



Friends of Science in Medicine

Newsletter 25—26 June 2020

COVID-19 – the race where everyone is a winner.

In Australia, and across the world, our medical scientists are working hard to control and counter COVID-19 – developing vaccines, re-testing and modifying old drugs and inventing new ones.

It's not just about the vaccine.

Whether an old drug for TB, a genetically modified drug or a herbal remedy, everything is 'on the table'.

- * Biologists are analysing the genetics and biochemistry of the virus.
- * Pathologists are describing the fatal effects of the virus.
- * Immunologists and biochemists are investigating our bodies' responses.
- * Microbiologists are finding ways to inhibit the growth of the virus.
- * Medical doctors are trying to diagnose the infection quickly and recommend appropriate preventive measures.
- * Epidemiologists are tracing the spread of the illness.



Hundreds of clinical trials are underway, from finding faster ways to test to improved ways of administering vaccines.

As the death toll rises each day, we desperately need all our tireless, quietly achieving biomedical scientists.

Despite our record of overall good health, some Australians have turned their backs on science. They 'believe' in so-called 'Complementary and Alternative Medicine', which does *not* complement scientific medical practice and which is certainly *no* alternative. Let's hope that this pandemic demonstrates to many unthinking Australians, the real value of our medical scientists. After all, they come from the ranks of our best and our brightest.

GO MEDICAL SCIENCE!

A special thanks to people who volunteer for clinical trials. Without their generosity, research would not be possible. Be a publicly-minded Aussie, put your hand up to volunteer if you are in a cohort of those needed for a particular trial.



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FSM and Order of Australia Awards

Professor Marcello Costa AO FAA



FSM co-founder and consultant [Professor Marcello Costa](#), has achieved yet another award!

To date, he has written over 282 science papers, 72 reviews, and 2 books.

His most recent award is:

- * 2020: Office of Order of Australia: (AO) “for distinguished service to higher education and to medical research, in the field of neurophysiology and to professional scientific bodies.”

His other achievements are:

- * 2018: Federation of Neurogastroenterology and Motility (FNM) Societies Lifetime Achievement Award in recognition of his research and mentorship.
- * 2015: Honorary Bragg Member of the Royal Institution of Australia (RIAus).
- * 2014: Australasian Neuroscience Society Medallion for “individuals who have provided outstanding service to the Society.”
- * 2012: Matthew Flinders Distinguished Professor at Flinders University.
- * 2012: ‘Skeptics of the Year’ by the Australian Skeptics (with other founders of FSM).
- * 2010: Life Membership of the Australian Neuroscience Society.
- * 2008: Life Member of the Centre of Neuroscience at Flinders University.
- * 2008: “Unsung Hero of South Australian Science Communication” Award (jointly with Professor Ian Gibbins).
- * 2006: Flinders 40th Anniversary Medal for services to the University.
- * 2001: Centenary Medal Australia.
- * 1994: Piedmontese of the Year.
- * 1992: ‘Cavaliere della Repubblica Italiana’ from the Italian Government.
- * 1988: Fellow of the Australian Academy of Science.

Professor Costa joins the new FSM President and the other four co-founders in gaining an award in the [Australian Honours System](#).

They are:

- * [Assoc Prof Ken Harvey AM](#),
- * [Emeritus Professor John Dwyer AO](#),
- * [Emeritus Professor Alastair MacLennan AO](#),
- * [Professor Rob Morrison OAM](#) and
- * [Loretta Marron OAM](#).

Professor Costa [was one of five Academy Fellows](#) to be recognised in this year’s Queen’s Birthday honours, receiving the Order of Australia for their outstanding service or exceptional achievements.

Congratulations to all the recipients of this prestigious award, past and present.



Paying the price for questioning Traditional Chinese Medicine - Beware!

If scientists were fearful of a clinical trial's producing negative results, would they even pursue it? A draft Chinese regulation issued in late May aims to criminalise individual scientists and organisations [whom China claims damage the reputation](#) of Traditional Chinese Medicine (TCM).

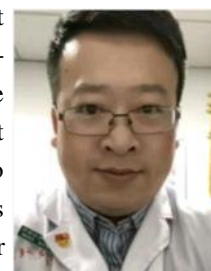
Beijing has a reputation for reprimanding those who decry TCM. Such criticism is blocked on Chinese Internet. Silencing doctors is becoming the norm.



Tan Qindong

In January 2018, [former anaesthetist, Tan Qindong](#), was arrested and spent more than three months in detention after criticising a widely advertised, best-selling 'medicinal' TCM liquor. Claiming that it was a 'poison', he believed that he was protecting the elderly and vulnerable patients with high blood pressure. Police claimed that a post on social media damaged the reputation of the TCM 'liquor' and of the company making it. Shortly after release, he suffered post-traumatic stress and was hospitalised.

On 30 December 2019, Chinese ophthalmologist, the late Dr Li Wenliang, was one of the first to recognise the outbreak of COVID-19. He posted a private warning to a group of fellow doctors about a possible outbreak of an illness resembling severe acute respiratory syndrome (SARS). He encouraged them to protect themselves from infection. Days later, after his post when viral, he was summoned to the Public Security Bureau in Wuhan and forced to "admit to lying about the existence of a worrying new virus". Li was accused of violating the provisions of the ["People's Republic of China Public Order Management and Punishment Law"](#) for spreading "unlawful spreading of untruthful topics on the internet" and of disturbing the social order. He was made to sign a statement that he would "halt this unlawful behaviour".



Li Wenliang



Yu Xiangdong

In April 2020, Chinese physician [Yu Xiangdong, a senior medico](#) who worked on the front line battling COVID-19, posted on Weibo, a Twitter-like site, a criticism of the use of antibiotics and TCM to treat COVID-19. He was demoted from his positions as assistant dean at the Central Hospital in the central city of Huangshi and director of quality management for the city's Edong Healthcare Group. Well known for [promoting modern medicine](#) amongst the Chinese, Yu had almost a million followers on social media. All his postings vanished.

[Beijing insists](#) that TCM has been playing a crucial role in COVID-19 prevention, treatment and rehabilitation. Claims continue to be made for ["effective TCM recipes"](#). However, no randomised clinical trial has been published in any reputable journal.

[TCM needs proper scrutiny](#), but criticising it could land you years in prison. If the benefits of suggested herbal remedies are to be realised, good clinical studies must be encouraged. For TCM, this might never be permitted.

Don't think for a moment that you are safe in Australia.

Article 8.25 of the [Free Trade Agreement Between the Government of Australia and the Government of the People's Republic of China](#) reads:

Traditional Chinese Medicine Services ("TCM")

2. Within the relevant committees to be established in accordance with this Agreement, and subject to available resources, Australia and China shall cooperate on matters relating to *trade in TCM services*.
3. Cooperation identified in paragraph 2 shall:
 - (a) include exchanging information, where appropriate, and discussing *policies, regulations and actions related to TCM services*; and
 - (b) *encourage future collaboration between regulators, registration authorities and relevant professional bodies* of the Parties to facilitate trade in TCM and complementary medicines, in a manner consistent with all relevant regulatory frameworks. Such collaboration, involving the competent authorities of both Parties – for Australia, notably the Department of Health, and for China the State Administration of Traditional Chinese Medicine – will *foster concrete cooperation and exchanges relating to TCM*.

Loretta Marron OAM, CEO, FSM



World Health Organization and Beijing—an unhealthy partnership?

Although assumed to be traditional, much of what we know today as 'Traditional Chinese Medicine' (TCM) was invented in the 1950s for political reasons [by then Chairman Mao](#). It has since been proclaimed by Xi Jinping, now life-President of the People's Republic of China, as the "jewel" in the millennia of Chinese civilization.

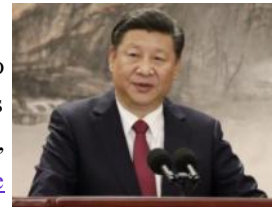
In May this year, Xi ["announced plans to criminalise criticism of traditional Chinese medicine"](#). Speaking out against TCM could land you years in prison, prosecuted for "picking fights to disturb public order" and "defaming" the practice.



With the industry expected [to earn \\$420 billion by the end of 2020](#), COVID-19 has provided Xi with a platform to promote unproven, potentially harmful TCM. To keep these profits filling Chinese coffers, the World Health Organization (WHO) remains silent and those challenging TCM are silenced.

In January, the late Dr Li Wenliang, after warning his fellow doctors about COVID-19, [was summoned to the Public Security Bureau in Wuhan](#) and made to sign a statement in which he was accused of making false statements that disturbed the public order. As the virus silently spread around the world, Beijing told the WHO [that there was 'no clear evidence' of spread between humans](#).

As their death toll passed 1,000, Beijing's response was to [remove senior officials](#) and to sack hundreds over their handling of the outbreak. With the support of the WHO, claims continue to be made that TCM ["has been proved effective in improving the cure rate"](#), denying the simple fact that ["patients would have recovered even if they hadn't taken the Chinese medicine"](#).



Xi Jinping

With cases exceeding 10 million, hundreds of thousands of people dead world-wide and with economies in free-fall, Beijing continues, ["to protect its interests and people overseas; to gain leadership of international governance"](#), for financial gain, to aggressively use its national power. Countries challenging Beijing can expect [claims of racism](#) and financial [retaliation](#).

Back in 2016, the Chinese [State Council](#) released a ["Strategic Development Plan for Chinese Medicine \(2016-2030\)"](#), seeking to spread 'knowledge' into campuses, homes and abroad.

In July 2017, a law promising equal status for TCM and Western medicine came into effect. Provisions included encouragement to China's hospitals to set up TCM centres. ["The new law on traditional Chinese medicine will improve global TCM influence, and give a boost to China's soft power"](#).

In 2019, after strong lobbying by the Chinese Communist Party (CCP), [WHO added a chapter on TCM](#) to their official International Classification of Diseases (ICD-11).

While Chinese herbs might have exotic names, they are, once translated, often the same as western herbs, many of which might have significant interactions. WHO fails to acknowledge any drug interactions.

In 1967, Mao launched Project 523 to find a cure for chloroquine-resistant malaria. Over 240,000 compounds had already been tested and none had worked. Trained in pharmacology and modern western methods, Tu Youyou used the scientific method to test sweet wormwood, a herb traditionally used in China for fever, where she developed a useful artemisinin derivative for resistant malaria. The drug has saved millions of lives. In 2015 she won the Nobel Prize for her work. However, Tu's work is not a blanket endorsement of TCM: without the years of scientifically valid research, [she would not have been successful](#).

TCM is not medicine. It's little more than a philosophy or a set of traditional beliefs, about various concoctions and interventions and their alleged effect on health and diseases. [TCM's are not safe](#). Most systematic reviews suggest that there is no good or consistent evidence for effectiveness, negative results aren't published, [research data are fabricated](#) and [TCM-exports are of dubious quality](#). Some are adulterated with modern antibiotics to provide an illusion of effectiveness.

To stop misleading the world with what Mao himself saw as nonsense, and to mitigate future pandemics, WHO can and should remove all mention of TCM other than to state that it is unproven and could be dangerous.



Why do some registered medical practitioners promote CAM interventions?

Why do *some* doctors, equipped with a science-based degree offering so many opportunities for a satisfying professional career, join the ranks of raggle-taggle quacks and self-proclaimed experts? These range from outright shonks (eg Gwyneth Paltrow) to the sincere, but befuddled, followers of rigid, ancient, pre-scientific belief systems.

I offer some thoughts on what might or might not answer this question.

1. Science is hard work

Learning can be described as 'shallow', 'deep' or 'strategic'. Some students manage to scrape through their medical degree without a genuine understanding of biomedical science. How else could one explain their willingness to embrace pseudo-science?

2. 'Transactional' medicine is unsatisfying

Rather than simply expanding their concept of good medical care, some make a 'mind-body' connection through pseudo-science. They don't realise that psychological medicine is as heavily reliant on science as is physical medicine, and that social ills outside the remit of Medicine will not be fixed by reference to pseudoscience. [George Engel's biopsychosocial model](#) reminded us, more than 40 years ago, that good clinical practice is both compassionate and scientific.

3. Finding a niche

Because scientific medical advances are relentless, no-one can abreast of everything. Group practices can encourage GPs to sub-specialise – in women's health, paediatrics, aged care, minor procedures, etc. Stepping into the simplistic world of CAM might feel like just another niche.

4. The lure of authority

To be "just a GP" often, considering the challenges of generalisation, offends – so much so that the RACGP makes a point of challenging this expression.

Garnering respect from a sub-group of patients who embrace alternatives is another temptation to authoritarian personalities. Certain large, lucrative practices, underwritten by Medicare, have developed this way.

5. A discourse community

The need for answers to the complex biopsychosocial questions posed by ill-health can lead doctors into a 'discourse community', especially via social media, within which they find other doctors speaking the same language and reinforcing one another's unscientific ideas.

6. A streak of rebellion

Being different can be attractive. We all have a streak of rebellion against doctrinaire medical experts who show scant regard for GPs at the frontline. It can feel good to say "You don't know *everything*. Your biomedical model is lacking, mine is holistic (therefore complete)." And because it is, by its very nature, unscientific, it is beyond evidence-seeking scrutiny.

7. The mystery

We are surrounded by Nature's mystery. We don't know why patient A develops a fatal brain tumour, or why B became much more ill with COVID-19 than C, who didn't even know they'd had the infection. We can determine some reasons, guess at others, and still be left with residual mystery.

CAM enables its practitioners to play a sacerdotal role in a world where priests and priestesses are becoming rarer as western conventional religions lose authority. It can be highly lucrative, with some practitioners promoting and then selling 'treatments' and 'medicines' in which they have a commercial interest.

Conclusion

All in all, the lure of CAM, from a practitioner's social and psychological perspective, is relatively easy to understand. The economic side is also tempting – including applying or selling the bogus interventions, and using Medicare item numbers for consultations to hide bogus practices.

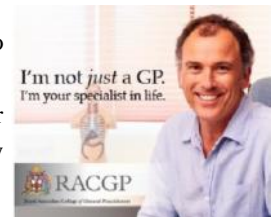
The cure? "You can take the horse to water, but you cannot make it drink."

It is too much to expect of these medical fraudsters that they will work with humility, read widely and gain a deeper understanding of what the sciences (biomedical, psychological and social) can provide in helping to meet patients' needs? Intervention by Medicare, to exclude rebates for such consultations, is, regrettably, the only practical solution.

Dr Richard Gordon MBBS FRACGP Dip Health Law. General Practitioner



Richard Gordon





COVID-19 Serology Testing

COVID-19 serology testing will be available soon. The tests have two important uses. The first is to check if someone has been exposed to the virus. Although this is not yet established, most experts believe that these people will develop some immunity, lasting months or years. This is the idea behind the 'immunity certificates' some countries are thinking about. Because of uncertainty about immunity, and problems with test performance, this is *not* being proposed here.



The second important use is to assess how many people in the community have been exposed. It is likely that all or most recovered people will have made antibodies. If we knew the proportion of the whole population who had antibodies, this would help us know how many people had *no symptoms* and were not detected. It would also help plan our path out of our work and social restrictions.

The TGA has given emergency approval to a number of simple point-of-care (POC) tests. Some might be suitable for the first purpose ("Who has had it?"), but not likely for the second (population screening).

This is because of two aspects of test performance. Test sensitivity shows the proportion of affected people with a *positive* result. Test specificity shows the proportion of unaffected people with a *negative* result.

A simple POC test might have 95% sensitivity and 95% specificity. So it would give a false *negative* result in 5% of affected people and a false *positive* result in 5% of non-affected people. Some tests might perform better, some worse. We don't yet have full, independent, evaluation data on the TGA's 'emergency approved' tests.

We can use Bayes' theorem, devised by the 18th century British clergyman, Thomas Bayes, to help interpret the likelihood of results being true or false in any particular person.

Consider a group of mine workers (or an Australian city) where, unknown to us, 5% have had COVID-19. This is the 'prior' or 'pre-test probability' we use in our calculation. Testing is done with a simple finger-prick blood sample at a mining site (or at a doctor's surgery). Its sensitivity and specificity, as explained above, are both 95%.

Bayes theorem tells us that, in this situation, we can be 99.8% confident that a negative result is *true* and that most people will give negative results. However, half of the positive results will be *false-positives*. That test is not good enough.

Now consider state-of-the-art tests, under development and not yet available, run on sophisticated laboratory instruments. Their sensitivity is 100% and their specificity is high at 99.8%. We expect just *one* false positive result for every 500 people who have definitively never had the disease and who *should* be negative.

Using this improved test, we could now have 100% confidence in a negative test result and 96.3% confidence in a positive test result in our mine workers. Were we issuing immunity certificates, we would probably accept this test.

Can we use this new test for the second purpose – testing the general population to see how many have been exposed to COVID-19? Let's check the numbers.

We've had 6,800 cases so far, say 7,000. If we assume that only one-third were detected, the real number would be closer to 20,000. Let's assume that all those 20,000 people developed antibodies. As the Australian population is 25,000,000, the proportion ('prevalence') of people with antibodies would be: $20,000/25,000,000 = 0.08\%$ – or 800 people in every 1,000,000.

Assume our new test has a sensitivity of 100% and a specificity of 99.8%.

If we tested a random sample of one million Australians, this is what we would see.

Let's assume that somehow, we manage to test the 800 people who *do* have antibodies first. Because our test has 100% sensitivity, we will detect them all and get 800 true-positive results.

Next, we test the remaining 999,200 people *without* antibodies. If our test were perfect, we would get *all* negative results. However, our test has only 99.8% specificity, so we can expect to get one false-positive for every 500 people tested. When we have finished testing the remaining 999,200 people, we will have mostly negative results, but 1,998 will have *false-positive* results.

There would be more than twice as many *false-positives* than *true-positives*. As a result, we would get the wrong answer to our question: "How many people have been infected?" Our test would tell us that $800 + 1,998 = 2,798$ people per million had been infected, whereas the true number would be 800 per million. We have overestimated the proportion of people with antibodies by more than three times.

The lesson is that we have to be careful how we use and interpret diagnostic tests. The Reverend Bayes could never have imagined that his theorem would one day, in the setting of a global pandemic, be used to help guide governments' decisions.

More information:

[Lab Tests Online Australasia, AJCP - Are SARS-CoV-2 Serologic Tests Safe Right Now?](#) and [JAMA - Privileges and Immunity Certification During the COVID-19 Pandemic](#)



Dangerously Irresponsible Media

Channel Nine likes to portray its [60 Minutes program](#) as TV journalism at its best. Any such claim should be disputed after its recent interview with celebrity cook and dangerous promoter of 'alternative health', Peter Evans.

As the global struggle with COVID-19 threatens lives and economies, Evans was allowed to express his doubts about the very existence of the virus. "Science has been bought by vested interests in so many different fields over the years" he opined. He added that what was being called 'coronavirus' was "probably a flu going around and getting people sick, but I believe the motives of the world at the moment doesn't make sense at all", (whatever that gobbledegook means). He shared the interview with another 'expert', Fanos Panayides, a former security guard turned prominent social media conspiracy theorist. He, too, doubted the existence of the virus.



John Dwyer



The BioCharger

The [TGA recently fined this same Peter Evans \\$25,000](#) for offering, despite his doubts about the existence of the virus, a mere \$15,000 machine which could cure coronavirus infection. Sad to say, Evans has 1,500,000 followers on social media to whom he peddles much dangerous misinformation – vaccination is to be avoided, drinking water should not be fluoridated, and sunscreens *cause* cancer!

Evans has championed the so-called 'Paleo-diet' – health and happiness are associated with the elimination of carbohydrates. He is not alone in promoting this extreme diet, despite 15 years of scientific evaluation good science showing that long-term adherence increases the likelihood of suffering cardiac disease. Nutritionist experts have been alarmed by his book advocating a 'Paleo' for babies – it could be fatal.

Evans, who 'won' the [Australian Skeptics' prestigious 'Bent Spoon' award](#), and was recently axed from Channel 7's [MKR cooking show](#), has announced his intention to promote 'alternative health' strategies. Annoyingly, this has been aided and abetted by Netflix's screening a 'documentary' in which he offers his dangerous advice. When criticised, Netflix argued that they have a responsibility to offer alternative views!



Australian Skeptics 'Bent Spoon' Award

Often, when radio or TV interviews feature individuals promoting false or misleading science or health concepts, a genuine expert will provide a critical analysis. Often, however, listeners/viewers are left confused when the media make no effort to provide equal time for valid opinions. Worse however, as in the Evans examples, is when no scientific rebuff is presented. For too much of our media, sensationalism has no problem trumping science.

Broadcasting licence laws require broadcasters to check the veracity of what they present. Australian authorities, however, pay little or no attention to non-compliance. The Evans examples are not unusual.

Sadly, Australia has the lowest level of health literacy of [OECD countries](#). FSM's efforts to better protect patients and families from health care fraud have largely focussed on false advertising and the promotion of pseudoscience by health care providers.

More attention must be drawn to the need to hold all media to higher standards of accuracy while we promote the 'fact-checking' skills needed in a world where 'alternative facts' are acceptable and where social media influence so many.

Professor John Dwyer AO, PhD, FRACP, FRCPI, Doc Uni (Hon) ACU. Emeritus Professor of Medicine and co-founder and inaugural president of FSM



TGA Listed 'Bioresonance' Devices —R.I.P.

In March 1991, the [Australian College of Allergy](#) published an article in the *Medical Journal of Australia* (MJA) about a 'bioresonance' device for allergy testing. Titled "[VEGA testing in the diagnosis of allergic conditions](#)", it stated that it was "an unorthodox method of diagnosing allergic and other diseases" with "no established scientific basis" and "no controlled trials to support its usefulness".

The article raised concerns that this test "may lead to inappropriate treatment and expense to the patient and community". VEGA is one of nearly 30 'energy medicine' devices, some of which [continue to cite](#) Therapeutic Goods Administration (TGA) 'listing numbers'.



Sometimes costing more than \$34,000, the sponsors tell practitioners that they can earn up to \$150,000 annually with these computerised devices. Referring to 'bioresonance' as "[the medicine of the future](#)", they claim that all toxins, viruses and bacteria have unique 'frequency patterns', which, when 'neutralised' by the device, restore the patient to health.

They may also claim that it can [cure addictions to alcohol, cocaine, crack, nicotine, heroin, opiates, cannabis, spice, 'legal highs' and other medications](#). Some claim that it can cure cancer, hay fever, allergies, auto-immune diseases, behavioural problems, smoking addiction and that it can kill parasites – the list goes on.



The devices are 'based' on acupuncture, homeopathy and 'quantum physics'. More than 60 reviews in the Cochrane Collaboration (the 'Gold Standard' for evidence-based Medicine), [have failed to find robust evidence for clinically significant outcomes for acupuncture for any disease or disorders](#). The National Health & Medical Research Council concluded, "[there are no health conditions for which there is reliable evidence that homeopathy is effective](#)" and quantum physics "is not at work".

In February 2020, nearly 30 years after that MJA article, the TGA's cancellation of [two of these devices](#) saw the last of them removed from their register, but not from permissible advertising or practice.

From 2013 to 2018, FSM had repeatedly written letters and submissions to the TGA asking for these devices to be investigated. Meeting with the national manager in 2016, we were told that these devices could not be cancelled because they were 'biofeedback' devices, which had a legitimate place in health care. In 2018, FSM sourced comments from informed experts here and overseas. These disputed the 'biofeedback' claim. FSM sent screenshots from more than 200 websites to the [TGA advertising complaints](#).

In 2019, after issuing a [warning on bioresonance](#), the TGA closed the complaints and commenced an 'education campaign'. They also engaged a credible Australian scientific organisation to review the evidence provided by eight 'sponsors' of 12 'bioresonance' devices listed in the Australian Register of Therapeutic Goods.

All devices have now been cancelled by their sponsors or by the TGA. The 'education campaign' continues.

Even though the devices are still widely used, and [courses](#) still being run, FSM considers this a modestly satisfactory outcome.

Loretta Marron OAM, CEO, FSM



Veterinary Medicine and CAM

Column by Tanya Stephens

COVID-19 and One Health and One Welfare

COVID-19, like SARS, MERS, Ebola and HIV, is a zoonotic disease. Three-quarters of new or emerging infectious diseases in humans come from animals. This results from our getting closer with habitat destruction. An extra dimension is the Chinese Government's encouragement of the breeding and sale of wildlife to lift rural populations out of poverty. The 'wet markets' sell wild animals, alongside domestic animals. These stressed wild animals are likely to shed viruses.

COVID-19, which probably originated from horseshoe bats, was first isolated from a wet market in Wuhan. Wet markets *per se* are not the issue. They can be important sources of fresh food in developing countries. It's the type of animals sold, the level of biosecurity and of hygiene at the markets which matter.

Animals, including peacocks, civet cats ([the likely source of SARS](#)), porcupines, ostriches, wild geese, boar and even tigers are raised in nearly 20,000 wildlife farms across China.

COVID-19 has brought into sharp focus the effect of [the wildlife trade on animal welfare](#), on the devastating impact of zoonotic diseases on humans and on the need to protect the environment. The 2002 emergence of SARS led to strict regulations limiting the wildlife trade. Because of cultural and economic pressures this didn't last long. Similarly, the COVID-19 pandemic has led to the temporary closure of the Wuhan wet market. Wuhan has, for the next five years, totally banned the hunting, breeding and human consumption of wild animals.



Tanya Stephens



But! Numerous exemptions include animals for the fur trade and used in Traditional Chinese Medicine (TCM), as long as it is not used consumed as food. Loopholes allow trade if products are used for science or medicine. This means that cross-species virus transmission might continue as farmers sell their farmed wild animals for TCM; wild animals will still be eaten for imagined health benefits and traders can harvest and sell bat guano as a TCM ingredient.

The global wildlife trade, mostly concentrated in SE Asia, is a multibillion-dollar business. Much of this trade meets the demands of TCM, is behind the illegal trafficking of animals and significantly diminishes wildlife. TCM might account for more than three quarters of the illicit trade in endangered wildlife products – with record amounts of pangolin scales, rhino horns and leopard bones being seized over the past five years. TCM, a key pillar of the country's Belt and Road initiative, is booming in China. The total traditional medicine market in China is predicted to ["rise to €96.2 billion in 2025"](#), providing a lucrative market for these products.

In a positive move, [the Chinese have taken the pangolin](#) (the world's most illegally traded mammal) off the official list of accepted traditional medicines. This is praiseworthy, as TCM has driven pangolin close to extinction. What about other animals and preventing the next pandemic?

China's contrary response to its and the world's COVID-19 pandemic is a missed opportunity to improve animal welfare, to stop legal and illegal wildlife trade, to put an end to the use of animals in TCM and to raise concerns about the environmental and infectious impacts of habitat loss.

Tanya Stephens, BVSc (USyd) MSc IAWEL (Edin) MANZCVS (Animal Welfare).



FSM Executives in the Media

Ineffective COVID-19 cures, 5G conspiracies, Traditional Chinese Medicine and the World Health Organization (WHO) are some of the topics the FSM Executive was interviewed about or published about since the last newsletter.

- * [We cannot wait two weeks - we must go into lockdown now for the sake of our healthcare workers](#)
- * [We must take social distancing rules seriously, or pay a terrible price](#)
- * [Ditch the mixed messages and show conviction](#)
- * [As schools return, tests must find 'silent spreaders'](#)
- * [Coronavirus 'exposing deep flaws' in Australia's medical device regulation](#)
- * [Chaotic moment a face-tattooed father is separated from his children as police arrest him during an anti-lockdown protest](#)
- * [Hundreds of Byron Bay protesters ignore social distancing to protest the installation of 5G in their town - over ridiculous conspiracy theory it could lead to a coronavirus outbreak](#)
- * [Majority of Australians think China is covering up COVID-19 infections while one in eight believe Bill Gates and 5G coronavirus conspiracy theories](#)
- * [Cops issue warning to anti-vaxxers planning protests in Melbourne's CBD in defiance of 'absurd' lockdown laws and 5G conspiracy theory](#)
- * [Outrageous moment a 5G protester in the hippie capital of Australia walks into a truck and pretends to be knocked out in front of police - prompting frantic screams from other demonstrators](#)
- * ['Complete nonsense': Brainwashed conspiracy theorists who believe coronavirus is linked to 5G internet are blasted by Australia's chief doctor](#)
- * [Why worried Australians in self-isolation are searching for bizarre 5G conspiracies - as medical experts say the theories are 'dangerous nonsense'](#)
- * [Anti-5G protester SPITS on a postman delivering mail after hundreds turned up for a demonstration in breach of coronavirus restriction](#)
- * [Telstra trolls 5G conspiracy theorists who claim the wireless technology causes coronavirus with one hilarious Facebook post](#)
- * [Flock of Angry Birds Destroy a 5G Tower by Ripping Out Wires With Their Beaks](#)
- * [Coronavirus 'bleach' cure banned in the US, still selling in Australia](#)
- * [COVID-19 Scams – ABC update on MMS Australia](#)
- * [Church in Australia selling bleach as a coronavirus treatment fined \\$151,200](#)
- * [COVID-19 Scams: Pulsed Electromagnetic Field Therapy \(PEMF\)](#)
- * [Anti-vaxxer footy WAG is slammed for her 'ignorant and dangerous' claims coronavirus is 'like a common cold' - and the search for a vaccine a 'SCAM'](#)
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Want to be a 'Public Health Activist'? The 'Whack-a-mole (WAM)' project needs your help! Developing university students' skills in critical thinking, research and in understanding our regulatory system, this project needs to be provided with more advertisements that may be making questionable therapeutic claims.

If you see any therapeutic goods or services making outrageous claims - don't get angry, get emailing! Send the links or copies of advertisements (and where and when they were published) to our CEO, at scienceinmedicine@bigpond.com





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A SPECIAL REPORT FROM EDZARD ERNST

The prevalence of serious side-effects of SCAM products is high

The objective of [this study](#) was to identify adverse drug reactions (ADR) associated with the use of so-called alternative medicine ([SCAM](#)) in Malaysia and to define factors which are associated with the more serious reactions. For this purpose, all ADR associated with the use of SCAM products (including health supplements) submitted to the Malaysian Centre for ADR Monitoring, National Pharmaceutical Regulatory Agency over a 15-year period were reviewed and analysed. Multivariate logistic regression analysis was performed to identify predictors of serious ADR.

From a total of 74 997 reports in the database, 930 (1.2%) involved SCAM products. From a total of 930 reports, 242 (26%) were serious ADR with 36 deaths. Six people died as a result of taking the SCAM, while another 30 cases were possibly associated with the SCAM products. Among the 36 mortality cases, adulterants were detected in 30% of cases. Examples of adulterants were dexamethasone, avanafil, nortadalfil and banned drugs such as phenylbutazone and sibutramine



Edzard Ernst

About a third of the reports involved used SCAM products for health maintenance. Most (78.1%) of the ADR reports implicated unregistered products with 16.7% confirmed to contain adulterants which were mainly dexamethasone. Of the 930 reports, the ADR involved skin and appendages disorders (18.4%) followed by liver and biliary system disorders (13.7%). The odds of someone experiencing serious ADR increased if the SCAM products were used for chronic illnesses (odds ratio [OR] 1.99, confidence interval [CI] 1.46-2.71), having concurrent diseases (OR 1.51, CI 1.04-2.19) and taking concurrent drugs (OR 1.44, CI 1.03-2.02).



The authors concluded that *the prevalence of serious ADR associated with SCAM products is high. Factors identified with serious ADR included ethnicity, SCAM users with pre-existing diseases, use of SCAM for chronic illnesses and concomitant use of SCAM products with other drugs. The findings could be useful for planning strategies to institute measures to ensure safe use of SCAM products.*

The authors also point out that underreporting of ADRs remains a major ongoing issue in pharmacovigilance. Many SCAM consumers may not be vigilant or may be unaware of ADR they experience due to misconceptions on the safety of SCAM products. Most doctors rarely ask their patients about the use of SCAM.

To this, I would add that SCAM providers do their utmost to give the impression that their products are natural and therefore safe. Furthermore the press is far too often perpetuating the myth, and the regulators tend to turn a blind eye.

I expect that some readers of this post will now point out that the rate of SCAM-related ADRs is very small compared to that of conventional drugs. They would be correct, of course. But they would also miss the point that the value of a treatment is not determined by its risk alone. It is determined by the risk/benefit balance. Where there is no effectiveness, this balance is negative, even if the risk is tiny.

So, now let me challenge the defenders of SCAM to name a few SCAMs that are demonstrably associated with a positive risk/benefit balance.

New Book by Edzard Ernst!

More than 50 million websites and 50,000 books (listed on Amazon) promote SCAM. That is just the tip of the misinformation iceberg. So it is not surprising that many believe that natural interventions offer a safe, effective and cost-effective alternative to proven medical treatments. Australians spent AUS\$3.9bn on SCAM in 2016. Is everyone

using them misguided? Are they being fooled or are they fooling themselves? If it “works for you”, does it really matter?



His new book [Don't believe what you think](#) is a collection of 35 easy-to-follow concise essays about SCAM. Each addresses one commonly held belief. The four themes are: “Don't believe what you think about ... ‘yourself’, ‘SCAM’, ‘practitioners’ and ‘research’”. Subtitled “Arguments for and against SCAM”, the book both exposes and challenges popular arguments supporting unproven or disproven interventions with facts, figures, plenty of real-life examples and several role play discussions.

If you want to reduce your chances of making poor health care choices or you want to improve your critical thinking skills, this aptly named book has much to offer.

[Click here to order the book from Amazon](#)



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