsabilidade Social (IPRS), Social Vulnerability Index of São Paulo – Índice Paulista de Vulnerabilidade Social (IPVS), presented in maps and statistical data. It also has articles in books that present healthcare indicators of the city of São Paulo and data about mortality in the state of São Paulo.	Youth Vulnerability Index – Índice de Vulnerabilidade Juvenil (IVJ), Research on Life Conditions – Pesquisa de Condições de Vida (PCV), Social Responsibility Index of São Paulo – Índice Paulista de Responsabilidade Social (IPRS), Social Vulnerability Index of São Paulo – Índice Paulista de Vulnerabilidade Social (IPVS)	State and city of São Paulo.
http://www.ibge.gov.br/	IBGE	Statistical data about social indicators, demographics, research on family budgets and mortality.	Service access and utilization; types of healthcare insurance coverage; healthcare establishments per administrative sphere, working condition, category, regimen and type of service; service delivery according to the funding modality, data about employed personnel, volume of beds and hospitalizations, education and work, demographic aspects, contraception, population distribution per color or race, up-to-date information about work and income, education and life conditions.	Brazil, Brazilian Regions, metropolitan regions of the state capitals.
http://www.centrodametropole.org.br home.html	CEM	Information about the city of São Paulo, its limits and sub-prefectures, districts of the metropolitan region and its postal sectors. This database contains the social vulnerability map of the city. The data in the census sector can be observed in cartography – produced both for São Paulo and each of its sub-prefectures.	Social Vulnerability Index	Metropolitan region of São Paulo and subprefectures.
http://www.datasus.gov.br/catalogo/sim.htm	SIM-Datasus	Information for the definition of priorities in the programs for disease prevention and control, based on death certificates collected by the state Secretariats of Health.	Mortality	Brazil, states and cities
http://www.datasus gov.br/catalogo/sinasc.htm	SINASC-Datasus	Data about living births, with their most significant characteristics, such as gender, birthplace, type of delivery and weight at birth, among others.	Birth rate, number of deliveries per type, index of weight at birth.	Brazil, states and cities
http://www.datasus gov.br/catalogo/pni.htm	National Immunization Program	Information about routine vaccinations and campaigns, abandonment of the vaccination calendar and control of the immunization reports.	Vaccination coverage (routine and campaigns), abandonment rate.	Brazil, states, Brazilian regions and cities
http://www.saude.sp.gov.br/portal/c76e8383c0a80a030023f1bbe96741c4.htm	City Secretariat of Health	Information about morbidity-mortality, alive births, demographics, service production, healthcare index and healthcare atlas. Health indicators for each sub-prefecture in the city of São Paulo: mortality, alive births, outpatient clinic production, population, AIDS notification and hospital production. It also present maps according to the prevalence of diseases.	Morbidity-mortality, living births, demographics, demográficas, service production, health index, AIDS notification and hospital production.	City of São Paulo and subprefectures

Note: the databases of the Ministry of Health, the SEADE Foundation, the IBGE and the São Paulo Secretariat of Health provide free access to their respective websites. CEM has some access limitations in its database, with the purchase of a CD-ROM being necessary. Data from SIM, SINASC, PNI also have access limitations, but they can be accessed through a CD-ROM provided by the Ministry of Health or by consulting the DATASUS website.

DATASUS, as a healthcare information system, started the organization of information with statistical data records about mortality and survival. With the wider range of the concept of health and the consideration by its determiners, the analysis of the health situation incorporated new dimensions and other data were included. The DATASUS website has information available on morbidity, access to services, service quality, life conditions and environmental factors that are useful to build health indicators that are relevant in the quantification and evaluation of Health Surveillance. They also report on healthcare for the population, registry of hospital and outpatient clinic networks, registries of healthcare facilities, information about financial, demographic and socioeconomic resources. DATASUS has data with coverage per macro-region (regions of the country and states) and micro-regions (capitals, metropolitan regions and cities). There is no aggregation of data per sub-prefecture. Access to the website is easy. Information is available without the need for registration to obtain the data. It is a comprehensive website, built with information from the healthcare services themselves, which allows these same services to monitor the health indicators in their cities, functioning as participants and contributors of information.

The SEADE Foundation has more social indicators, such as the Youth Vulnerability Index – *Índice de Vulnerabilidade Juvenil* (IVJ), Social Responsibility Index of São Paulo – *Índice Paulista de Responsabilidade Social* (IPRS), and the Social Vulnerability Index of São Paulo – *Índice Paulista de Vulnerabilidade Social* (IPVS), which are presented in maps and statistical data. These indicators, in addition to being accessible on the Internet, are published in books. Besides the social indexes, the SEADE Foundation has data on mortality in the State of São Paulo. The indexes elaborated by the SEADE Foundation, presenting statistical data and analyses of the results, are important instruments that can be used by the healthcare services to direct public policies and result in a better application of resources.

The IBGE website has statistical data about social indicators, demographics, research on family budgets and mortality. Its aggregation level covers Brazil, Brazilian Regions, metropolitan regions and cities. Its data can contribute to the construction of health indicators to be used by the services.

The CEM website has information about the city of São Paulo, its boundaries, sub-prefectures and districts of the metropolitan region. Its database has the social vulnerability map of the city of São Paulo. The data are available in maps for the city of São Paulo and its sub-prefectures. The site has an application for the elaboration of maps of the state of São Paulo and its metropolis per user request. However, to use this resource, it is necessary for the computer to have specific applications installed, which limits access. The CEM database is also available on CDs that can be requested on the website.

SIM offers information collected from death certificates managed by the State Secretariats of Health, which can be used as health indicators by researchers and entities of society, and also by healthcare managers to define priorities in the programs of disease control and prevention.

SINASC makes data about living births available, according to gender, birthplace, type of delivery and weight at birth, among others.

Access to the SINASC and SIM databanks can be obtained through CD-ROMs distributed by the Health Surveillance Secretariat of the Ministry of Health, and directly on its website. Also, these can be accessed by consulting the DATASUS website. The statistical data in these information systems are important health indicators and can be used to build other compound and more complex indicators.

SI-PNI attempts to contribute for the control or eradication of infectious-contagious and immuno-preventable diseases. Its use is limited, since the SI-PNI information is not accessible at the DATASUS website, which is also through for other data from the Ministry of Health.

The São Paulo City Secretariat of Health has information about morbidity-mortality, alive births, demographics, service production, health index and health atlas. The health indicators are aggregated according to the city totals and per sub-prefecture. In spite of this specific aggregation for each sub-prefecture, there is no data about health determiners, such as social indicators that would allow the healthcare services to analyze and elaborate the local profile more precisely.

The PAHO website has no indicator tables, but has books published with some statistical data, aggregated per country and regions of Latin America, which can be used by the services to improve knowledge about health indicators. The books can be accessed for free on the Organization website.

FINAL CONSIDERATIONS

The results show that there is a reasonable amount of information about social and health indicators available on the Internet. However, these indicators, presented the way they are, have limited power to be used by the healthcare workers to perform Health Surveillance.

Such limitations happen due to the lack of alignment among the aggregation levels, which are used by the healthcare services and to compile data. While services and healthcare teams work with smaller aggregation levels, such as sub-districts or territorial agglomerations with up to 2000 people (coverage area of a Family Healthcare Team), the indicators available on the Internet refer to larger, municipal of sub-prefecture aggregations.

Some sites do not allow free access to their pages and to some databases. Others require the installation of specific applications for visualization, which are not always in

the public domain. Other sites allow access to data stored on CD-ROMs upon request as the only form of access.

The indicators available on the Internet emphasize the use of morbidity-mortality indicators to evaluate health. However, Health Surveillance criticizes the single utilization of these indicators, by considering that they only evidence a group of individual problems, not exposing the living conditions of people and their respective social groups. This exposes them to social, institutional and geographic relations that determine these morbidity situations.

During the bibliographic research, theses and dissertations were found discussing social and health indicators for very specific regions and population aggregations, but these were not available on the Internet. Therefore, it is strongly emphasized that these authors make their production available on the Internet so that society as a whole and the healthcare service can benefit from contributions by studies produced in Universities.

The education of professionals to work in the Health Surveillance perspective need epidemiological data, but these are not the only need. It is important that dialogic relations are developed with healthcare professionals in order to identify the conceptions with which they operate to intervene in health problems. In this space for dialogue, necessities and vulnerabilities are unveiled. Such a situation will conform a "living" epidemiologic intelligence, which will make actions of promotion, prevention, treatment and recovery of health feasible, with an effective impact on Health Surveillance [6].

Besides being an important management, planning and health surveillance instrument, making information about health indicators available and accessible to all, especially to the users of the healthcare services, is an essential step for an effective social control of the SUS, one of the pillars for the democratization of our Health System.

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