CEDOC Informativo/Newsletter

**N. 1 Enero/ January 2008**

# Centro de Documentación / Documentation Center

## Objetivos/ Objectives

Identificar y atender las necesidades de información, adquisición, organización, almacenamiento, generación, uso y difusión de la información en salud pública veterinaria y proveer recursos bibliográficos técnicos-científicos al equipo de profesionales de la unidad y a los usuarios externos.

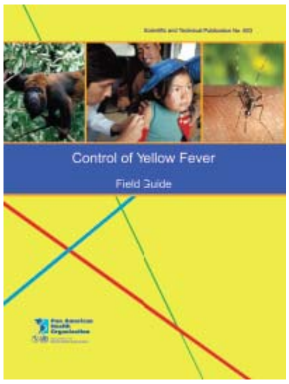
Identify and take care of the needs of information, acquisition, organization, storage, generation, use and diffusion of the information in veterinary public health and provide technical scientific bibliographical resources to the professional staff of the unit and to the users external.

## Temas de interés general / Subjects of general interest

### Control de la Fiebre Amarilla - Guía Práctica (OPS)


Esta guía práctica para el control de la fiebre amarilla fue diseñada por la Organización Panamericana de la Salud (OPS) con objeto de proporcionar a los trabajadores de salud de diferentes niveles de atención, así como a los diversos programas de estudios de las facultades y escuelas de ciencias de la salud herramientas para el control de la fiebre amarilla selvática y la prevención de la reurbanización de la fiebre amarilla en la Región. Las medidas de prevención y control descritas en esta guía se basan en las recomendaciones del Grupo Técnico Asesor de la OPS sobre enfermedades prevenibles por vacunación.
**Text in Spanish**
http://www.paho.org/spanish/ad/fch/im/guiapractica_fiebreamarilla.pdf

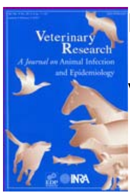
### Control of Yellow Fever – Field Guide (PAHO)




This field guide was designed by the Pan American Health Organization (PAHO) to offer health workers at different levels of the health care system and different programs in the schools of health sciences to tools to control jungle yellow fever and prevent its reurbanization in the Region of the Américas. Thre prevention and control measures described in this guide are base don the recommendations of the PAHO Technical Advisory Group on Vaccine-preventable Diseases.
**Text in English**
http://www.paho.org/English/AD/FCH/IM/FieldGuide_YellowFever.pdf

## Informaciones disponibles en formato electrónico / Information available in electronic format

### Encefalopatía Espongiforme Bovina / Bovine Spongiform Encephalopathy




**Review on the epidemiology and dynamics of BSE epidemics**
Ducrot C, Arnold M, Koeijer A, Heim D, Calavas D
Vet Res. 2008 Jul-Aug; 39 (4):15

The paper describes how the comprehensive surveillance of bovine spongiform encephalopathy (BSE) and studies carried out on these data has enhanced our knowledge of the epidemiology of BSE. Around 7 000 BSE cases were detected through the screening of about 50 million cattle with rapid tests in Europe. It confirmed that the clinical surveillance had a poor capacity to detect cases, and also showed the discrepancy of this passive surveillance efficiency between regions and production types (dairy/beef). Other risk factors for BSE were being in a dairy herd (three times more than beef), having a young age at first calving (for dairy cattle), being autumn-born (dairy and beef), and being in a herd with a very high milk yield. These findings focus the risk on the feeding regimen of calves/heifers. Several epidemiological studies across countries suggest that the feedborne source related to meat and bone meal (MBM) is the only substantiated route of infection - even after the feed ban -, while it is not possible to exclude maternal transmission or milk replacers as a source of some infections. In most European countries, the average age of the cases is increasing over time and the prevalence decreasing, which reflects the effectiveness of control measures. Consistent results on the trend of the epidemic were obtained using back-calculation modelling, the R(0) approach and Age-Period-Cohort models. Furthermore, active surveillance also resulted in the finding of atypical cases. These are distinct from previously found BSE and classified in two different forms based on biochemical characteristics; their prevalence is very low (36 cases up to 1st September 2007), affected animals were old and some of them displayed clinical signs. The origin and possibility of natural transmission is unknown.
**Text in English**
http://www.vetres.org/articles/vetres/pdf/2008/04/v07232.pdf

## Fiebre Amarilla / Yellow Fever


**Vaccinating in disease-free regions: a vaccine model with application to yellow fever**
Codeço CT, Luz PM, Coelho F, Galvani AP, Struchiner C
J R Soc Interface. 2007 Dec; 4 (17): 1119-25

Concerns regarding natural or induced emergence of infectious diseases have raised a debate on the pros and cons of pre-emptive vaccination of populations under uncertain risk. In the absence of immediate risk, ethical issues arise because even smaller risks associated with the vaccine are greater than the immediate disease risk (which is zero). The model proposed here seeks to formalize the vaccination decision process looking from the perspective of the susceptible individual, and results are shown in the context of the emergence of urban yellow fever in Brazil. The model decomposes the individual's choice about vaccinating or not into uncertain components. The choice is modelled as a function of (i) the risk of a vaccine adverse event, (ii) the risk of an outbreak and (iii) the probability of receiving the vaccine or escaping serious disease given an outbreak. Additionally, we explore how this decision varies as a function of mass vaccination strategies of varying efficiency. If disease is considered possible but unlikely (risk of outbreak less than 0.1), delay vaccination is a good strategy if a reasonably efficient campaign is expected. The advantage of waiting increases as the rate of transmission is reduced (low R0) suggesting that vector control programmes and emergency vaccination preparedness work together to favour this strategy. The opposing strategy, vaccinating pre-emptively, is favoured if the probability of yellow fever urbanization is high or if expected R0 is high and emergency action is expected to be slow. In summary, our model highlights the nonlinear dependence of an individual's best strategy on the preparedness of a response to a yellow fever outbreak or other emergent infectious disease.
**Text in English**

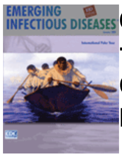
## Fiebre Aftosa /Foot-and-Mouth Disease

**Modelling studies to estimate the prevalence of foot-and-mouth disease carriers after reactive vaccination**
Arnold ME, Paton DJ, Ryan E, Cox SJ, Wilesmith JW
Proc Biol Sci. 2008 Jan; 275 (1630): 107-15

Foot-and-mouth disease (FMD) is a highly contagious and economically significant viral disease of cloven-hoofed animals. Vaccination can be used to help restrict the spread of the infection, but evidence must be provided to show that the infection has been eradicated in order to regain the FMD-free status. While serological tests have been developed, which can identify animals that have been infected

regardless of vaccination status, it is vital to know the probable prevalence of herds with FMD carriers and the within-herd prevalence of those carriers in order to design efficient post-epidemic surveillance strategies that establish freedom from disease. Here, we present the results of a study to model the expected prevalence of carriers after application of emergency vaccination and the impact of this on the sensitivity of test systems for their detection. Results showed that the expected prevalence of carrier-containing herds after reactive vaccination is likely to be very low, approximately 0.2%, and there will only be a small number of carriers, most likely one, in the positive herds. Therefore, sensitivity for carrier detection can be optimized by adopting an individual-based testing regime in which all animals in all vaccinated herds are tested and positive animals rather than herds are culled.
**Text in English**

## Influenza Aviar / Avian Influenza



**Cross-subtype Immunity against Avian Influenza in Persons Recently Vaccinated for Influenza**
Gioia C, Castilletti C, Tempestilli M, Piacentini P, Bordi L, Chiappini R et al
Emerg Infect Dis. 2008; 14 (1): 121-8

Avian influenza virus (H5N1) can be transmitted to humans, resulting in a severe or fatal disease. The aim of this study was to evaluate the immune cross-reactivity between human and avian influenza (H5N1) strains in healthy donors vaccinated for seasonal influenza A (H1N1)/(H3N2). A small frequency of CD4 T cells specific for subtype H5N1 was detected in several persons at baseline, and seasonal vaccine administration enhanced the frequency of such reactive CD4 T cells. We also observed that seasonal vaccination is able to raise neutralizing immunity against influenza (H5N1) in a large number of donors. No correlation between influenza-specific CD4 T cells and humoral responses was observed. N1 may possibly be a target for both cellular and humoral cross-type immunity, but additional experiments are needed to clarify this point. These findings highlight the possibility of boosting cross-type cellular and humoral immunity against highly pathogenic avian influenza A virus subtype H5N1 by seasonal influenza vaccination.
**Text in English**
http://www.cdc.gov/eid/content/14/1/pdfs/121.pdf

## Inocuidad de los Alimentos / Food Safety

**Foodborne botulism**
Cereser ND, Costa FMR, Rossi Junior OD, Silva DAR; Sperotto VR
Cienc Rural 2008; 38 (1): 280-7

Foodborne botulism occurs after ingestion of preformed toxins produced by the ***Clostridium botulinum***, which has been considered one of the most potent known one. The disease, acquired after ingestion of various kinds of foods, has acute character, and provokes gastrointestinal and neurologic symptoms. Homemade canned foods are those that represent higher risk to human health. Processed meat products are frequently associated with botulism outbreaks, mainly sausages, ham and pates. Dairy and canned food, as well as fermented foods, also may be related with this disease. Still, botulism may be caused by toxin production in deep wound, named wound botulism; and after ingestion of honey contaminated with spores by infants, named infant botulism.
**Text in Portuguese**
http://www.scielo.br/pdf/cr/v38n1/a49v38n1.pdf

## Rabia / Rabies

**Human exposure to potential rabies virus transmitters in Olinda, State of Pernambuco, between 2002 and 2006**
Dantas-Torres F, Oliveira-Filho EF
Rev Soc Bras Med Trop. 2007 Dec; 40 (6): 617-21

The aim of the present study was to evaluate the data on human exposure to potential rabies virus transmitters in Olinda, State of Pernambuco, Brazil. Data from 7,062 patients who underwent antirabies prophylactic treatment in Olinda between 2002 and 2006 were analyzed. As expected, dogs and cats were involved in most of the cases; i.e. 82.3 and 16.3%, respectively. Attacks by nonhuman primates,

bats and other species (unspecified) were also reported. Among the 7,062 patients who underwent antirabies treatment, 582 patients abandoned the treatment, either by indication from the health unit (195) or by their own decision (387). In conclusion, this study has indicated that prophylaxis for human rabies in this urban area will require a multifaceted approach, including health education, post-exposure prophylaxis, systematic vaccination for dogs and cats, and possibly selective control over wild animals such as hematophagous bats.
**Text in English**
http://www.scielo.br/pdf/rsbmt/v40n6/a03v40n6.pdf

## Vacunación Animal / Animal Vaccination

**Animal vaccination and the evolution of viral pathogens**
Schat KA, Baranowski E
Rev Sci Tech. 2007 Aug; 26 (2): 327-38

Despite reducing disease, vaccination rarely protects against infection and many pathogens persist within vaccinated animal populations. Circulation of viral pathogens within vaccinated populations may favour the development of vaccine resistance with implications for the evolution of virus pathogenicity and the emergence of variant viruses. The high rate of mutations during replication of ribonucleic acid (RNA) viruses is conducive to the development of escape mutants. In vaccinated cattle, unusual mutations have been found in the major antigenic site of foot and mouth disease virus, which is also involved in receptor recognition. Likewise, atypical changes have been detected in the immunodominant region of bovine respiratory syncytial virus. Large deoxyribonucleic acid (DNA) viruses are able to recombine, generating new genotypes, as shown by the potential of glycoprotein E-negative vaccine strains of bovine herpesvirus-1 to recombine with wild-type strains. Marek's disease virus is often quoted as an example of vaccine-induced change in pathogenicity. The reasons for this increase in virulence have not been elucidated and possible explanations are discussed.
**Text in English**
http://www.oie.int/eng/publicat/rt/2602/PDF%2026-2/04-schat327-338.pdf

**Consumer attitudes to vaccination of food-producing animals**
Scudamore JM
Rev Sci Tech. 2007 Aug; 26 (2): 451-9

Explicit spatial analysis of infectious disease processes recognizes that host-pathogen interactions occur in specific locations at specific times and that often the nature, direction, intensity and outcome of these interactions depend upon the particular location and identity of both host and pathogen. Spatial context and geographical landscape contribute to the probability of initial disease establishment, direction and velocity of disease spread, the genetic organization of resistance and susceptibility, and the design of appropriate control and management strategies. In this paper, we review the manner in which the physical organization of the landscape has been shown to influence the population dynamics and spatial genetic structure of host-pathogen interactions, and how we might incorporate landscape architecture into spatially explicit population models of the infectious disease process to increase our ability to predict patterns of disease occurrence and optimally design vaccination and control policies.
**Text in English**
http://www.oie.int/eng/publicat/rt/2602/PDF%2026-2/14-scudamore451-460.pdf.pdf

**Economics of animal vaccination**
McLeod A, Rushton J
Rev Sci Tech. 2007 Aug; 26 (2): 313-26

This paper describes the steps that might be used in assessing the economic justification for using vaccination to control animal disease, and the way that vaccination is financed and administered. It describes decisions that have been taken with respect to preserving international trade, and issues related to protection of livelihoods. Regardless of the motivation for vaccination, its costs can usually be shared between the public and private sectors. Cost-effective vaccination requires methods of delivery to be adapted to livestock production systems. The paper concludes by suggesting questions around the use of vaccination that would merit further economic analysis.
**Text in English**
http://www.oie.int/eng/publicat/rt/2602/PDF%2026-2/03-mcleod313-326.pdf

**Marker vaccines and the impact of their use on diagnosis and prophylactic measures**
Vannier P, Capua I, Le Potier MF, Mackay DKJ, Muylkens B, Parida S, Paton DJ, Thiry E

Rev Sci Tech. 2007 Aug; 26 (2): 351-72

Molecular biology and technical advances in DNA recombination have ushered in a new era in vaccinology. This article examines the recent development of specific marker vaccines and examines the impact of their use on the diagnosis and prevention of major infectious diseases. Gene-deleted vaccines, DIVA strategies (differentiating infected from vaccinated animals) and similar methods have been successfully applied in the control and eradication of Aujeszky's disease, infectious bovine rhinotracheitis, classical swine fever, foot and mouth disease and, recently, avian influenza. The efficacy and performance of existing marker vaccines and their companion diagnostic tools (which should be assesed by an independent body) are discussed, as are the ways in which these tools are deployed by competent authorities. The limits and the advantages of the use of marker vaccines are carefully analysed in the light of practical experiences. Although these vaccines can limit the speed and the extent of virus dissemination and thus reduce the number of animals slaughtered, marker vaccines are no substitute for sanitary measures. Early detection and warning systems and the quick implementation of sanitary measures, including stamping out, remain key issues in the control of highly contagious diseases.

**Text in English**

http://www.oie.int/eng/publicat/rt/2602/PDF%2026-2/06-vannier351-372.pdf

**Regulatory requirements for vaccine authorisation**

Jones PG, Cowan G, Gravendyck M, Nagata T, Robinson S, Waits M

Rev Sci Tech. 2007 Aug; 26 (2): 379-93

Vaccines are one of the most important tools available in the prevention and control of diseases in animals. It is therefore of the utmost importance that when vaccines are used, such use should meet with the requirements of the World Organisation for Animal Health *Terrestrial Animal Health Code* and must be authorised by the recognised licensing body in the country/region where the vaccines are to be used, in accordance with the three key criteria of quality, safety and efficacy.This article provides a comprehensive and comparative description of the regulatory requirements in place for veterinary vaccines in major regions of the world, highlighting the similarities and pointing out also where there are differences. Recent advances in harmonisation of such testing requirements achieved through the International Cooperation on Harmonisation of Technical Requirements for Registration of Veterinary Medicinal Products (VICH) are also described. The contents will provide a valuable guide to those engaged in the research and development of vaccines globally, and reassure those involved in the prevention and control of animal diseases that veterinary vaccines, when fully authorised and used according to the label instructions, are safe and efficacious.

**Text in English**

http://www.oie.int/eng/publicat/rt/2602/PDF%2026-2/08-jones379-394.pdf

**Safe use of vaccines and vaccine compliance with food safety requirements**Grein K, Papadopoulos O, Tollis M

Rev Sci Tech. 2007 Aug; 26 (2): 339-50

Advanced technologies and regulatory regimes have contributed to the availability of veterinary vaccines that have high quality and favourable safety profiles in terms of potential risks posed to the target animals, the persons who come into contact with the vaccine, the consumers of food derived from vaccinated animals and the environment. The authorisation process requires that a range of safety studies are provided to evaluate the products. The design and production of vaccines, and their safe use, are primarily assessed by using data gathered from extensive pre-marketing studies performed on target animals and specific quality tests. The current post-marketing safeguards include good manufacturing practices, batch safety testing, inspections and pharmacovigilance. In addition to hazard identification, a full benefit/risk evaluation needs to be undertaken. The outcome of that evaluation will determine options for risk management and affect regulatory decisions on the safety of the vaccine; options might, for example, include special warnings on package inserts and labels.

**Text in English**

http://www.oie.int/eng/publicat/rt/2602/PDF%2026-2/05-grein339-350.pdf

## Seminarios, Congresos, Eventos, Cursos /Seminars, Congress, Events, Courses

**Curso Internacional de Bioseguridad en las Instalaciones Veterinárias**

24-28 de Marzo 2008

La Habana, Cuba

http://www.veterinaria.org/revistas/redvet/n010108/010815.pdf

**8º Curso de Capacitação para Médicos Veterinários Responsáveis Técnicos em Estabelecimentos Produtores de Alimentos de Origem Animal**
29 Febrero 2008 – 28 Junio 2008
FCAV/UNESP – Jaboticabal, SP, Brasil
http://www.funep.com.br/eventos/#visualizar_evento.php?id_eventos=28


Organización Panamericana de la Salud
Oficina Regional de la Organización Mundial de la Salud
Unidad de Salud Pública Veterinaria
Centro Panamericano de Fiebre Aftosa

Pan American Health Organization
Regional Office of the World Health Organization
Veterinary Public Health Unit
Pan American Foot and Mouth Disease Center

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