

**ZOONOSES E BIOSSEGURANÇA NA  
CLÍNICA VETERINÁRIA**

**“É RESPONSABILIDADE DE CADA UM ZELAR PELA  
PRÓPRIA SEGURANÇA E DAS PESSOAS COM QUEM  
TRABALHA”**

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**Table 3. Animal species (%) involved in work related injuries to veterinarians.**

Animal	Thigpen & Dorn <sup>a</sup> 1967 - 1969	Landercasper et al <sup>b</sup> 1988	Langley et al <sup>c</sup> 1996
Cattle	36.5	46.5	17.2
Horses	17.3	15.2	13.8
Dogs	12.1	24.2	35.2
Cats	1.9	10.2	28.4
Pigs	2.0	2.0	2.2
Other	1.0	1.8	3.2

<sup>a</sup>Reference 2.  
<sup>b</sup>Reference 22.  
<sup>c</sup>Reference 24.

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Rev. saúd publica. 6 (1): 26-43, 2004  
www.medicina.unal.edu.co/revistasp

**Riesgo Biológico Ocupacional en la Medicina  
Veterinaria, Área de Intervención Prioritaria**

Natalia M. Cediel B.<sup>1</sup> y Luis C. Villamil J.<sup>2</sup>  
<sup>1</sup>Médica veterinaria. Red Salud Pública Veterinaria. Bogotá. Tel.: 6919929. E-mail: natiaisr@hotmail.com  
<sup>2</sup>Médico Veterinario. Ph. D. Universidad Nacional de Colombia. E-mail: lcvillamil@unal.edu.co

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**Tabla 1.** Procedimientos en medicina veterinaria según grado de riesgo

Nivel de riesgo	En la Industria	En Explotaciones
Alto	Sangría	Fecundación
	Desuello	Pario
	Evisceración	Vacunaciones
	Inspección	Castración
	Corte de piezas	Incubación
Medio	Excretas	
	Inspección ante-mortem	Gestación
	Insensibilización	Corte de corrillos
	Izaco	Despicado
	Corte de manos	Descartado
	División de la canal	Selección de huevos
	Lavado de carnes	Selección de crías
	Oreo	Montas frías
	Inspección de calidad	Cría de pollitas
	Limpieza	Cría pollo de engorde
	Almacenamiento	
Bajo	Refrigeración	Monta natural
	Recepción en pie	Descorne
	Lavado del animal	Extracción leche
	Pesaje	Incubación artificial
	Comercialización	Distribución huevos
	Molido	
	Embudo	

**Tabla 2.** Precauciones estandar o universales

Normas	Objetivo
Uso de elementos de protección individual (EPI) (Guantes, tapabocas, bata, protector ocular)	Reducir el riesgo de exposición a agentes patógenos
Lavado de manos antiséptico	Reduce la flora residente y remueve la flora transitoria
Manejo Apropiado de elementos cortos punzantes	Prevenir accidentes de trabajo con exposición a riesgo biológico
Adecuado manejo de residuos patógenos	Reducir el riesgo de exposición con agentes patógenos
Limpieza, desinfección y esterilización de instrumental, instalaciones, ropa	<ul style="list-style-type: none"> <li>▪ Remover la suciedad visible</li> <li>• Disminuir y eliminar la carga microbiana</li> <li>▪ Destruir todas las formas de vida microbiana</li> </ul>

Int Arch Occup Environ Health (2005) 78: 230–238  
 DOI 10.1007/s00420-004-0583-5

**ORIGINAL ARTICLE**

Albert Nienhaus · Christoph Skudlik · Andreas Seidler

**Work-related accidents and occupational diseases in veterinarians and their staff**

**Table 1** Holders of insurance and claims of accidents and occupational diseases by veterinarians and their staff in 2002, separated by the primary type of animal treated in the practice

Holders of insurance	Practice treating mainly				Total	
	Small animals		Large animals		(n)	(%)
	(n)	(%)	(n)	(%)		
Practices	4,377	44.9	5,371	55.1	9,748	100.0
Veterinarians and staff	12,984	47.3	14,472	52.7	27,456	100.0
Full-time workers	7,943.9	46.9	9,177.7	53.1	17,121.6	100.0
Claims						
Accidents in workplace	767	84.2	1,038	90.5	1,805	87.7
Commuting accidents	98	10.8	71	6.2	169	8.2
Occupational diseases	46	5.0	38	3.3	84	4.1
All claims	911	100.0	1,147	100.0	2,058	100.0

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**Table 1** Established causes of 160 verified occupational and work-related diseases between 1998 and 2002

Cause of occupational disease	Number	Percentage
<i>Zoonosis</i>		
Mycosis	10	45.5
Brucellosis	3	13.6
Lyme disease	2	9.1
Psittacosis	2	9.1
Not classified	5	22.7
All	22	100.0

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**NO BRASIL**

GAMA FILHO, J. B. AVALIAÇÃO DOS RISCOS OCUPACIONAIS EM HOSPITAIS VETERINÁRIOS LOCALIZADOS NO DISTRITO FEDERAL (DISSERATAÇÃO DE MESTRADO-UNIVERSIDADE DE BRASÍLIA), BRASÍLIA, DF, 2000.



TIPO DE ACIDENTES	
PERFUROCORTANTES	35%
MORDEDURAS	60,5%
ARRANHADURAS	65,1%

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**DISTRIBUIÇÃO DE TRABALHADORES QUE POSSUEM CONHECIMENTO DOS RISCO A QUE ESTÃO EXPOSTOS**

VETERINÁRIOS 100%  
AUXILIARES 90% MASCULINO  
60,2% FEMININO

TREINAMENTO NÃO  
VETERINÁRIOS 88,5%  
AUXILIARES 84,8%



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**RISCOS BIOLÓGICOS**



© KA BOOM ESTUDIO S.A. DE C.Mexico

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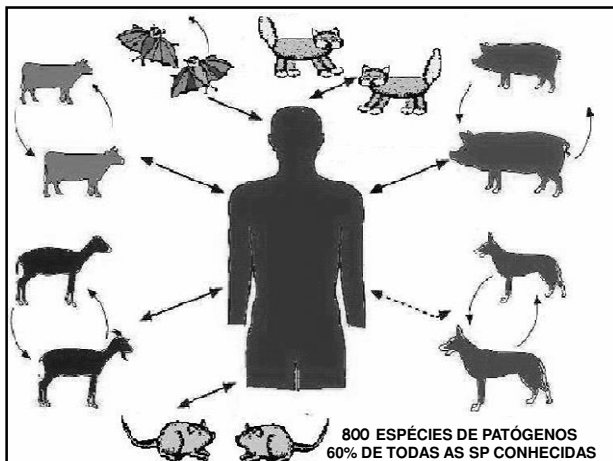
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**Table 16.2** Examples of species jumps into humans from non-human hosts

Pathogen	Original host	Year reported
Ebola virus	Bats/primates/antelopes	1977
<i>Escherichia coli</i> O157:H7	Cattle	1982
<i>Borrelia burgdorferi</i>	Rodents/deer	1982
SIV/HIV-1	Chimpanzees	1983
SIV/HIV-2	Sooty mangabeys	1986
Hendra virus	Bats/horses	1994
BSE/vCJD	Cattle	1996
Australian bat lyssavirus	Bats	1996
HSN1 influenza A	Chickens	1997
Nipah virus	Bats/pigs	1999
SARS coronavirus	Bats/palm civets	2003

Evolution in health and disease / edited by Stephen C. Stearns and Jacob C. Koella.—2nd ed.

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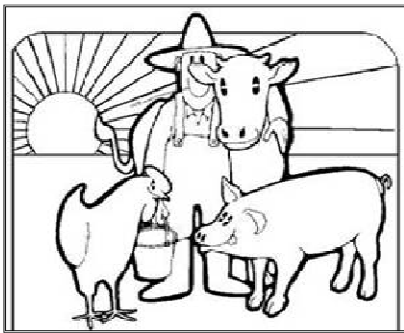
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**500 ESPÉCIES PATÓGENOS  
200 ZOOSES**




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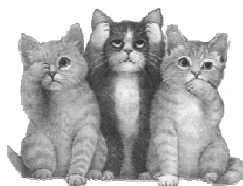
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**ZOOSES**




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# Esporotricose Animal

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**TABLE**  
Distribution of human, feline and canine cases of sporotrichosis per municipality in the State of Rio de Janeiro, CPqHEC-Fiocruz (July 1998-July 2000)

Municipality	Cases of sporotrichosis		
	Human (%)	Feline/Canine (%)	Total (%)
Rio de Janeiro	22 (33.4)	51 (41.1)	73 (38.5)
São João do Meriti	14 (21.2)	32 (25.9)	46 (24.3)
Duque de Caxias	14 (21.2)	15 (12.1)	29 (15.2)
Nilópolis	2 (3)	20 (16.1)	22 (11.6)
Belford Roxo	5 (7.6)	4 (3.2)	9 (4.7)
Others	9 (13.6)	1 (0.8)	10 (5.2)
Unknown	-	1 (0.8)	1 (0.5)
<b>Total</b>	<b>66 (100)</b>	<b>124 (100)</b>	<b>190 (100)</b>

Mem Inst Oswaldo Cruz, Rio de Janeiro, Vol. 96(6), August 2001

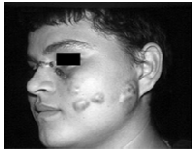


Foto: <http://www.faperj.br/?id=1066.29>




Foto: <http://www.4vets.com.br/info4vets/esporeticose-em-caes-e-gatos/>

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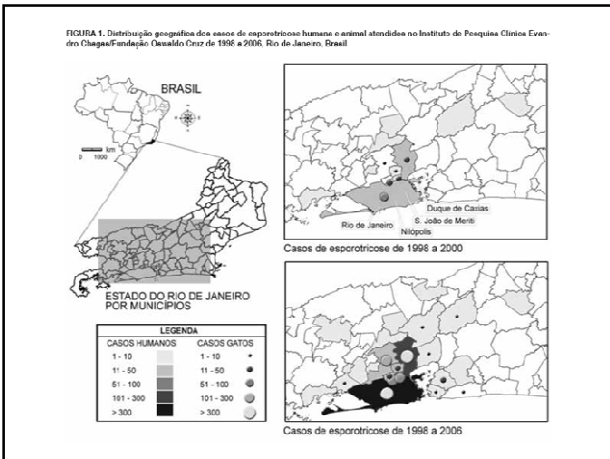
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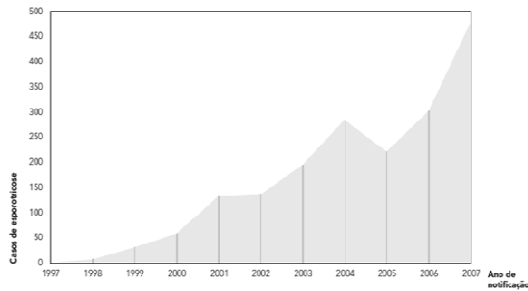
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Distribuição por ano de notificação dos pacientes com esporotricose atendidos no Instituto de Pesquisa Clínica Evandro Chagas, Fundação Oswaldo Cruz, Rio de Janeiro, Brasil, 1997-2007.



Cad. Saúde Pública 28(10):1867-1880, 2012

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TABELA 1. Problemas e sugestões de medidas de controle de esporotricose zoonótica

Situação/problema	Estratégia/sugestão
Falta de um programa de saúde pública para o controle da esporotricose	<ul style="list-style-type: none"> <li>Incluir a esporotricose na lista de doenças de notificação do Estado do Rio de Janeiro</li> <li>Normalização das ações de prevenção, diagnóstico e tratamento de espalho/esporotricose, zoonotico</li> </ul>
Falta de medicação gratuita para tratamento da esporotricose humana e animal	<ul style="list-style-type: none"> <li>Disponibilização de Itraconazol como medicamento essencial nas unidades de saúde dos municípios com ocorrência de casos</li> <li>Implementação de um programa de controle nos centros de zoonoses dos municípios com ocorrência de casos</li> <li>Estabelecer fluxo para criação gratuita dos corpos dos animais mortos com esporotricose</li> <li>Oferta de castração gratuita nas unidades de atendimento veterinário</li> </ul>
Falta de unidades de atendimento aos animais com esporotricose	<ul style="list-style-type: none"> <li>Adequação de espaços, preferencialmente anexos a centros de saúde nos municípios com maior incidência de esporotricose, que funcionem como sentinelas para atendimento de animais</li> <li>Estruturação de unidades volantes para atendimento dos animais doentes em municípios sem programas de controle de zoonoses</li> </ul>
Desconhecimento das medidas de controle da esporotricose por parte da população	<ul style="list-style-type: none"> <li>Divulgação nas unidades de saúde das medidas preventivas e de controle da esporotricose humana e animal através de cartazes, folhetos e de outras ações informativas do acordo com o planejamento do município</li> </ul>
Dificuldade multifatorial no tratamento dos gatos com esporotricose	<ul style="list-style-type: none"> <li>Iniciativas de desenvolvimento de vacina antirrábica animal</li> </ul>

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Dispatches

**Rabies in Marmosets (*Callithrix jacchus*), Ceará, Brazil**

Silvana R. Favoretto,\* Cecília C. de Mattos,† Nelso B. Morais,‡

Francisco A. Alves Araújo,§ and Carlos A. de Mattos¶

\*Instituto Pasteur São Paulo, São Paulo, Brazil; †Centers for Disease Control and Prevention, Atlanta, Georgia, USA; ‡Secretaria Estadual de Saúde do Ceará, Brazil; and §Ministério da Saúde, Brasília, Brazil



13 MORTES HUMANAS  
 04 MORCEGOS  
 01 GUAXININ  
 08 SAGUIS – NOVA VARIANTE

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# Tuberculose

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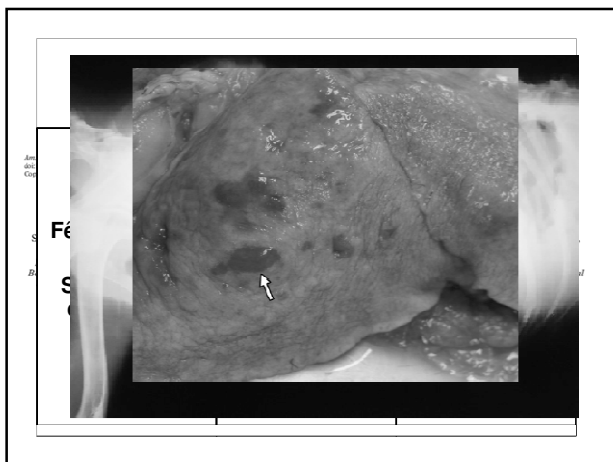
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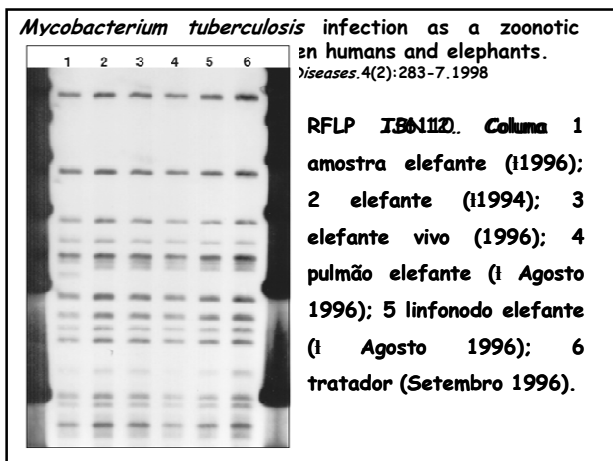
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**Isolation of *Mycobacterium tuberculosis* from Captive black spider monkey (*Ateles paniscus*)**  
Rocha et al Vector -Borne and Zoonotic Diseases 11(5):593. 2011

**Caso:**  
Fêmea adulta em cativeiro por mais de 2 anos

**Exame clínico:**  
Apatia  
Edemaciação, aumento dos linfonodos  
Presença de massa na cavidade abdominal



**Tratamento:**  
Não responsivo (enrofloxacin, azitromicina, ceftiofur)

**Morto em 6 meses**

**Necropsia:**  
Lesões granulomatosas em linfonodo, fígado, pleura, pulmão, baço e rim

**Laboratorial:**  
Positivo para *M. tuberculosis*

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**Tuberculosis determined by *Mycobacterium bovis* in captive waterbucks (*Kobus ellipsiprymnus*) in São Paulo, Brazil**  
Rocha et al Braz J Microbiol 42(2):726. 2011

**Caso:**  
Casal em cativeiro, adultos

**Exame clínico:**  
Problemas respiratórios com tosse crônica

**Necropsia:**  
Lesões granulomatosas em linfonodo mediastínico e pulmão

**Laboratorial:**  
Positivo para *Mycobacterium bovis* spoligotipo SB0121  
Genotipo associado a bovinos



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**Identificação de *Mycobacterium bovis* em Lhama (*Lama glama*)**  
Ikuta 2015

**Caso:**  
Mortalidade de lhamas de 9 animais 6 morreram

**Sinais:**  
Prostração, dispnéia, anorexia e emagrecimento

**Necropsia:**  
Lesões granulomatosas na cavidade torácica e pulmões

**Laboratorial:**  
Isolamento de *M. bovis* spoligotipo SB1961



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**Identificação de *Mycobacterium tuberculosis* em papagaio-verdadeiro (*Amazona aestiva*)**  
**Ikuta 2015**

**Caso:**  
**1 papagaio-verdadeiro;**  
**animal de estimação**

**Laboratorial:**  
**Isolamento de *M. tuberculosis***  
**Histórico de paciente com**  
**tuberculose na residência**




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Journal of Medical Microbiology (2006), 55, 1571–1575 DOI: 10.1099/jmm.0.48692-0

**An outbreak of psittacosis due to *Chlamydia psittaci* genotype A in a veterinary teaching hospital**

Edou R. Heddema,<sup>1†</sup> Erik J. van Hanne,<sup>2</sup> Birgitte Duim,<sup>1</sup> Bartelt M. de Jongh,<sup>2</sup> Jan A. Kaan,<sup>3</sup> Rob van Kessel,<sup>4</sup> Johannes T. Lumeij,<sup>5</sup> Caroline E. Visser<sup>1</sup> and Christina M. J. E. Vandembroucke-Grauls<sup>1,6</sup>

Gender	Age	Clinical features	PCR specimen	PCR	rELISA	CFT	incubation period (days)	Days between first and second serum samples
M	37	Sepsis	Sputum	+	+	+	Na	14
F	37	Pneumonia	Sputum	+	+	–	14	29
M	61	Pneumonia	Sputum	+	–	–	Na	46
F	26	Fever, headache	Throat swab	–	+	+	12	21
F	27	Fever, headache	Throat swab	–	+	+	12	21
F	29	Fever, headache	Throat swab	+	+	+	11	21
M	28	None	Throat swab	–	+	+	Na	41
M	35	None	Throat swab	+	+	–	Na	21
F	23	None	Throat swab	+	+	–	Na	28
F	30	Fever, headache	Throat swab	–	+	+	14	15

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**942 FILHOTES PAPAGAIOS VERDADEIROS**



**FEZES, SECREÇÕES**

FONTE :INFORMATIVO SOS FAUNA OUTUBRO 2008

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**COMO PODEMOS MINIMIZAR OS RISCOS DE INFECÇÃO?**

1. DESENVOLVER A PERCEÇÃO DE RISCO
2. VACINAÇÃO
3. RECONHECER ANIMAIS INFECTADOS
4. SITUAÇÕES EPIDEMIOLÓGICAS SUSPEITAS
5. MANUSEAR CORRETAMENTE ESSES ANIMAIS
6. PRECAUÇÕES BÁSICAS DE BIOSEGURANÇA
7. HIGIENE PESSOAL




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**Brucelose Canina**

Kennel	Number of dogs	Clinically positive <sup>1</sup>	AGID positive <sup>2</sup>	Blood culture positive <sup>3</sup>
1	17	0 (0 %)	7 (41.17 %)	0 (0 %)
2	22	13 (59.09 %)	16 (72.72 %)	12 (54.54 %)
3	18	7 (38.88 %)	14 (77.77 %)	5 (27.77 %)
4	14	4 (28.57 %)	1 (7.14 %)	1 (7.14 %)
5	4	1 (25.00 %)	2 (50 %)	0 (0 %)
6	9	1 (11.11 %)	6 (66.66 %)	0 (0 %)
7	10	4 (40.00 %)	4 (40.00 %)	0 (0 %)
8	15	6 (40.00 %)	6 (40.00 %)	4 (26.66 %)
9	37	1 (2.70 %)	0 (0 %)	1 (2.70 %)
10	12	1 (8.33 %)	0 (0 %)	1 (8.33 %)
11	5	0 (0 %)	2 (40.00 %)	0 (0 %)
12	8	1 (12.50 %)	0 (0 %)	0 (0 %)
Total	171	39 (22.80 %)	58 (33.91 %)	24 (14.03 %)

Keid 2004

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FOTO: LARA BORGES

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**VIAS DE PENETRAÇÃO DOS MICROORGANISMOS**

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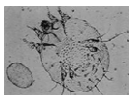
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**CONTATO DIRETO  
MANUSEIO DOS ANIMAIS**



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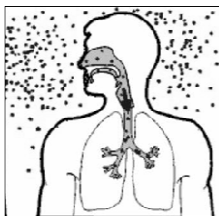
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**EXPOSIÇÃO DAS MUCOSAS**

**INGESTÃO**



**GOTÍCULAS OU AEROSSÓIS**



- EXAME CLÍNICO
- MEDICAÇÃO
- BRONCOSCOPIA
- VOCALIZAÇÃO
- TOSSE

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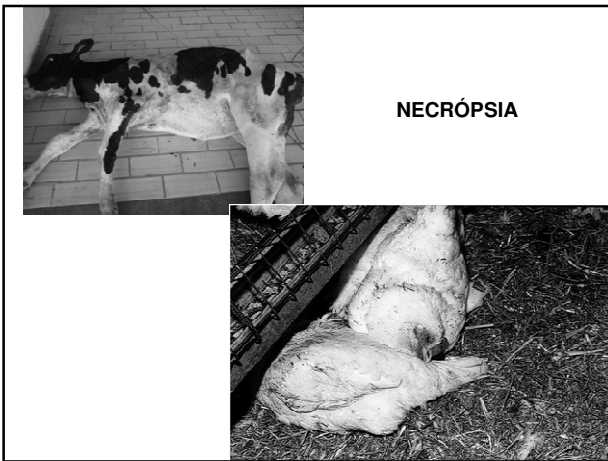
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## ABORTAMENTO



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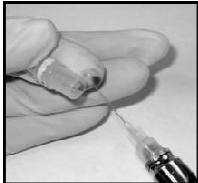
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## VIAS DE PENETRAÇÃO DOS MICRORGANISMOS

### VIA CUTÂNEA/PERCUTÂNEA

ATRAVÉS DE AGULHAS CONTAMINADAS  
(VACINAÇÃO B19)

VIDRARIA QUEBRADA  
INSTRUMENTOS PERFURO-CORTANTES



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**MEDIDA MAIS EFICIENTE PARA REDUZIR O RISCO DE INFECÇÃO**



ÁGUA CORRENTE E SABÃO

REMOÇÃO MECÂNICA DA SUJEIRA  
REDUÇÃO DOS MO TRANSITÓRIOS  
DA PELE

SABONETE ANTIMICROBIANOS

INIBIÇÃO DO CRESCIMENTO DA  
FLORA RESIDENTE E TRANSITÓRIA

TODOS  
DESTROEM O ENVELOPE VIRAL  
EFEITO DELETÉRIO NA MEMBRANA  
DAS BACTÉRIAS

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**EQUIPAMENTOS DE PROTEÇÃO  
INDIVIDUAL (EPIS)**



**DISPOSITIVOS DE USO INDIVIDUAL DESTINADOS A PROTEGER  
A INTEGRIDADE FÍSICA DO TRABALHADOR.**

©www.tnorman.com.pt

A Portaria 3214-NR6 do Ministério do Trabalho, de 08/06/1978 prevê a distribuição gratuita dos EPIS, sendo atribuição dos trabalhadores utilizá-los e conservá-los.

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**1. USO DE LUVAS, AVENTAIS, MACACÃO E BOTAS**

**LUVAS \_ BARREIRA DE PROTEÇÃO  
(SANGUE, FLUÍDOS CORPORAIS,  
SECREÇÕES/SECREÇÕES, PELE NÃO INTACTA)**



SUBSTITUI A LAVAGEM DAS MÃOS ????

OBS: NÃO SÃO NECESSÁRIAS QUANDO MANIPULO ANIMAL SAUDÁVEL

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PODE??????

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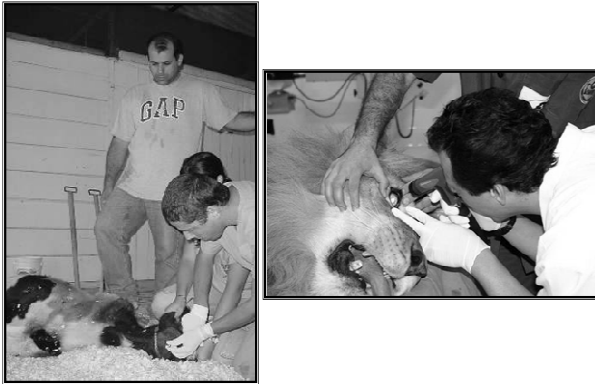
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**2. PROTEÇÃO FACIAL**

PROTEGE MUCOSA

MÁSCARA CIRÚRGICA SUFICIENTE

PROCEDIMENTOS ODONTOLÓGICOS

NEBULIZAÇÕES

SUCÇÕES



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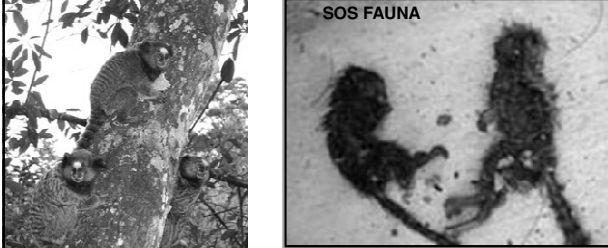
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SOS FAUNA

HERPESVÍRUS  
INFLUENZA  
RAIVA

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### VACINAÇÃO

TÉTANO  
RAIVA



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- ☺ Desenvolvimento da percepção de risco
- ☺ Treinamento e capacitação constantes
- ☺ Identificação de casos/epidemiologia suspeitos
- ☺ Ambiente de trabalho organizado
- ☺ Adoção de boas práticas (perfurocortantes, descarte de resíduos)
- ☺ Identificar os acidentáveis
- ☺ Utilização de EPIS
- ☺ HIGIENE PESSOAL

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**“A SEGURANÇA DEPENDE DE CADA UM DE NÓS”**



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