

Evaluation of a Public Health Emergency of National Concern using Tracer Methodology.

Avaliação de uma Emergência de Saúde Pública utilizando a Metodologia Tracer.

Evaluación de una emergencia de salud pública utilizando la Metodología tracer

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RESUMO

Este artigo tem o objetivo de descrever a experiência da utilização da metodologia *tracer* para avaliação do fluxo de informação adotado pelo Centro Nacional de Informações Estratégicas em Vigilância em Saúde (CIEVS) para acompanhamento de uma Emergência de Saúde Pública de Importância Nacional (ESPIN) no ano de 2010. Durante a realização de pesquisa avaliativa do centro, foi selecionada uma ESPIN como evento traçador e o fluxo percorrido pelas informações foi monitorado durante sua permanência como ponto de discussão no Comitê Permanente (CP). O evento estudado foi um desastre natural (inundação) ocorrido no estado de Alagoas e capturado pelo CIEVS na imprensa

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e confirmado pelo CIEVS parte no estado 48 h depois. O evento passou pelo Instrumento de Decisão sendo considerado uma ESPIN e inserido no monitor CIEVS na Lista de Eventos de Verificação para monitoramento pelo CP. Durante três meses a ESPIN foi acompanhada sendo 180.000 pessoas acometidas com 37 mortes, 17 casos de leptospirose e 175 de dengue confirmados. A metodologia *tracer* se mostrou instrumento útil para se evidenciar a passagem do evento marcador em tempo real pelas diferentes etapas do sistema vigilância em saúde, podendo ser utilizado de maneira complementar nos estudos de avaliação.

Descritores: Avaliação em saúde; vigilância epidemiológica; metodologia *tracer*.

ABSTRACT

This article aims to describe the utilization of *tracer* methodology for evaluating the flow of information adopted by the National Center for Strategic Information in Health Surveillance (CIEVS) to monitor a Public Health Emergency of National Importance (PHENC) during the

year of 2010. During the development of an evaluation of the center, a PHENC was selected as a tracer and the process of information flow was monitored during the discussion of the event in the Permanent Committee (CP). The studied event was a natural disaster (flood) occurred in the state of Alagoas, captured by the center in the press and confirmed by the state CIEVS 48 h later. The event was evaluated by the Decision Instrument and was considered a PHENC and was inserted in the List of Events into the monitor CIEVS Health for monitoring by the CP. During three months the PHENC was followed and resulted in 180,000 people being affected with 37 deaths, 17 cases of leptospirosis and 175 and confirmed cases of dengue. The tracer methodology proved useful to show to the passage of real time event marker for different stages of health surveillance system that can be used in a complementary manner in the evaluation studies.

Descriptors: Health evaluation; epidemiological surveillance; tracer methodology.

RESUMEN

Este artículo tiene como objetivo describir la experiencia de utilizar la metodología del trazador para evaluar el flujo de información adoptada por el Centro Nacional de Información Estratégica en la Vigilancia de la Salud (CIEVS) para acompañar a una Emergencia de Salud Pública de Importancia Nacional (Espín) en el año de 2010. Durante el desarrollo del centro de investigación evaluativa, Espín fue seleccionado como marcador y el evento impulsado por el flujo de información fue monitoreada durante su estancia como un punto de discusión en el Comité Permanente

(CP). El caso estudiado fue un desastre natural (inundación) se produjeron en el estado de Alagoas y CIEVS capturado por la prensa y confirmado por el estado CIEVS 48 horas más tarde. El evento que se pasa a través del instrumento se considera una Espín Decisión y se inserta en la lista de monitores CIEVS de eventos de verificación para la vigilancia por parte de la CP. Durante los tres meses fue acompañado Espin 180.000 personas están afectadas, con 37 muertes, 17 casos de leptospirosis y 175 de dengue confirmados. La metodología trazador demostrado ser útil para mostrar el resultado del paso de marcador verdadero evento de tiempo para las diferentes etapas del sistema de vigilancia de la salud que se pueden utilizar de manera complementaria en los estudios de evaluación.

Descriptorios: Evaluación de la salud, la vigilancia, la metodología del marcador.

INTRODUCTION

Public Health Surveillance (PHS) is defined as “the ongoing systematic collection, analysis and interpretation of health data, closely integrated with the timely dissemination of these data both to those providing the data and to those who can apply the data to control and prevention programs”(1).

Currently with the mass transportation of goods and people the risk of the dissemination of local diseases across the boundaries is real, which makes the need to enhance the local capacity to detect these events in a timely manner the major objective of the International Health Regulations (IHR) proposed by the World Health Organization (WHO). The State Party should establish a National Focal

Point to implement the measures under the Regulation (2). In order to accomplish these recommendations, the Brazilian Ministry of Health (MoH), designated the National Center for Strategic Information and Response in Health Surveillance (CIEVS) as the National Focal Point for the IHR.

The evaluation of PHS system has the objective of reassessing if its attributions are being executed properly and if changes are necessary to respond new priorities in the public health system in a community (3,4). Evaluations are based on the systemic approach proposed by Donabedian (5, 6), i.e., the description of the structure, processes and results. This approach is of unquestionable value, but in consequence of its compartmentalization, it is unable to evaluate some attributes of the processes in which the products are generated.

To PHS systems is important, beyond the merely description, the evaluation of how the information flows through the system, like the time spent between its generation, investigation and closing (7). Tracer methodology initially was idealized to evaluate the quality of health assistance(8), and further has been adapted to several uses, but never to assesses the PHS systems.

We therefore used the tracer methodology to assess the processes of notification and communication of the events monitored by the National CIEVS.

METHODOLOGY

Study Design

This study was conducted at the National IHR

Focal Point located in the Ministry of Health (MoH) in Brasília, capital of Brazil. Initially it was performed a description of the structure, processes and products of the center, which permitted to assess how the epidemiological information flows through the system. This aspect, highlighted in this evaluation, was tested using tracer methodology, which is the object of this work.

The data from protocols and official regulations were collected and analyzed with the support of a stakeholder.

CIEVS Operational process

The National CIEVS was created in the year of 2006 in response to a demand of the International Health Regulations (IHR) (2). In accordance to this document, WHO assists the Members States in building systems to better detect report and respond to Public Health Emergencies (PHE) on their territories and requires the designation of a National IHR Focal Point.

The Brazilian National IHR Focal Point (CIEVS) analyses information received through several sources, mainly electronic mailing, telephonic contact and internet site. Notifications from health care professionals, health care unities, press and national and international organisms are also analyzed.

The collected information are analyzed through a flowchart called Flux of Information (FI), illustrated in Figure 1, the events are considered as Public Health Emergencies of National Concern (PHENC) after its evaluation by the Decision Instrument (DI) from the annex II of the IHR (FIGURE 2), which has four

questions to determine these risks, if there is one positive answer; the event is considered of national concern, two positives questions the event is of international concern, being eligible to OMS notification.

PHENCs are monitored weekly during the meetings of Permanent Committee (PC) composed by all the representatives of technical areas of the Brazilian Ministry of Health. All the actions (to be executed and executed) are discussed during these meetings and they are registered in software called Monitor CIEVS through the List of Events Verification (LEV), developed and maintained by the staff of the CIEVS.

If the event is not confirmed or the data are insufficient to do its classification as a PHENC, it is inserted in a routine called Alert CIEVS, which notifies through e-mail all the members involved in the local epidemiological surveillance.

Tracer Methodology

Tracer methodology was described by the first time in 1973 by Kessener, Kalk and Singer (8), and was conceived to evaluate the quality of health care services. The aims of the approach were twofold. Firstly, to evaluate the quality of care and secondly, to identify areas that need improvement through the use of tracers which are “representative” of those areas of patient care.

This methodology provides real assessment on how the selected tracer moves through the system and how that system relates to it. The mainly advantages refers to its flexibility and the possibility to follow-up the issue.

Tracer Events

The Public Health Emergency of National Concern selected to this study, obtained during the 2010, 6th of September meeting of the PC, was a natural disaster (flood) occurred in the state of Alagoas (Northeastern of Brazil).

The variables collected for the analysis of the selected event were extracted from the reports of the local executive team, which comprises information of total of individuals affected by the disaster, number of deaths and variables related to the occurrence of diseases like suspected cases, laboratorial confirmation, date of detection, date of notification, total sum of cases and discarded cases.

RESULTS

The selected tracer event was a natural disaster occurred in the month of June of 2010 in the state of Alagoas (northeastern of Brazil). The flood was detected by National CIEVS through the press. In this event is an example of the active surveillance function executed by this center.

Although all natural disaster are considered as a PHENC according to the DI, the FI adopted by the National CIEVS requires that that the information captured from the press has to confirmed before its definition as an Emergency. A consult was done to the Alagoas CIEVS, which took two days to confirm the veracity of the information.

This event was then inserted in the LEV, considering its magnitude and potential risk to enhance the transmission of infectious diseases. In the same week, during the meeting of the

PC, it was decided that a team of specialists from the MoH would be sent to the disaster local to help the local team.

After three months of monitoring by the National CIEVS, more than 180.000 persons were afflicted by the flood, accounting for a total of 37 deaths. There were 58 suspected cases of leptospirosis (17 confirmed), 825 suspected cases of Dengue Fever (175 confirmed), 53 suspected cases of pertussis (19 confirmed), 18 cases of varicella, five suspected cases of Hepatitis A, four cases of meningitis, three cases of rubeola and one case of typhoid fever.

DISCUSSION

The tracer methodology applied to the two PHENC selected for the study allowed to visualize all the flux through which the epidemiological information is analyzed by the National CIEVS. It was also possible to assess the time of execution of each step involved, and some products generated by the Center, like technical support offered to the affected areas.

The activities developed in the identification of the public health emergencies, the divulgation of the strategic information to the WHO and to the others parts of the CIEVS network, and, finally, its monitoring into the meetings of the Permanent Committee through the List of Event Verification. The detection of the events demonstrated to be very sensitive because of the several fonts of information used by the center.

The selected events used to test the FI of the National CIEVS demonstrated to be highly representative of the activities developed

by this center, and we do not observed any critical points in the flux and analysis of the epidemiological information in this instrument. Nevertheless, in the disaster in the Alagoas state, it was possible to identify a delay in the notification of the event to the National CIEVS by the state part. It was circumvented by the multiple sources of information monitored by the National CIEVS, which demonstrated, once more, the virtue of the system.

Additionally, the evaluation of the two selected events indicated that, regardless of marker selection, it is possible to apply the tracer methodology with trustful results, which demonstrates the flexibility of the approach. Other produced evidence refers to the description of the products obtained through the IF, it was possible to identify the analysis results, in terms of epidemiological intelligence, used to plan, execute and evaluate the actions that were put in term to control the events repercussions to human health.

Approaches to the evaluation of PHS systems are based on the methodology of the Center of Diseases Control and Prevention and World Health Organization in which the main axis is the description of the system and the evaluation of its attributes (simplicity, flexibility, data quality, acceptability, sensitivity, predictive value positive, representativeness, timeliness and stability) (3, 9). Tracer methodology was initially conceived to evaluate the quality of healthcare, until now its usefulness as an instrument of PHS systems have not been assessed.

It is necessary to perform more studies in order to test the accuracy, besides others parameters, of the application of tracer

methodology in the evaluation of PHS systems. Methodological limitations of the present study made this analysis impossible. The selection of more events and the tracking of the tracer since its generation at source would be further steps to achieve this goal. In this study we only analyzed the National CIEVS FI.

Despite the limitations of this study, the authors' perception about tracer methodology is that the simplicity and flexibility of its application allow the evaluation flows of information and the products generated in its analysis. Besides, tracer methodology could function as complimentary to the evaluation of PHS systems along with others methodologies.

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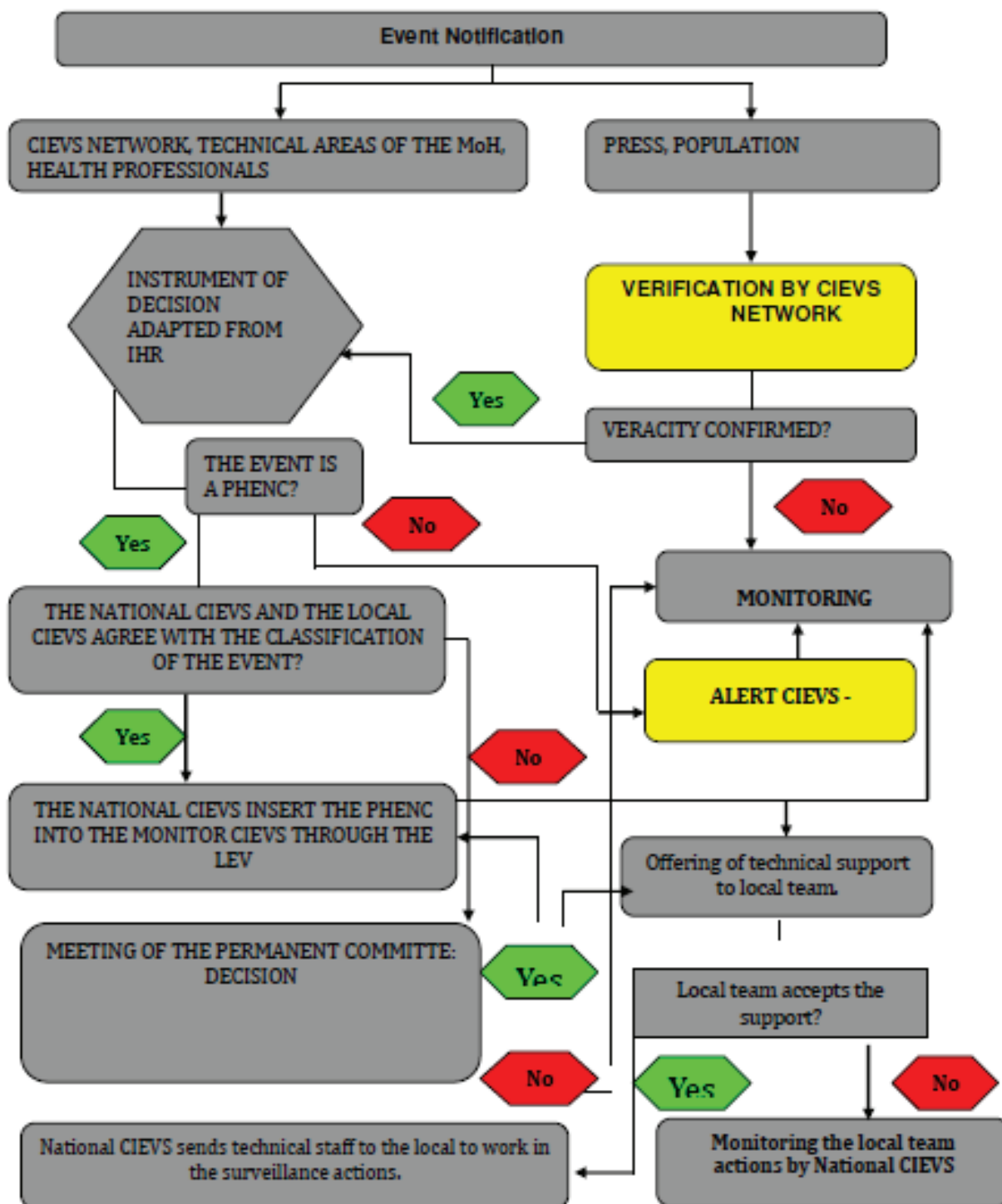


Figure 1 – Flux of Information (FI) used by the Ministry of Health’s National Center for Strategic Information and Response in Health Surveillance (CIEVS).

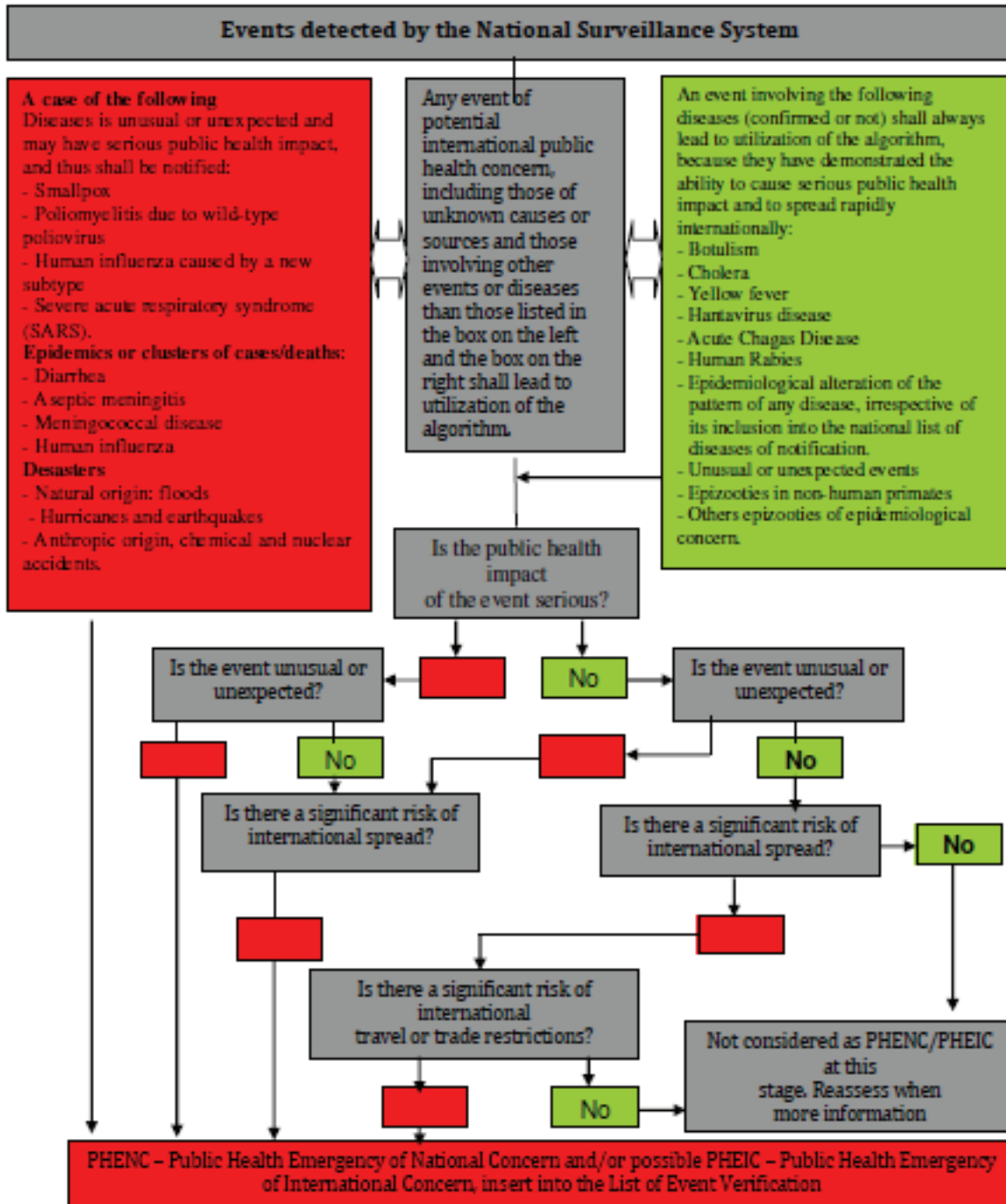


Figure 2 – Instrument of Decision (ID) adapted from the annex II of the 2005 International Health Regulations (IHR)