

How can homeopathy make a difference in the AMR issue?

The aim of this document is to help colleagues with little or no knowledge about homeopathy to understand how and why homeopathy can be effective, and therefore play a role in solving the problem of AMR.

The first part of the document is a narrative to help colleagues take a step back and gain an insight into how homeopathy can be effective as a treatment; homeopathy is a different modality to help a patient when exposed to or infected by pathogenic microbial agents.

The second part presents a summary of research on the use of homeopathy in infectious disease.

The third part is a collection of documents that support the efficacy of homeopathic medicine, and provides arguments to encourage the wider scientific community to engage in research on homeopathy.

Part one: Homeopathy a different modality, a narrative.

Simplified conventional thinking and logic make the use of antibiotics the obvious way of dealing with ‘an infection’. Nevertheless, modern medicine has always known that promoting optimal health is an excellent method of controlling infectious disease. It is generally accepted that all factors, which promote optimal hygiene and appropriate nutrition, are of importance in the maintenance of optimal health and therefore limit the development of infectious diseases.

However, it is not always possible to bring the conditions together for optimal health, hence when, for whatever reasons, hygiene or nutrition remain less than perfect, illness and/or infections may still tend to occur.

In such situations, one may try to stimulate the defence of patients to infections by such means as vaccination. But maybe there are other ways to increase the ability of a patient or a group of animals to withstand an increase in infectious pressure?

What happens between the time when ‘infectious agents’ are present without causing disease, and the moment they start causing clinical disease? Sometimes a clear external cause can be found, but often the cause is quite subtle, and there may be disagreement between professionals about the nature of the cause. This may be because certain causes cannot easily be the subject of reproducible research. Questions that may arise are: What is the role of the patient (or group of animals) in allowing an infection to appear? Who plays the principal role: the infectious agent, or the patient and their circumstances? To what level has the patient (or group of animals) the ability to prevent establishment of infectious disease?

Apart from vaccines and supportive treatment, are there other ways to influence the patient (or a group of animals) in such a way that they do not allow infections to develop? Can we change something in the patient (or the group dynamic) so that the infection present cannot thrive, and is therefore controlled by the animal’s normal natural defences? Homeopathy has this capability.

Many tried and tested modern medical treatments or procedures lack a logical or scientific explanation to justify their validity. It is the outcome of trials that establish validity; scientific understanding may or may not come later. Hence, the lack of a definitive explanation for the actions of homeopathic medicines should not be used as a factor to discredit homeopathy. (That said there is actually a burgeoning amount of science surrounding the possible mechanism of action - see documents added.)

A further stumbling block to acceptance of homeopathy is contained in the alleged ‘implausibility’ of the bioactivity of the highly diluted remedies frequently used in homeopathy. Again, there are many publications supporting the nature of homeopathic dilutions, whether studies involving trials on living systems or using sensitive measuring apparatus to examine the electromagnetic properties of homeopathic medicines.

Some colleagues may think that homeopathic medicines can simply replace conventional medicines, but this is not exactly correct: there are, for instance, no homeopathic antibiotics or anti-inflammatory medicines. Indeed, whether an infection, inflammation, injury or other

stress is to be treated is of secondary importance in homeopathy as cases are dealt with in on individual basis. This fine-tuned relationship between the patient and the selected remedy is often based on information seemingly unrelated to the condition to be treated, but this information is necessary for a successful prescription.

One way of illustrating this is as follows: A radio can be tuned into a particular frequency of electromagnetic wave, which is inapparent to anything that is not equipped to receive that frequency. Similarly, when prescribing a homeopathic medicine, the recipient will only positively respond to a small number of 'frequencies' each of which carries a particular 'message'. Hence, the successful medicine selected must carry the right 'message' in the 'right frequency' to be effective. Instead of delivering a pure molecular influence, as we are used to with conventional medicines and even herbal medicines, the homeopathically prepared medicine delivers something more like a 'message'. It is only when this message makes sense to the patient that it can help by improving the normal defences to infection: only the right 'message' will make a difference: when the message makes sense and is useful to the patient at the time of infection (or other illness), the patient will 'hear' the message and use it for their benefit. Only the radio, tuned to the right wavelength, picks up the information carried by the waves.

So the 'right message' is a nugget of information that helps the patient respond more efficiently - in a similar way to a software 'patch' that repairs an application that has been malfunctioning.

Such a message only requires a medium to be passed on: this medium can consist of water or one of the other forms in which homeopathic medicines are prepared.

One needs to be brave to step from the comfortable modern paradigm to accepting that there are other ways to help patients. This is even more difficult when the mainstream projection of a technique like homeopathy may well try and make you look unscientific if you show interest. But should we not, in the interest of the patient, open our mind to enquire more about research that points to a wider choice of treatments options, especially those which cause less side effects and are more environmentally sustainable? Especially when the percentage of positive evidence for homeopathy in 104 research papers on homeopathy is strikingly equivalent to the percentage of positive evidence in an analysis of 1016 research papers in conventional medicine (1).

Such a therapy is homeopathy

- (1) El Dib RP, Atallah AN, Andriolo RB (2007). Mapping the Cochrane evidence for decision making in healthcare. *Journal of Evaluation in Clinical Practice*; 13: 689-692. <https://www.ncbi.nlm.nih.gov/pubmed/17683315>

Part two: summary of the evidence of the effectiveness of homeopathy and of its effectiveness in the treatment of infectious disease.

- 1. Homeopathy in humans and animals**
- 2. Evidence of the effectiveness of homeopathy in animals**
- 3. Important role of homeopathy in animals with infectious diseases**

1. Homeopathy in humans and animals

Although the precise mode of action of homeopathic medicines cannot yet be explained, fundamental research on animals (e.g. frogs, rats, mice), plants (e.g. wheat, duck weed, peas) and cells (e.g. basophilic leucocytes) has demonstrated that highly diluted homeopathic preparations are able to cause biological effects. We must assume that the placebo effect does not play a role here. In a systematic review and meta-analysis of fundamental research into the effects of highly diluted homeopathic preparations 67 in-vitro experiments in 75 publications were assessed according to specific quality criteria. The majority of these experiments demonstrated effects of highly diluted homeopathic preparations and in almost three quarters of all repeated studies the findings were positive. Also, experiments having a high methodological standard demonstrated a clear effect of highly diluted homeopathic preparations (6).

Success of homeopathic treatment is based on individualisation. Mathie et al.(5) showed in their meta-analysis of RCTs of individualised homeopathy (in humans), evidence for a specific treatment effect of individualised medicines which is based on RCTs identified as reliable evidence using the established Cochrane risk of bias assessment tool.

Regarding veterinary homeopathy, the meta-analysis by Mathie and Clausen (7) showed that overall there is a positive trend for the evidence on veterinary homeopathy and that the evidence is robust upon sensitivity analysis, although high-quality evidence comprises only two trials.

RCT in veterinary homeopathy

There is one meta-analysis of veterinary homeopathy (7). Nine of 15 trials with extractable data displayed high risk of bias; low or unclear risk of bias was attributed to each of the remaining six trials, only two of which comprised reliable evidence without overt vested interest. For all N=15 trials, pooled OR=1.69 [95% confidence interval (CI), 1.12 to 2.56]; P=0.01. For the N=2 trials with suitably reliable evidence, pooled OR=2.62 [95% CI, 1.13 to 6.05]; P=0.02). One study provides an example of how homeopathy can be of great importance. In a randomized, placebo controlled, double-blind study (8) for the homeopathic treatment of diarrhea in piglets caused by the bacterium *Escherichia coli* (*E. coli*) it was

demonstrated that the homeopathically treated group had significantly fewer piglets with *E. coli* diarrhea.

In June 2017, the EU Commission adopted the new European One Health Action Plan against Antimicrobial Resistance (AMR), which maintains that the use of antibiotics in animals should be minimized as much as possible and highlights the **need for alternatives** to antibiotics. The Commission stated that research into the development of new antimicrobials and alternative products for humans and animals will be supported (9). All potentially effective measures, including homeopathy, must be explored and deployed if we are to overcome the global threat of AMR.

We strongly believe that the benefit to patients, and our desire and ability to increase our medical tools, should drive the debate in these matters. That also includes an unbiased assessment of any scientific research. Our understanding is that complementary medicine, including homeopathy, has a great potential to contribute to better health of humans and animals. That is exactly the reason why WHO urges member states to include traditional and complementary medicine in their national health policies and systems (10).

References:

(5) MATHIE, R. T., LLOYD, S. M., LEGG, L. A., CLAUSEN, J., MOSS, S., DAVIDSON, J. R. T., FORD, I. (2014) Randomised placebo-controlled trials of individualized homeopathic treatment: systematic review and meta-analysis. *Systematic Reviews* 3, 142

<https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/2046-4053-3-142>

(6) WITT, C. M., BLUTH, M., ALBRECHT, H., WEISSHUHN, T. E., BAUMGARTNER, S., WILLICH, S. N. (2007) The in vitro evidence for an effect of high homeopathic potencies—a systematic review of literature. *Complementary therapies in medicine* 15, 128-38

<https://www.ncbi.nlm.nih.gov/pubmed/17544864>

(7) MATHIE, R. T., CLAUSEN, J. (2015) Veterinary homeopathy: meta-analysis of randomised placebo-controlled trials. *Homeopathy* 104: 3-8

<https://www.ncbi.nlm.nih.gov/pubmed/25576265>

(8) CAMERLINK, I., ELLINGER, L., BAKKER, E. J., LANTINGA, E. A. (2010) Homeopathy as replacement to antibiotics in the case of *Escherichia coli* diarrhea in neonatal piglets. *Homeopathy* 99, 57-62

www.ncbi.nlm.nih.gov/pubmed/20129177

(9) EUROPEAN COMMISSION (2017) A European One Health Action Plan against Antimicrobial Resistance (AMR)

https://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf

(10) WORLD HEALTH ORGANISATION WHO (2013) Traditional Medicine Strategy: 2014-2023

<http://www.who.int/medicines/areas/traditional/en/>

2. Evidence of the effectiveness of homeopathy in animals

In organic agriculture, the use of homeopathic remedies in Europe is explicitly recommended: they should be preferred over conventional medicine, according to the corresponding EU organic regulation of the European Commission ((EC) No 889/2008). While farmers experience daily success with homeopathy, more research is warranted to confirm these results. In this context, the International Association for Veterinary Homeopathy (IAVH) comments on the review by Doehring and Sundrum, published in *Veterinary Record* (1) in December 2016, in terms of objective reporting. This statement is supported by the European Committee for Homeopathy (ECH), the Homeopathy Research Institute (HRI) and EUROCAM. Scientific studies and a meta-analysis of randomized controlled trials provide, though limited, evidence for the effectiveness of veterinary homeopathy versus placebo (2, 3). With regard to the review published by Doehring and Sundrum (1), according to IAVH the most critical point to be noted is the following: Whereas this review by Doehring and Sundrum was thoughtful about research of homeopathy in a farm context in general, the conclusion of the authors ‘... replacing or reducing antibiotics with homeopathy currently cannot be recommended ...’ is not justified by their data since no new findings were obtained to existing literature (3, 4) and only the need for further high-quality studies can be derived.

It is important to note that in the recently published documents on the antimicrobial resistance (AMR) Action Plan of the EU Commission, CAM (complementary, alternative medicine), homeopathy included, is mentioned as a potential approach to solutions to AMR, and their demand for further research in CAM is particularly relevant in terms of the importance of the AMR problem in humans and animals. This is also the recommendation of the WHO strategy for CAM (complementary, alternative medicine) 2014-2023, which asks for the integration of CAM into health systems.

Conclusion:

- The recent review by Doehring and Sundrum (1) on effectiveness of homeopathy in livestock does not tell us anything new about the evidence base in homeopathy. The findings are broadly consistent with the findings of a previous, high-quality, review by Mathie and Clausen (4).
- A meta-analysis by Mathie and Clausen (3) showed that overall there is a positive trend in the evidence on veterinary homeopathy which is robust upon sensitivity analysis: i.e. the positive trend is unchanged whether one considers only the highest quality trials or all existing trials regardless of quality.
- Positive studies showing effectiveness of homeopathy in animals demonstrate that homeopathy may have a role to play in livestock: e.g. as a replacement for antibiotics for treating *E.coli* diarrhea in piglets (2).

- Considering the global threat of anti-microbial resistance, such promising areas deserve investment in further research, in particular high-quality randomized clinical trials.

References:

- (1) Doehring C, Sundrum A. *Veterinary Record* 2016; 179: 628.
- (2) Camerlink I et al. *Homeopathy* 2010; 99: 57-62.
- (3) Mathie RT, Clausen J. *Homeopathy* 2015; 104: 3-8.
- (4) Mathie RT, Clausen J. *Veterinary Record* 2014; 175: 373-381.

3. Important role of homeopathy in animals with infectious diseases

In farming, veterinary homeopathy is used in pigs, chickens, turkeys, sheep, and cattle.

Organic farming principles promote the use of unconventional therapies as an alternative to chemical substances (which are limited by organic regulations), with homeopathy being the most extensive. A Spanish study (11) showed that the main motivation to use homeopathy was the need to reduce chemical substances promoted by organic regulations, and the treatment of clinical mastitis being the principle reason. The number of total treatments was lower in farms using homeopathy compared with those applying allopathic therapies (0.13 and 0.54 treatments/cow/year respectively) and although the bulk SCC was significantly higher ($p < 0.001$) in these farms (161,826 and 111,218 cel/ml, respectively) it did not have any negative economical penalty for the farmer and milk quality was not affected complying with the required standards; on the contrary homeopathic therapies seems to be an alternative for reducing antibiotic treatments, allowing farmers to meet the organic farming principles.

The most common diseases treated with homeopathy in farm animals include diarrhea, pneumonia, infertility, mastitis, and birthing problems. Mastitis is an economically important disease of dairy animals throughout world, due to its long-term effects on milk yields. Huge economic losses are also incurred due to unmarketable milk or milk products contaminated with antibiotic residues. Conventional treatment depends on the use of antibiotics, which are not only costly but residues in milk and meat pose human health risks. Indiscriminate use of antibiotic results in the emergence of resistant bacterial strains causing an increase in treatment failures.

Diarrhea became a disease with significant economic impact in the production of swine due to the systems of intensive farming adopted. Enteritis can appear in three different stages: neonatal diarrhea, appearing during the first days of life; piglet diarrhea, when it appears from the first week of life to weaning; and diarrhea after weaning. Generally, 50-60% of deaths during the suckling stage happen during the first week of life mainly due to crushing by the sow or neonatal diarrhea. Neonatal diarrhea, mostly caused by *Escherichia coli*, is the disease

with highest impact in production of swine. If left untreated, it leads to weight loss and, not uncommonly, to death of the piglet, resulting in significant financial losses to the farmer. Conventional treatments of *E. coli* diarrhea is administration of antibiotics to affected piglets, or preventive vaccination of the sows. A recent study involving the use of homeopathy in the treatment of *E. coli* diarrhea in neonatal piglets showed promising results. (16) Antimicrobial use in animals contributes less to the rising problem of resistance and it is obvious that any non-essential usage of antimicrobials in animals should be curtailed: homeopathy may therefore offer an appropriate alternative. Homeopathy is emerging as an alternative therapy in veterinary medicine for its ability to prevent recurrence of diseases without leaving residues in animal products. Homeopathy depends on the totality of physical and psychological symptoms of the diseased animals and aiming to augment the body's immune defenses, supporting these rather than treating, inhibiting, or suppressing symptoms. Homeopathy can be effective in both bacterial and viral diseases. In addition, epidemic diseases in animals can be addressed with homeopathy, both in a preventive as well as a curative way. Often, with one remedy a whole epidemic within a herd can be treated. Both mastitis in cattle (12, 13, 14, 15) and *Escherichia coli* diarrhea in swine (16, 17) have been identified as clinically relevant issues for which homeopathy could be efficacious and some research has been conducted to begin evaluating these approaches. The most recent trial on *Escherichia coli* diarrhea (16) is a very good example of how a trial would be relatively easy and inexpensive to carry out, yet in return for this small investment, the potential rewards could be significant. It was a robust observer-blind, randomized placebo-controlled trial (triple-blinded, i.e. as to administration, scoring, and analysis) carried out by researchers at the University of Wageningen in the Netherlands. It explored the use of a homeopathic medicine derived from *Escherichia coli* bacteria (Coli 30K) instead of antibiotics at the prevention of *E. coli* diarrhea in piglets. 52 sows were randomly allocated into either the homeopathy group or the placebo group. The sows gave birth to 525 piglets that were scored for occurrence and duration of diarrhea. The results clearly showed an effect of the homeopathic medicine with only 3.8% of the homeopathy group suffering from diarrhea compared to 23.8% in the control group ($p < 0.0001$). This study and others indicates that potential benefits of the use of homeopathy in the treatment of neonatal diarrhea in piglets is considerable; furthermore, it does not carry the risk of AMR. IAVH recommends a replication of this study to be conducted. Given the size of the pig industry, a large-scale multi-centered approach would allow firm conclusions to be reached as to whether this form of homeopathic treatment is efficacious for prevention of *E. coli* diarrhea in piglets in the EU and could therefore significantly replace the use of antibiotics for this purpose. We believe that the evidence mentioned here indicates an area of novel antimicrobial treatment options in animal care that deserve further investment and investigation with adequately sized and appropriately designed trials.

In mollusks, homeopathic treatments improved growth and survival and enhanced survival against *V. alginolyticus* in juvenile *A. ventricosus*. This suggests that homeopathy is a viable treatment for this mollusk to reduce use of antibiotics in scallops and to combat the progressive increase in pathogen infections in mollusk hatcheries (19). Apart from clinical research, valuable preclinical results are already available. In vitro growth of MRSA was statistically significantly inhibited in the presence of belladonna atropa and MRSA nosode 6cH and 30cH compared to controls ($p < 0.0001$); and with combination of belladonna atropa or MRSA nosode 6cH and 30cH and oxacillin ($p < 0.001$). Belladonna atropa 30cH and MRSA nosode 6cH and 30cH significantly decreased bacterial DNase production ($p < 0.001$) and reduced red blood cell lysis. Hence, cultures of MRSA treated with belladonna atropa or MRSA nosode became more vulnerable to the action of the antibiotic oxacillin (20).

IAVH therefore recommends that the potential of homeopathy in reducing the problem of AMR is given serious consideration and that further research is carried out in this area to determine in which conditions, both in human and veterinary healthcare, homeopathy is particularly effective. Compared with other avenues of such as the identification and development of new antibiotics, such trials would be relatively easy and inexpensive to carry out, yet in return for this small investment, the potential rewards could be highly significant clinically. To date, there has been a huge disparity between public funding for conventional drug research and that for homeopathy research. Whilst homeopathy may improve health, reduce disease, reduce health costs and help reduce the problem of antimicrobial resistance, the homeopathy sector alone cannot be expected to fund the research to investigate these possibilities. The homeopathic industry is small and there are no major financial and/or industrial interests driving research efforts in this field. Like mainstream medical research, there is a social responsibility for government to fund such research. As for conventional medicine there should be industry-independent funded research. Homeopathy can support the EU strategy to conserve and steward the effectiveness of existing antimicrobial treatments and offer an avenue for the development of novel future therapies. It is time for serious consideration and investment to be given to it.

In June 2017, the EU Commission adopted the new European One Health Action Plan against Antimicrobial Resistance (AMR), which contains even more references to the need of alternatives to antibiotics than its predecessor (18). Some quotes to be mentioned:

- More research is needed to develop new medicinal products, therapeutics and alternative treatments.
- The Commission will support research into the development of new antimicrobials and alternative products for humans and animals.
- The Commission will support SMEs in their R&D efforts towards innovative and/or alternative therapeutic approaches for the treatment or prevention of bacterial infections.
- Developing new antimicrobials or alternative therapies requires significant and long-term investments.

- The involvement of HTA bodies in AMR-related discussions could raise their awareness on AMR when assessing the added value of new antimicrobials and alternatives, diagnostics or a combination thereof.
- The Commission will support research into the development of new economic models, exploring and analysing incentives to boost the development of new therapeutics, alternatives, vaccines and diagnostics.

Cooperation between university hospitals / general practice animal clinics with homeopathically treating veterinarians would be of high value for patients suffering from infections and even more for those suffering from infections caused by multiresistant bacteria. Further high-quality studies could then be conducted by cooperating teams!

References:

11. Orjales I, Lopéz-Alonso M, Rodríguez-Bermúdez R, Rey-Crespo F, Villar A, Miranda M (2015). Use of homeopathy in organic dairy farming in Spain. *Homeopathy*, 105: 102-108.
12. Searcy R, Reyes O, Guajardo G (1995). Control of subclinical bovine mastitis. Utilization of a homoeopathic combination. *British Homeopathic Journal*, 84: 67-70.
13. Varshney JP, Naresh R (2005). Comparative efficacy of homeopathic and allopathic systems of medicine in the management of clinical mastitis of Indian dairy cows. *Homeopathy*, 94: 81-85.
14. Werner C, Sobiraj A, Sundrum A (2010). Efficacy of homeopathic and antibiotic treatment strategies in cases of mild and moderate bovine clinical mastitis. *Journal of Dairy Research*, 77: 460-467.
15. Klocke P, Ivemeyer S, Butler G, Maeschli A, Heil F (2010). A randomized controlled trial to compare the use of homeopathy and internal Teat Sealers for the prevention of mastitis in organically farmed dairy cows during the dry period and 100 days post-calving. *Homeopathy*, 99: 90-98.
16. Coelho C de P, Soto FRM, et al. (2009). Evaluation of preventive homeopathic treatment against colibacillosis in swine production. *International Journal of High Dilution Research*, 8: 183-190.
17. Camerlink I, Ellinger L, et al (2010). Homeopathy as replacement to antibiotics in the case of *Escherichia coli* diarrhea in neonatal piglets. *Homeopathy*, 99: 57-62.

18. EUROPEAN COMMISSION (2017) A European One Health Action Plan against Antimicrobial Resistance (AMR)

https://ec.europa.eu/health/amr/sites/amr/files/amr_action_plan_2017_en.pdf

19. Homeopathy outperforms antibiotics treatment in juvenile scallop *Argopecten ventricosus*: effects on growth, survival, and immune response. Homeopathy 2017. José Manuel Mazón-Suástegui et al.

<http://www.sciencedirect.com/science/article/pii/S147549161630073X>

20. Action of antibiotic oxacillin on in vitro growth of methicillin-resistant *Staphylococcus aureus* (MRSA) previously treated with homeopathic medicines. Homeopathy 2016. Tânia Aguiar Passeti et al

[http://www.homeopathyjournal.net/article/S1475-4916\(16\)30048-0/pdf](http://www.homeopathyjournal.net/article/S1475-4916(16)30048-0/pdf)

Part three: The arguments for homeopathy.

This is the index to a number information documents, which are part of this report. They offer the reader a variety of arguments to support homeopathic research. When available, links are provided to the origin of the attached papers.

- 1) 'Power Point Presentation on the Proof of effectiveness of (veterinary) homeopathy'
A summary on what has happened during the last 12 months (Dec 2016 – Nov 2017)!

- 2) 'Unio Colloquium Prog May 2017'

These are the proceedings of a colloquium on homeopathy presented to the authorities in Brussels in May 2017. It offers a succinct presentation of several aspects of homeopathic medicine.

http://www.homeopathie-unio.be/uploads/files/unprotected/Research/Unio_Colloquium_Prog.pdf

- 3) M. V. Wassenhoven, M. Goyens, M. Henry, E. Capieaux, P. Devos (2017). Nuclear magnetic resonance characterisation of traditional homeopathically-manufactured copper (Cuprum metallicum) and a plant (Gelsemium sempervirens) medicines and controls. Homeopathy; 1-17.

This is an article published in the magazine 'Homeopathy' that offers a possible scientific explanation for the working mechanism of homeopathy and is related to the previous document.

- 4) 'HRI (Homeopathy Research Institute) Malta 2017'. The HRI is a homeopathic research body, the document summarises the highlight of their conference in May 2017.

https://www.hri-research.org/wp-content/uploads/2017/08/HRI_RIF_34_MaltaConfReport.pdf

- 5) CORE-Hom is the most comprehensive and academically rigorous database of its kind, and the only homeopathy database providing information about the quality of the studies it contains. The Clinical Outcome Research in Homeopathy database contains all types of clinical outcome studies, from randomised controlled trials to observational studies.

<https://www.hri-research.org/resources/research-databases/>

- 6) CAM databases: Further information about published research investigating homeopathy and other types of complementary and alternative medicine can be found in four specialist databases (CAM).

<https://www.hri-research.org/resources/research-databases/cam-databases/>

- 7) EUROCAM Position Paper on CAM and AMR 'The role of complementary and alternative medicine (CAM) in reducing the problem of antimicrobial resistance (AMR)

<http://cam-europe.eu/the-role-of-complementary-and-alternative-medicine-cam-in-reducing-the-problem-of-antimicrobial-resistance.php>

- 8) The contribution of Complementary & Alternative Medicine (CAM) to future strategies on antimicrobial resistance: the need for research
<http://www.camdoc.eu/Pdf/CAM%202020%20final.pdf>
- 9) Supplement to the RAND questionnaire by ECH, December 2015
Antimicrobial resistance: Also think like patients – ‘outside the box’
- 10) I. Camerlink, L. Ellinger, E.J. Bakker, E.A. Lantinga (2010). Homeopathy as replacement to antibiotics in the case of Escherichia coli diarrhoea in neonatal piglets. Homeopathy; 99: 57-62.
- 11) ‘Difference between CAM and conventional medicine’. This document was created by EUROCAM.
- 12) ‘Integrative Health care Arriving at a working definition’. This is a document that examines how different medical techniques can be used together: integrative medicine.
https://www.researchgate.net/publication/8236959_Integrative_Healthcare_Arriving_at_a_Working_Definition

The following documents illustrate the typical bias of reviews that conclude that homeopathy is not effective.

- 13) Hahn RG. (2013). Homeopathy: meta-analyses of pooled clinical data. Forsch Komplementmed; 20: 376-81. Epub 2013 Oct 17.
<https://www.karger.com/Article/FullText/355916>

An article published by Prof Hahn after he decided to find out for himself whether there was any proof that homeopathy was more than water.
- 14) ‘The Australian report on homeopathy’. This article explains why the review by the Australian government in relation to homeopathy was scientifically incorrect. Apart from this article a film titled ‘Just one drop’ shows what was done in more detail. Public viewing of this film can be organised.
<https://www.hri-research.org/resources/homeopathy-the-debate/the-australian-report-on-homeopathy/>
- 15) ‘BHA response to the EASAC Statement’. Recently a statement was released by the European Academies Science Advisory Council saying that Europe should not invest in research relating to homeopathy. The following links will take you to statements explaining why their conclusion is unfounded:
<https://www.britishhomeopathic.org/bha-blog/bha-response-easac-statement/>
<https://www.hri-research.org/2017/09/easac-statement-on-homeopathy/>

Fisher P. (2017). Homeopathy and intellectual honesty. Homeopathy; 1-3.

<https://doi.org/10.1016/j.homp.2017.10.001>

- 16) 'Veterinary Record, letter to the editor comparison of veterinary drugs and homeopathy.' This is our response to two articles that were recently published in the Veterinary Record. We were surprised that these articles had been accepted by the Veterinary Record.

De Beukelaer E., Renoux H., Nicolai T., Tournier A. (2017). Veterinary homeopathy: a defence. Vet Record; 181 (17).

<http://veterinaryrecord.bmj.com/content/181/17/456.1>

In relation to homeopathy and research:

- 17) 'To those who demand scientific evidence for homeopathy' is the work of Marcus Zulian Teixeira MD, BC Homeopathy; PhD, Medical Sciences; Professor of "Fundamentals of Homeopathy", School of Medicine, University of São Paulo.

<http://homeopathyeurope.org/demand-scientific-evidence-homeopathy/>

- 18) 'Indian review of homeopathy' is an article from the Indian Journal for research in homeopathy.

<http://www.ijrh.org/article.asp?issn=0974-7168;year=2017;volume=11;issue=3;page=147;epage=157;aulast=Khuda-Bukhsh>

- 19) 'Eurocam call for action on alternative medicines.' This is another document published by EUROCAM. It lists the reasons why alternative medicines should be part of mainstream medical programs.

- 20) 'Case report AMR Weiermayer' Wound healing disorder in a horse, associated with antimicrobial resistant bacteria, resolved with a homeopathic remedy – a case report by Petra Weiermayer, DVM