Obtaining clinically useful information

What do you need to know?

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# What do you need to know to treat the piglets?

- · treatment objectives?
- · drugs likely to be active?
- · side effects & interactions?
- · monitoring required?
- · pharmacokinetics?
- · dose?
- · cost?
- · do the benefits outweigh the risks?

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## Drugs likely to be active?

- · antiseptics
- chlorhexidine
- iodine
- · antibiotics
- penicillins
- · narrow spectrum
- · broad spectrum
- cephalosporins
- tetracyclines
- etc, etc

# 5 sources of info 1. scientific literature 2. textbooks 3. colleagues 4. www 5. drug companies 6. plus this course! 6 Sources of info scientific literature - evidence based medicine colleagues - may be wrong textbooks • www - beware of complete crap · drug companies - IVS - MIMS advertising Reading scientific papers to extract clinically useful info 8 a digression on drug development · synthesise compounds · screen for activity on target screen for activity on other targets test in animal models pharmacokinetics animal toxicity testing phase 1 trials (healthy target species) phase 2 trials (sick target species) phase 3 trials (large nos. sick target species) (phase 4 trials - post marketing surveillance)

Types of papers  Basic science papers  Usually written by scientists with no idea about clinical problems  Veterinary clinical trials  Science is usually conspicuously absent  Human clinical trials  Usually of limited relevance	9
methods  What are the authors trying to show?  Does the experimental design allow them to do this?  Is the measure of outcome appropriate?  Observer bias, drug effects, etc  Are there suitable controls?  Were drug doses suitable?  Are the numbers sufficient?	
results  Are the results of the study valid?  - randomisation  - all animals accounted for  - statistically significant?  What are the results?  - size of treatment effect - clinically significant?  - precision	
discussion  Are the conclusions justified by the data?  How do the results compare to other studies?  How do the findings relate to veterinary practice in NZ?  Will the results help me in caring for my patients?  benefits worth the potential harm?	12

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"It has been clearly shown that drugs acting at the ORL1 receptor are good analgesics in vitro"

• Faber et al., 1996, *Br J Pharmac*, 119, 189

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When reading papers be sceptical!!!

#### Sources of info

- scientific literature
- evidence based medicine
- · colleagues
- may be wrong
- textbooks
- www
- beware of complete crap
- drug companies
   IVS
- MIMS
- advertising

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Sources of info		
· scientific literature		
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- may be wrong		
• textbooks		
<ul><li>may be out of date</li><li>www</li></ul>		
beware of complete crap		
<ul> <li>drug companies</li> </ul>		
- IVS		
- MIMS		
- advertising		
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Annalla a a la		
textbook		
Treatment		
Experimentally infected piglets respond favourably to	0	
a topical application of cloxacillin 10 000 units/g of lanolin base and 1% hydrocortisone combined with	of L	
parenteral cloxacillin (6). Treatment must be ad-		
ministered as soon as the lesions are visible. Naturally	v v	
occurring cases in piglets under 10 days of age respond	d	
poorly while older pigs recover with a skin wash using a suitable disinfectant soap.	a	
suitable disinfectant soap.		
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The <b>Pia</b> Site		
The <b>Pig</b> Site	19	
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* News & A Treatment	19	
* Determine the antibiotic sensitivity and inject affected piglets daily for 5 days, or on alternate days with a long-acting antibiotic to which the organism is sensitive to.	19	
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### How to treat the piglets?

- · treatment objective:
- cure the piglets as cheaply as possible
- · think about:
- will it work?
- is it safe?
- is it practical?

(cost)



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#### Sources of info

- · scientific literature
- evidence based medicine
- · colleagues
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- may be out of date • www
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   drug companies
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- advertising

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