Epidemiologia interspecifica delle antibiotico-resistenze in suinicoltura MRSA e Sanità Pubblica.

Vittorio Sala

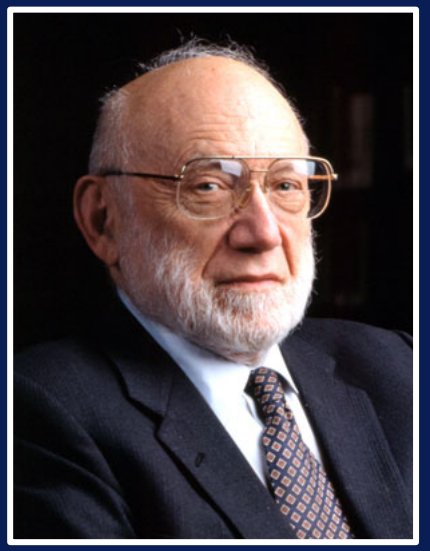
Dipartimento di Medicina Veterinaria

Key facts

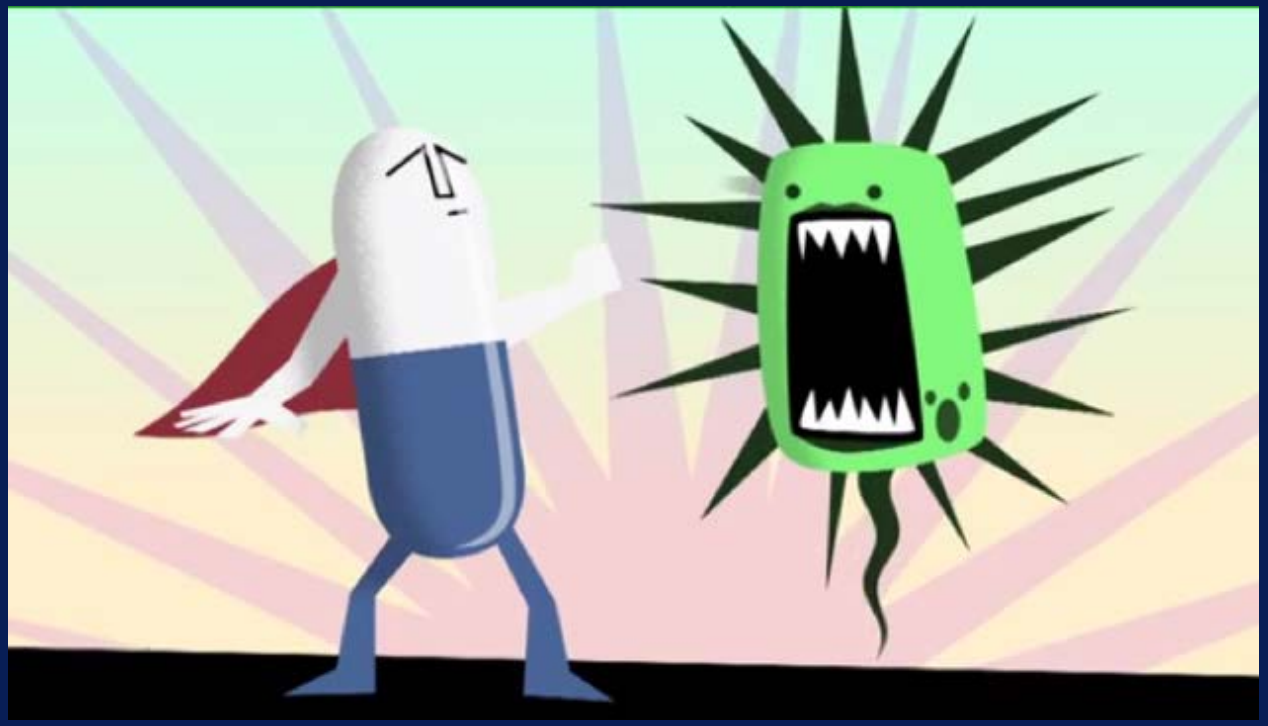
- Antibiotic resistance is one of the biggest threats to global health, food security, and development today.
- Antibiotic resistance can affect anyone, of any age, in any country.
- Antibiotic resistance occurs naturally, but misuse of antibiotics in humans and animals is accelerating the process.
- A growing number of infections are becoming harder to treat as the antibiotics used to treat them become less effective.
- Antibiotic resistance leads to longer hospital stays, higher medical costs and increased mortality.

“L’antibiotico-resistenza non è, di per sé, un fenomeno sorprendente. E neppure è nuovo. Tuttavia è di nuovo preoccupante, perché aumenta sempre più velocemente, mentre i mezzi per combatterla diminuiscono e perdono efficacia”.

Joshua Lederberg
(Premio Nobel per la Medicina 1958)



L'antibiotico-resistenza è il risultato di una selezione clonale delle popolazioni batteriche.



Non si tratta soltanto un problema clinico-terapeutico, ma di un vero e proprio fenomeno epidemiologico interspecifico.

Il "problema" nell’ambito suinicolo

SELEZIONE "POLIFATTORIALE "

Eccesso e ripetitività dei trattamenti (soprattutto *per os*)

Criteri errati di scelta del principio attivo

Incompletezza dello schema posologico

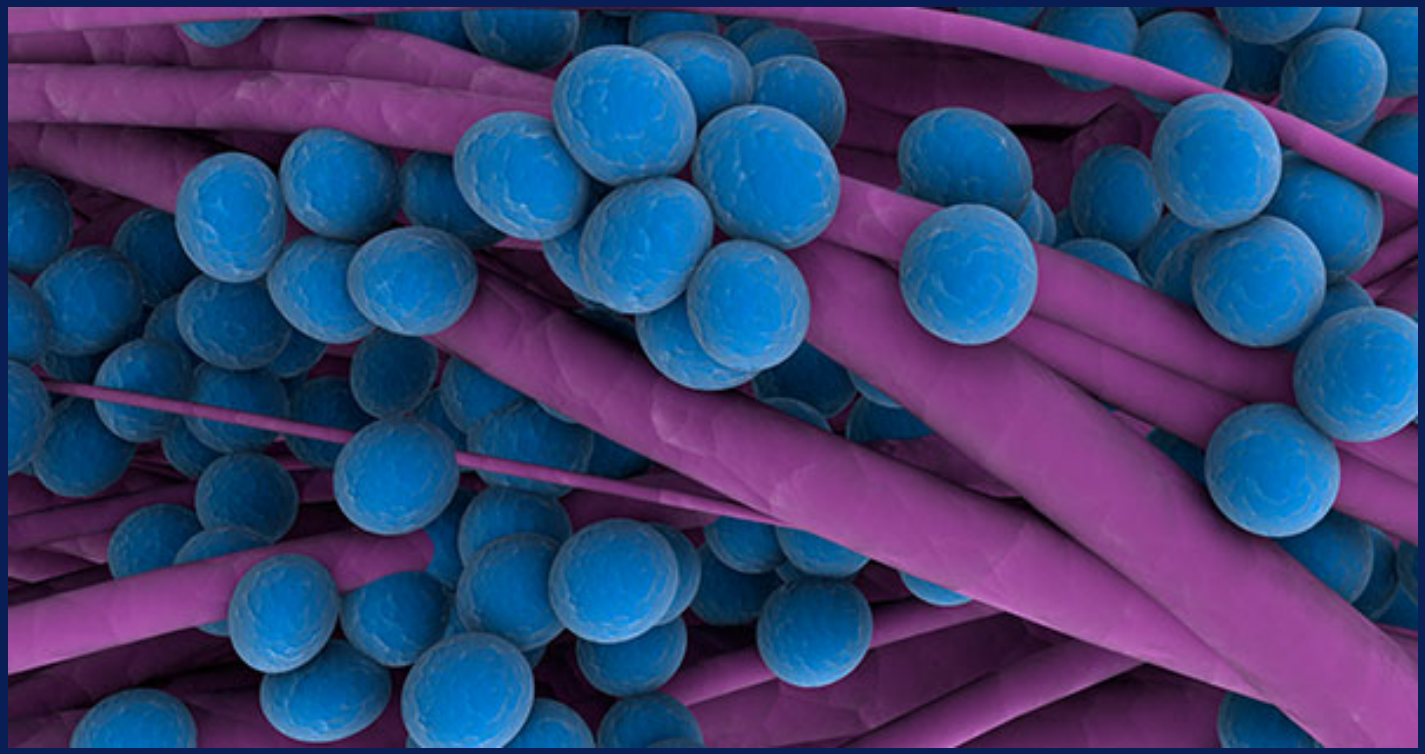
Trattamento delle infezioni opportunistiche silenti

Macello
(carni e derivati)

Territorio
(liquami ed effluenti)

Contatto diretto
(occupazionale)

M.R.S.A.
Methycillin Resistant Staphylococcus aureus



MRSA is any strain of *Staphylococcus aureus* that has developed, through the process of natural selection, resistance to beta-lactam antibiotics, which include the penicillins and the cephalosporins (W.H.O.)

M.R.S.A.

HA: Healthcare Acquired

CA: Community Acquired

LA: Livestock Acquired

One Health Approach ?

Dipartimento di Medicina Veterinaria

DIFFUSIONE INTERSPECIE

Ciclo epidemiologico interspecifico

OPEN ACCESS Freely available online

PLOS one

Prevalence of Livestock-Associated MRSA in Communities with High Pig-Densities in The Netherlands

Brigitte A. van Cleef[1,2,3]*[9], Erwin J. M. Verkade[4,6][9], Mireille W. Wulf[5], Anton G. Buiting[6], Andreas Voss[3,7,8], Xander W. Huijsdens[1], Wilfrid van Pelt[1], Mick N. Mulders[1], Jan A. Kluytmans[2,4]

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Infectious Diseases & Therapy

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http://dx.doi.org/10.4172/2332-0877.1000135

Research Article Open Access

Interspecific Epidemiology of MRSA in Pig Farming

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ATTI
DELLA SOCIETÀ ITALIANA DI PATOLOGIA
ED ALLEVAMENTO DEI SUINI
XLI
MEETING ANNUALE

PRESENZA DI MRSA NEI PARTECIPANTI AL MEETING SIPAS 2014

MRSA IN THE PARTICIPANTS IN THE MEETING SIPAS 2014

DE FAVERI E.[(3)], RIMOLDI S. [(2)], PAGANI C. [(2)], SALA V. [(1)]

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Parole chiave: MRSA, SIPAS 2014, suino, medico veterinario.
Key words. MRSA, SIPAS 2014, pig, veterinarian.

MRSA nei suini

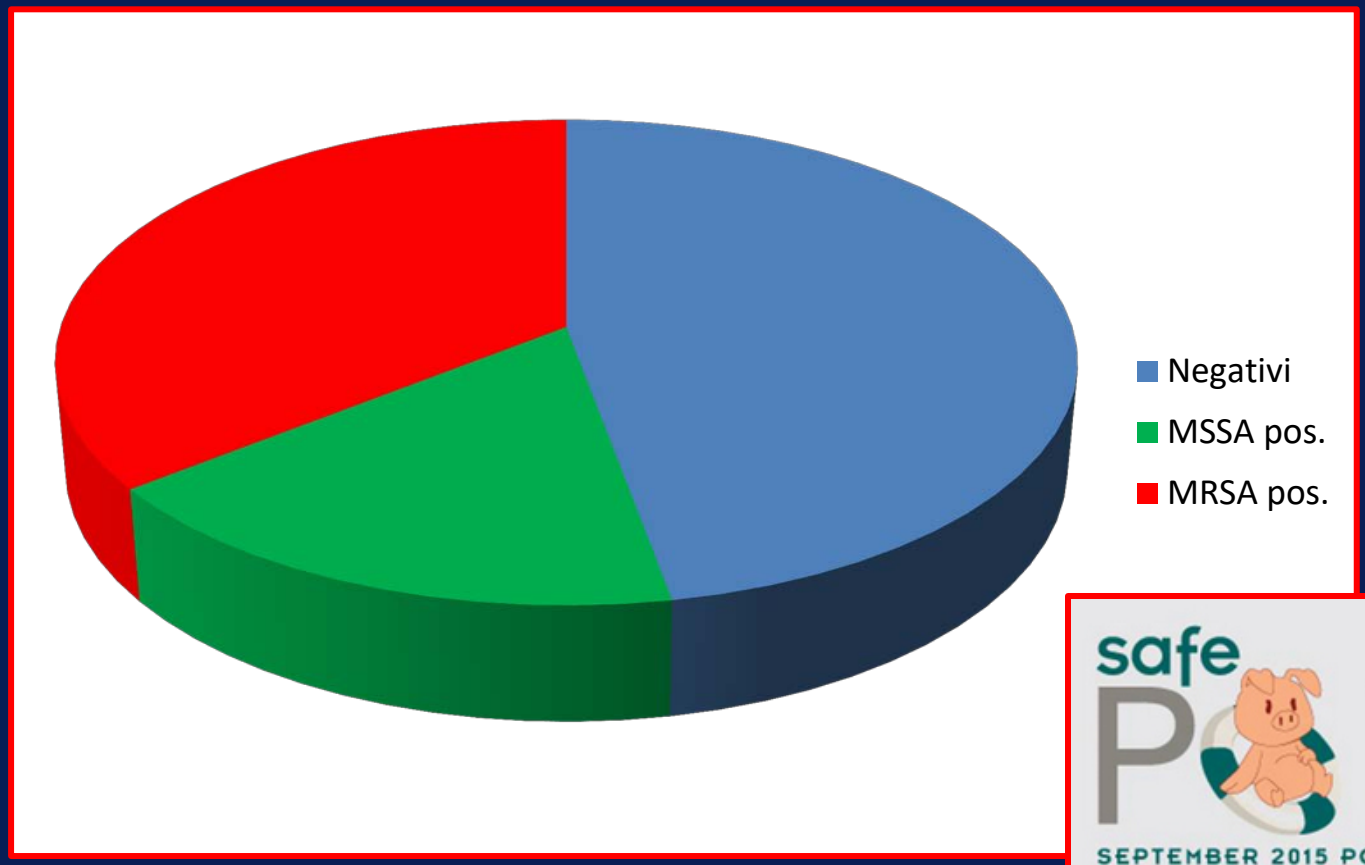
- Suini macellati: 2,3% (500 capi / amigdale)
- Scrofe: 10% (150 capi /tampone nasale)

Altre categorie occupazionali esposte

- Macellatori: 4% (100 operatori / 3 macelli esaminati)
- Allevatori (campionamento da completare): 10%

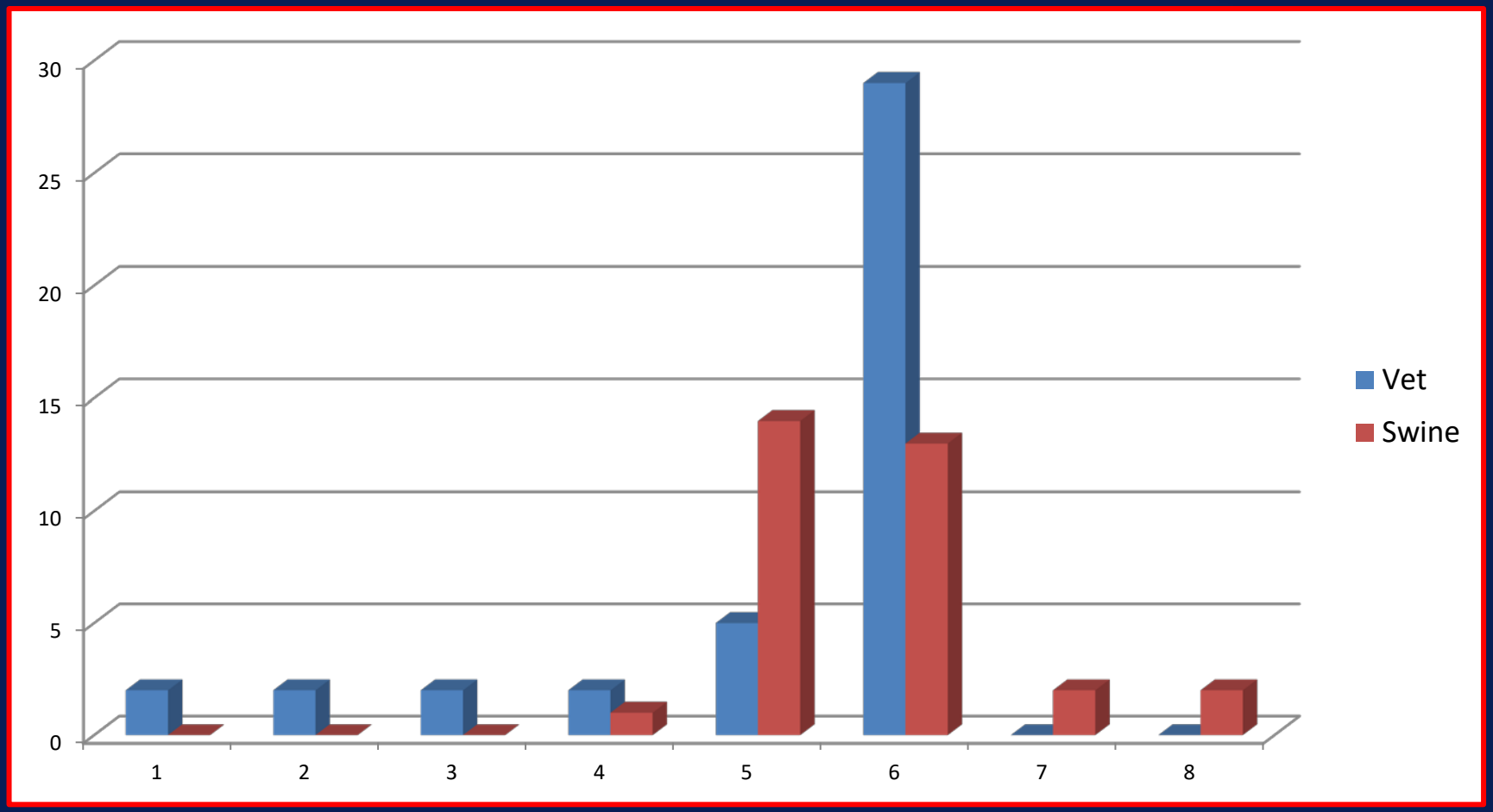
SuiVets' MRSA in Italy

	Nasal Swabs	Negative	MSSA pos.	MRSA pos.
Number	157	74	27	56
%	100	47,13	17,20	35,67



safe PORK
SEPTEMBER 2015 PORTO | PORTUGAL

Genomic Patterns of MRSA Isolates (DiversiLab®)



Veterinary Microbiology 200 (2017) 6–12

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journal homepage: www.elsevier.com/locate/vetmic

MRSA colonization and infection among persons with occupational livestock exposure in Europe: Prevalence, preventive options and evidence

Tobias Goerge[a], Marthe Barbara Lorenz[a], Sarah van Alen[b], Nils-Olaf Hübner[c], Karsten Becker[b], Robin Köck[b,*]

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Livestock-associated *Staphylococcus aureus* CC398: Animal reservoirs and human infections

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Veterinary Microbiology 200 (2017) 13–18

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Persistence of nasal colonisation with methicillin resistant *Staphylococcus aureus* CC398 among participants of veterinary conferences and occurrence among their household members: A prospective cohort study, Germany 2008–2014

Jan Walter[a,*], Werner Espelage[a], Cornelia Adlhoch[a], Christiane Cuny[b], Susanne Schink[a], Andreas Jansen[a], Wolfgang Witte[b], Tim Eckmanns[a], Julia Hermes[a]

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Veterinary Microbiology 200 (2017) 33–38

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The clinical impact of livestock-associated methicillin-resistant *Staphylococcus aureus* of the clonal complex 398 for humans

Karsten Becker[a,*], Britta Ballhausen[b], Barbara C. Kahl[a], Robin Köck[a]

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[b] Federal Institute for Risk Assessment, Division of Biological Safety, Berlin, Germany

JMM Case Reports (2015) DOI 10.1099/jmmcr.0.000024

Case Report

Fatal infections caused by methicillin-resistant *Staphylococcus aureus* of clonal complex 398: case presentations and molecular epidemiology

Christiane Berning,[1] Christian Lanckohr,[2] Helmut Baumgartner,[3] Mike Drescher,[1] Karsten Becker,[1] Georg Peters,[1] Robin Köck[4] and Barbara C. Kahl[1]

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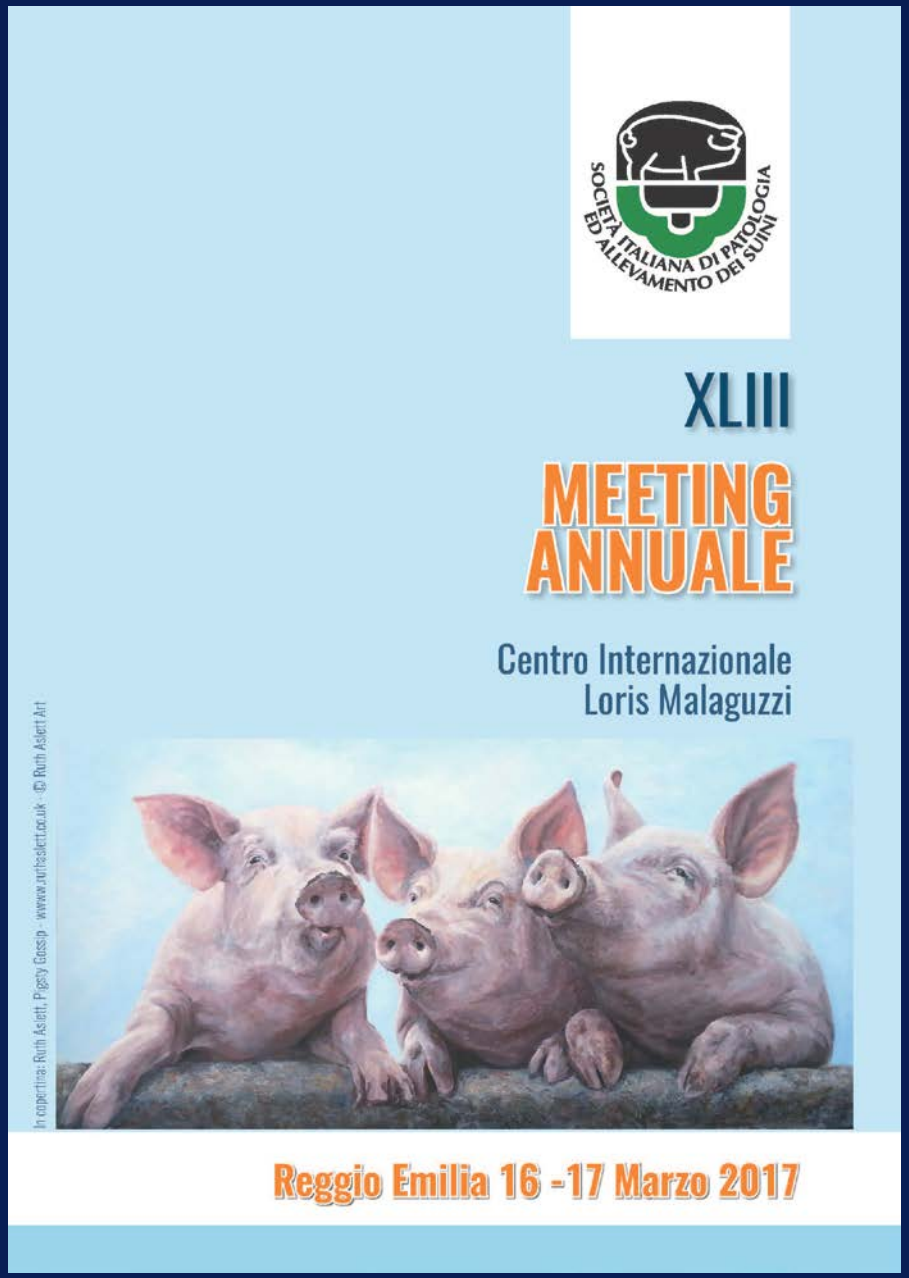
Rischio biologico occupazionale e Sanità Pubblica.....

Quale ruolo per il veterinario?



GRAZIE PER L'ATTENZIONE