

## 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

## Plan de Acción 2011-2020 para erradicación de la Fiebre Aftosa en las Américas es aprobado



**Río de Janeiro, Brasil - diciembre de 2010.** El Comité Hemisférico de Erradicación de la Fiebre Aftosa (COHEFA) aprobó en esta última cuarta feria, 15 de diciembre de 2010, el nuevo [Plan de Acción](#) para el Programa Hemisférico de Erradicación de la Fiebre Aftosa (PHEFA), período 2011-2020.

El Plan fue puesto a análisis y aprobación por ocasión de la 2ª Reunión Extraordinaria de COHEFA, convocada por la Organización Panamericana de la Salud (OPS) y bajo la organización del Centro Panamericano de Fiebre Aftosa (PANAFTOSA),

realizada en Río de Janeiro, en 14 y 15 de diciembre de 2010. (A izquierda foto de los delegados)

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[http://new.paho.org/panaftosa/index.php?option=com\\_content&task=view&id=538&Itemid=1926](http://new.paho.org/panaftosa/index.php?option=com_content&task=view&id=538&Itemid=1926)

**Epidemiología / Epidemiology**



**Robert Koch and the Invention of the Carrier State: Tropical Medicine, Veterinary Infections and Epidemiology Around 1900**

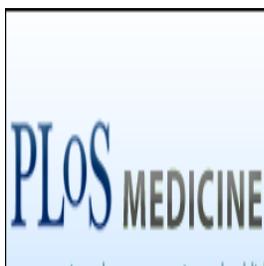
Gradmann C

Stud Hist Philos Biol Biomed Sci. 2010 Sep;41(3):232-40

This paper reassesses Robert Koch's work on tropical infections of humans and cattle as being inspired by an underlying interest in epidemiology. Such an interest was developed from the early 1890s when it became clear that an exclusive focus on pathogens was insufficient as an approach to explain the genesis and dynamics of epidemics. Koch, who had failed to do so before, now highlighted differences between infection and disease and described the role of various sub-clinical states of disease in the propagation and—consequently—in the control of epidemics. Studying pathologies of men and cattle in tropical countries eventually facilitated the application of such measures in Europe through the screening of healthy carriers of typhoid, which was carried out in 1902. The concept of the carrier state can be understood as a spin-off from tropical medicine into the study and control of infectious disease in Europe. With it travelled assumptions that were typical for colonial and veterinary medicine where the health of indigenous individuals or cattle would be a secondary objective compared to the control of diseases in populations.

**Text in English**

**Higiene, Sanidad y Agua / Hygiene, Sanitation, and Water**



**Hygiene, Sanitation, and Water: Forgotten Foundations of Health**

Bartram J, Cairncross S

PLoS Med. 2010; 7 (11): e1000367

Globally, around 2.4 million deaths (4.2% of all deaths) could be prevented annually if everyone practised appropriate hygiene and had good, reliable sanitation and drinking water. These deaths are mostly of children in developing countries from diarrhoea and subsequent malnutrition, and from other diseases attributable to malnutrition.

How is an opportunity to prevent so many deaths (and 6.6% of the global burden of disease in terms of disability-adjusted life years or DALYs failing to attract the attention of the international public health community?

In this introductory paper to the *PLoS Medicine* series on water and sanitation, we develop the idea that these basic needs are the forgotten foundations of health.

**Text in English**

<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000367>

<http://www.plosmedicine.org/article/fetchObjectAttachment.action?uri=info%3Adoi%2F10.1371%2Fjournal.pmed.1000367&representation=PDF>



## Hygiene, Sanitation, and Water: What Needs to Be Done?

Sandy Cairncross S, Bartram J, Cumming O, Brocklehurst C  
PLoS Med. 2010; 7 (11): e1000365

The previous papers in this series have set out the importance for health of sanitation and water and touched on the importance of hygiene. Three clear messages have emerged:

1. Unimproved hygiene, inadequate sanitation, and insufficient and unsafe drinking water account for 7% of the total disease burden and 19% of child mortality worldwide.
2. Interventions in hygiene, sanitation, and water are highly cost-effective and capable of preventing a large part of this devastating disease burden.
3. Progress in ensuring access to these basic services has been painfully slow in much of the developing world.

These three messages present an imperative for everyone concerned with improving health. The centrality of these issues to health has been made clear in numerous international declarations, but priority and progress remain inadequate. As it stands, the world will not deliver the Millennium Development Goal (MDG) targets on water in many poor countries and on sanitation in most, let alone achieve the vision of universal access.

This paper analyses the causes of poor national progress, discusses how these can be addressed, and highlights the potential roles of the various actors—especially the health sector—in tackling the challenges that lie ahead.

### Text in English

<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000365>

<http://www.plosmedicine.org/article/fetchObjectAttachment.action?uri=info%3Adoi%2F10.1371%2Fjournal.pmed.1000365&representation=PDF>



## Sanitation and Health

Mara D, Lane J, Scott B, Trouba D  
PLoS Med. 2010; 7 (11): e1000363

Adequate sanitation, together with good hygiene and safe water, are fundamental to good health and to social and economic development.

In one or more of these three components of good health can substantially reduce the rates of morbidity and the severity of various diseases and improve the quality of life of huge numbers of people, particularly children, in developing countries. Although linked, and often mutually supporting, these three components have different public health characteristics. This paper focuses on sanitation. It seeks to present the latest evidence on the provision of adequate sanitation, to analyse why more progress has not been made, and to suggest strategies to improve the impact of sanitation, highlighting the role of the health sector. It also seeks to show that sanitation work to improve health, once considered the exclusive domain of engineers, now requires the involvement of social scientists, behaviour change experts, health professionals, and, vitally, individual people.

### Text in English

<http://www.ploscollections.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000363>

<http://www.ploscollections.org/article/fetchObjectAttachment.action?uri=info%3Adoi%2F10.1371%2Fjournal.pmed.1000363;jsessionid=4DA6728228CDE534030F36EAC51C3F23.ambra02>

<http://www.ploscollections.org/article/fetchObjectAttachment.action?uri=info%3Adoi%2F10.1371%2Fjournal.pmed.1000363&representation=PDF>



## Water Supply and Health

Hunter PR, MacDonald AM, Carter RC  
PLoS Med. 2010; 7 (11): e1000361

A safe, reliable, affordable, and easily accessible water supply is essential for good health. Yet, for several decades, about a billion people in developing countries have not had a safe and sustainable water supply.

A key target of Millennium Development Goal (MDG) 7, which aims to ensure environmental sustainability, is "to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation by 2015". This water supply target underpins several other MDGs, including those relating to poverty (MDG1), education (MDG2), and gender equality (MDG3). In particular, it underpins MDG4, the reduction of child mortality, because many deaths in young children in developing countries are due to diarrhoeal disease, and unsafe water is a key risk factor for diarrhoeal disease in this age group.

We therefore argue in this paper for a serious commitment by national governments and their partners to ensure adequate water supply services for all (the MDG target, if met, would still leave 672 million people with an unimproved supply. In addition, we call for increased attention to be paid to ensuring continuing service provision. This will mean finding new ways to enhance public demand for improved services (that might translate into a willingness to pay), and a public and private sector ethos that puts high value on the quality of construction and ongoing service delivery.

### Text in English

<http://www.ploscollections.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000361;jsessionid=4DA6728228CDE534030F36EAC51C3F23.ambra02>  
<http://www.ploscollections.org/article/fetchObjectAttachment.action?uri=info%3Adoi%2F10.1371%2Fjournal.pmed.1000361&representation=PDF>

## Febre Aftosa / Foot and Mouth Disease



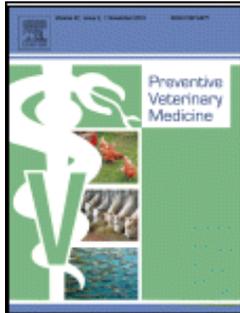
### Early Pathogenesis of Foot-and-Mouth Disease in Cattle After Aerosol Inoculation: Identification of the Nasopharynx as the Primary Site of Infection

Arzt J, Pacheco JM, Rodriguez LL  
Vet Pathol. 2010 Nov; 47 (6): 1048-63

To characterize the early events of foot-and-mouth disease virus (FMDV) infection in cattle subsequent to simulated natural exposure, 16 steers were aerosol inoculated with FMDV and euthanized at various times. Samples were collected from each steer antemortem (serum, nasal swabs, and oral swabs) and postmortem (up to 40 tissues per animal) and screened for FMDV by virus isolation and for FMDV RNA by real-time reverse transcription polymerase chain reaction. Tissues that tested positive for FMDV or viral RNA were examined by immunohistochemistry and multichannel immunofluorescence microscopy. In previremic steers, FMDV was most consistently localized to nasopharyngeal tissues, thereby indicating this region as the most important site of primary viral replication. The earliest site of microscopic localization of FMDV antigens was the lymphoid follicle-associated epithelium of the pharyngeal mucosa-associated lymphoid tissue of the nasopharynx at 6 hours post-aerosolization. At early time points after aerosol inoculation, viral antigens colocalized with cytokeratin-positive pharyngeal epithelial cells;

intraepithelial FMDV-negative, MHCII/CD11c-double-positive dendritic cells were present in close proximity to FMDV-positive cells. Onset of viremia coincided with marked increase of viral loads in pulmonary tissues and with substantial decrease of viral detection in nasopharyngeal tissues. These data indicate that subsequent to aerogenous exposure to FMDV, the temporally defined critical pathogenesis events involve (1) primary replication in epithelial cells of the pharyngeal mucosa-associated lymphoid tissue crypts and (2) subsequent widespread replication in pneumocytes in the lungs, which coincides with (3) the establishment of sustained viremia.

#### Text in English



#### Risk Evaluation of Nonvaccinated, Weaned Calves Transported Through Areas Under Systematic Foot and Mouth Disease (FMD) Vaccination

Leanes LF, Abbiati NN, Pereyra AM, Maizon DO  
Prev Vet Med. 2010 Nov

The recurrence and persistence of foot and mouth disease (FMD) could be the consequence of cyclic and massive transportation of calves. For this reason, in South America, vaccination strategies related to livestock dynamic are being promoted. In order to aid the evaluation of such strategies, a method for predicting the risk of transportation of nonvaccinated weaned calves was developed; this method combines expert opinion and empirical evidence using Bayesian estimators. It was applied through Monte Carlo simulation to data of Argentina under four hypothetical vaccination schemes: E1, extended vaccination season of 1/6 of the population of calves each month from July to December without second round vaccination (SRV); E2, extended irregular vaccination from July to December with SRV applied to 70% of the calves resembling the scheme applied in Argentina in 2001; E3, vaccination in November and December without SRV; and E4, vaccination concentrated in November. E1 resulted in probability of transporting non vaccinated calves (tnvc) reaching its maximum in the following year in May with mean=0.0250 and percentile 95% (P95)=0.0404; for the same month tncv estimates for the other schemes were E2: mean=0.0071; P95=0.0162; E3: mean=0.0017; P95=0.0042 and E4: mean=0.0001; P95=0.0004. Bonferroni multiple comparison for simultaneous assertions for May showed that E4 resulted the best scheme, E1 the worst, and E2 and E3 are intermediate with nonsignificant difference observed between overall ( $p < 0.05$ ). Results were consistent with historical records and quantification for future needs for re-vaccination was made possible. While the ratio "total vaccinated"/"total estimated existences" will give a biased vision of vaccination coverage under the situation of extended vaccination campaigns, a model as the one developed here could allow a more accurate assessment and the design of mitigation plans.

#### Text in English (article in press)

#### Inocuidad de los Alimentos / Food Safety



#### Antimicrobial resistance and PCR-ribotyping of *Shigella* responsible for foodborne outbreaks occurred in southern Brazil

Paula CMD, Geimba MP, Amaral PH, Tondo EC  
Braz J Microbiol. 2010 Dec; 41 (4): 966-977

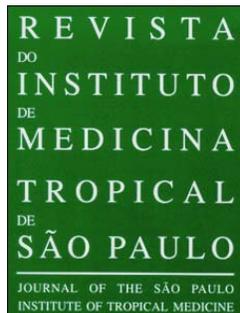
Little information about *Shigella* responsible for foodborne shigellosis is available in Brazil. The present study aimed to investigate the antimicrobial resistance and PCR-ribotyping patterns of *Shigella* isolates

responsible for foodborne outbreaks occurred in Rio Grande do Sul State (RS), Southern Brazil in the period between 2003 and 2007. *Shigella* strains (n=152) were isolated from foods and fecal samples of victims of shigellosis outbreaks investigated by the Surveillance Service. Identification of the strains at specie level indicated that 71.1% of them were *S. flexneri*, 21.5% *S. sonnei*, and 0.7% *S. dysenteriae*. Ten strains (6.7%) were identified only as *Shigella* spp. An increasing occurrence of *S. sonnei* was observed after 2004. Most of the strains were resistant to streptomycin (88.6%), followed by ampicillin (84.6%), and sulfamethoxazole/trimethoprim (80.5 %). Resistant strains belonged to 73 patterns, and pattern A (resistance to ampicillin, sulfamethoxazole/trimethoprim, tetracycline, streptomycin, chloramphenicol, and intermediate resistance to kanamycin) grouped the largest number of isolates (n=36). PCR-ribotyping identified three banding patterns (SH1, SH2, and SH3). SH1 grouped all *S. flexneri* and SH2 grouped all *S. sonnei*. The *S. dysenteriae* strain belonged to group SH3. According to the results, several *Shigella* isolates shared the same PCR-rybotyping banding pattern and the same resistance profile, suggesting that closely related strains were responsible for the outbreaks. However, other molecular typing methods need to be applied to confirm the clonal relationship of these isolates.

#### **Text in English**

<http://www.scielo.br/pdf/bjm/v41n4/15.pdf>

#### **Rabia / Rabies**



#### **Pathogenicity of different rabies virus isolates and protection test in vaccinated mice**

Cunha EM, Nassar AF, Lara Mdo C, Villalobos EC, Sato G, Kobayashi Y, Shoji Y, Ito T, Sakai T, Ito FH  
Rev Inst Med Trop Sao Paulo. 2010 Oct; 52 (5): 231-6

This study was aimed to evaluate and compare the pathogenicity of rabies virus isolated from bats and dogs, and to verify the efficacy of a commercial rabies vaccine against these isolates. For evaluation of pathogenicity, mice were inoculated by the intramuscular route (IM) with 500MICLD<sub>50</sub>/0.03 mL of the viruses. The cross-protection test was performed by vaccinating groups of mice by the subcutaneous route and challenged through the intracerebral (IC) route. Isolates were fully pathogenic when inoculated by the IC route. When inoculated intramuscularly, the pathogenicity observed showed different death rates: 60.0% for the *Desmodus rotundus* isolate; 50.0% for dog and *Nyctinomops laticaudatus* isolates; 40.0% for *Artibeus lituratus* isolate; 9.5% *Molossus molossus* isolate; and 5.2% for the *Eptesicus furinalis* isolate. Mice receiving two doses of the vaccine and challenged by the IC route with the isolates were fully protected. Mice receiving only one dose of vaccine were partially protected against the dog isolate. The isolates from bats were pathogenic by the IC route in mice. However, when inoculated through the intramuscular route, the same isolates were found with different degrees of pathogenicity. The results of this work suggest that a commercial vaccine protects mice from infection with bat rabies virus isolates, in addition to a canine rabies virus isolate.

#### **Text in English**

<http://www.scielo.br/pdf/rimtsp/v52n5/a02v52n5.pdf>

## Boas Festas – Felices Fiestas – Season's Greetings



Salud Pública Veterinaria  
Centro Panamericano de Fiebre Aftosa



Veterinary Public Health  
Pan American Foot and Mouth Disease Center

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