The dangers of dogma in medicine

As yet in Australia, there is no systematic provision of reliable guidance for practitioners

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doi: 10.5694/mja11.10866

> Physicians are quite as intolerant as theologians. They never had the power of burning at the stake for medical opinions, but they certainly have shown the will.
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> Harriet Beecher Stowe, *Little foxes* (1865)[1]

In a world populated by rapid-diffusion media, varied cultures, widespread literacy, extraordinary means of communication and media veneration of the might of the scientific method, one might expect that the "marketplace of ideas" would be extraordinarily open, lively and free from censorship or restrictions. In such a world, dogma would fail to develop roots and could not survive. Evidence would triumph and, in its absence, both experts and the broader citizenry would hold on to healthy doubt. In such a world, one might expect that medicine would shine like a beacon of open-mindedness and acceptance of new ideas and that it would foster the development of challenges to operative paradigms. Finally, one might even expect that we, the doctors, aware of the course of science, would know that all the dogmas of today are destined to be footnotes in the annals of the history of medicine. Alas, it is not so. We are not very good at letting go of dogma.

There are several potential explanations for medicine's persistent love affair with dogma. First, perhaps, is the fact that it is difficult to advocate major medical or surgical interventions by explaining to patients that serious uncertainty surrounds such decisions. Thus, doctors need "internal dogma" to function. Imagine a cardiac surgeon saying to a patient: "I intend to perform a bypass operation on your coronary arteries and intend to do it without using the heart–lung machine because I believe (internal dogma) it is a better operation". Then imagine him saying: "Actually, in a large trial in the USA, more people having surgery without the heart–lung machine had worse outcomes than those who had surgery using the heart–lung machine.[2] But, look here, that's the way I was taught and I am a better surgeon than those US guys. Trust me. I will do a better job". Not many patients would front up for the surgery next week. Or imagine an intensive care doctor saying to a mother: "Your child has an infection and low blood pressure. I am going to give him a whole lot of intravenous fluids because we know (internal dogma) that's going to make him better"; or, "Look here, there has never been any comparative study of giving or not giving lots of intravenous fluids to children with low blood pressure and infection, and a recent study in more than 3000 children in Africa showed that it increased their chance of dying by 50%,[3,4] but, hey, trust me, let me do it, that's the way I was taught and Aussie kids are made of sterner stuff". One wonders how many mothers would ask for a second opinion.

The cognitive "illusion of knowledge" also plays a role. We have to believe we know the answer and that there is only one answer, the one we have. To accept that we do not know the answer, or that other people might know the answer while we do not, is emotionally challenging and calls into question our very professional essence. Best to believe that what we think we know is actually true. As Thomas Kuhn[5] would have it, at any time in history we operate within "paradigms", the "soft" (but often strongly enforced) dogmas — that blood-letting saves lives; that

lobotomy cures mental illness; that radical mastectomy is necessary to cure breast cancer;[6] that immediate fluid resuscitation will save lives in patients with penetrating torso injuries;[7] that early oral feeding after colorectal surgery is dangerous;[8] that tight glucose control will save lives in intensive care patients;[9] and that fluid resuscitation will save children with severe sepsis.[3,4] We use such paradigms as totems and make challenging them a professional taboo.[10]

Dogma is further protected by the emotional impact of physiological gain. Large randomised controlled trials that test effects on major clinical outcomes take years to complete and are difficult and expensive. Every day, however, doctors can see that something "works" because it changes physiology in front of their eyes. Thus, they can see the immediate physiological gain but are blind to the long-term consequences.[11,12] Alas, the link between physiological gain and final outcome is tenuous, to say the least.[3,4,6,11,12]

Dogma probably protects patients from rogue behaviour. We need to make sure that not all treatments are allowed. Rules (dogmas) do exist for a reason. In 2011, it is not acceptable to treat meningitis without rapid and appropriate antibiotic therapy, manage myocardial infarction with ST-segment elevation without intervention, ignore persistently elevated arterial blood pressure, and so on. The difficulty, however, occurs in situations where the evidence that a particular action is needed is not so clear, or, just as frequently, when the practitioner is not aware that such evidence even exists.

In a world where the evidence generated every week is substantial, we simply do not know what we do not know. In such a state of permanent flux, it is a lot easier to "stick to what you know" (received dogma) and never change until retirement. This is a problem, because while such a stance might have been justified in 1911, it seems spectacularly out of touch in 2011. Indeed, together with the obstinate adherence to such "medical school" dogma, knowledge management (knowing what one does not know and knowing what one should know) may now be one of the major challenges of modern medicine.

Finally, in a world full of "experts", controversy and opinion, holding on to dogma is reassuring and may well have life-saving functions. Yet, dogma has a dark side and its dangers may be as great as its benefits. Doctors would do well to maintain a degree of cautious skepticism for both bold new fashions and received wisdom, whether generated by the world or by the self. They would do even better to question what they do and see such questioning as an asset. It is everyone's responsibility to find out how to ask questions systematically, find answers from searching the literature, critically appraise the literature and apply the results to practice. At a national level, Australia needs to think of better ways of providing doctors with reliable guidance. Resources need to be allocated to national bodies, such as the National Health and Medical Research Council, colleges and medical schools to make this process of questioning dogma and obtaining up-to-date high-quality evidence a national priority. Unless this is done, dogma will continue to rule medical hearts and minds.

Competing interests: No relevant disclosures.

Provenance: Commissioned; externally peer reviewed.

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