

Flashback on “Evidence-Based Medicine”: the Prussian *Geheim Rath*

Hermann W. Børg, M.D.

The paradigm of so-called evidence-based medicine has been elevated to the status of an obligatory “gold standard” of medical care. In discussions of this concept it may be useful to reflect on an interlude in German medicine and ask whether, at that time, medicine took a path similar to that envisioned by the votaries of EBM, in settings resembling current circumstances.

The interlude occurred during the early Enlightenment. There are striking similarities between the culture of the early Enlightenment and today’s post-modern digital revolution. The Enlightenment was brought about by rapid changes across society and the political structure, and also in philosophy, science, and culture. The changes in various areas reinforced one another and led to the rise of a new structure in culture, society, and politics. The feudal organization of society crumbled, and a new group, the bourgeoisie, started to acquire wealth, power, and more freedom. Repressive authority was weakened, opening the way for the flowering of a free pursuit of science and technology. Books, and thus knowledge, became widely available, allowing for those who had been powerless serfs to take charge of their lives and demand freedom.

This new spirit of freedom spread through Europe like wildfire. The freedom of individuals to chart the course of their own lives, and to decide their own fates, was perceived by those in charge as an increasing threat. Feudal monarchs and lords wanted to continue to dictate as before, to claim the lives and labor of others, and to be the ones to decide for others. Those in power were more interested in keeping and accumulating privileges, rather than in sharing power with the nascent middle class. Therefore, the privileged political class attempted to repress this rising tide of progress through the use of force. Their attempts were unsuccessful, and on many occasions backfired. Soon, the “royalty” and political aristocracy understood that in order to prevent loss of their power, it would be better for them to speak subversively and make some outward gestures as if they embraced the novel, popular ideas. Actually, they sabotaged and subverted the new ideas, surreptitiously misusing them to advance their goals. As a result, an “Enlightened Absolutism” was born.

Enlightened Absolutism affected virtually all European countries: from Spain to Russia. From the medical history point of view, the Prussian model of Enlightened Absolutism offers the most insight into the results of the injection of political power into medical practice. The Prussian political hierarchy was able not just to survive, but thrive, despite being surrounded by enemies who were more numerous, but not so well organized politically. The efficient and disciplined political-military organization that permeated virtually all aspects of life in Prussia played a very

important role in this success. Prussians have never forgotten this important historical lesson. Unfortunately, in their enthusiasm for political hierarchy and all things military, they overlooked that even the most elegant single formula cannot solve, or even explain, all the complexities of life.

At the outset, however, the single universal formula seemed to work very well. The creator of Prussian Enlightened Absolutism, Frederick the Great, made the Prussian way of ruling even more efficient. He combined the old and proven Prussian administrative model with the new French bureaucracy concepts inspired by Enlightenment philosophy.¹ Frederick’s work was continued by his descendants, who also had a keen understanding of methods of sabotaging ideas of freedom in the service of maintaining the status quo.²

A prime example of that Machiavellian way of ruling was continuation of German feudal systems of power by simply giving them an updated form and designating a modern “enlightened” purpose for them, while underneath they remained the same old feudalism.

Some interesting hybrids were created. Those hybrid positions had the stated purpose of improving the lives of the Prussian citizens (consistent with Enlightenment philosophy), but their hidden, real function was maintenance of the supremacy of the ruling political elites. Such was the distinctively Prussian position of *Geheim Rath* (modern spelling: *Geheimrat*). *Geheim Rath* can be translated as secret, or more precisely confidential adviser to the king or emperor.³ This was a position similar to the English privy councilor. Historically, *Geheim Rath* was the title given to the feudal lord (an aristocrat by birth) who served as a member of the royal council (*Königliche Geheimer Rath*). This council was charged with advising the anointed ruler (prince, king or emperor) in the Holy Roman Empire of the German Nation. The “Holy Roman Empire” came into being circa 800 A.D. It included much of Europe, including Italy and parts of France. It was named the Roman Empire, but in 1157, Frederick Barbarossa added the word “holy” to reflect his ambition to dominate Italy and the Papacy. The “Holy Roman Empire” dissolved after its defeat by Napoleon at Austerlitz on Aug 6, 1806.

After the fall of the empire, the councils ceased to exist, and *Geheim Rath* became an honorary title given to loyal political adherents who were aristocrats by birth. Subsequently, Enlightenment philosophy emphasized the merit of the individual rather than his political and family connections. Therefore, the *Geheim Rath* title was often given to individuals who achieved a high level of expertise and proficiency (i.e. “excellence”) in professional fields such as law, medicine, commerce, etc. In keeping with this

the *Geheim Rath* had to be addressed as *Exzellenz* (His Excellency). Many well-known luminaries of science and arts were honored by the *Geheim Rath* title, for instance Johann Wolfgang von Goethe and Gottfried Wilhelm von Leibniz.

In many professional areas the designation of *Geheim Rath* simply denoted excellence in some field. However, in medicine the title of *Geheimer Medizinal Rath* (*Geh. Med.-Rath*) evolved into an extremely powerful position that changed the way Prussian medicine was practiced.⁴ Unfortunately, despite all the stated good intentions, this change was for the worse. Historical analysis of the evolving role of the *Geheimer Medizinal Rath* can be very instructive in the context of current attempts to reform the practice of medicine

Accurate medical knowledge was almost non-existent in medieval times, due to the difficulties of studying biological systems. Medical care was ineffective. Physicians were held in low esteem. Satirical poems and plays were directed at sincere but inept doctors.⁵ In the early Enlightenment this criticism increased, as illustrated by comedies of Molière such as *Imaginary Invalid* or *The Doctor in Spite of Himself*.

Medical study was a major focus during the Enlightenment. In many other areas such as engineering and agriculture, early scientific methods showed spectacular results. Industrial and agricultural advances were prime examples of the positive impact of the philosophy of the Age of Enlightenment. However, the field of medicine lagged behind, to the dismay of Enlightenment theorists. Philosophers had a very hard time explaining the discrepancy. Perhaps the idea that treating patients cannot be compared to making machines or farming did not occur to them. After all, experience is always a better teacher than theory.

The Kingdom of Prussia took the most decisive approach to reforming the medical profession in accordance with the teachings of Enlightened Absolutism.⁶ Prussia had many useful tools for such reforms, including a robust academic system and the position of *Geheim Rath*. Prussian academic medicine operated according to a militarized structure.⁷ However, militarism is not what is needed for scientific study. Lack of scientific knowledge cannot be cured by force. The militaristic organization of Prussian medicine allowed for easy implementation of any type of novel doctrine, without much opposition and with a high degree of compliance. However, academic centers were not spread evenly throughout the country. Moreover, some academics, even Prussian ones, might occasionally show less than expected enthusiasm for the ideas promoted by the Crown. The position of *Medizinal Geheim Rath* was considered a possibility to remedy those problems. *Medizinal Geheim Rath* was not an academic appointment but a political one; it was a state function. Therefore, the person who held this position had powers both inside and outside of academia, and did not need to be based at an academic institution. He was given authority in the medical field comparable to the authority held by the *Komtur* (local commander) of the Teutonic order.

The methods of reform of the Prussian medical system were harsh, but its stated goals appeared to be very noble and benevolent. The main stated objectives were to improve the quality, effectiveness, and affordability of medical care throughout

the kingdom. This was supposed to be done by elimination of “nonscientific” treatment methods through leveraging the expertise of accomplished physicians. It was the classic “the ends justify the means” scenario. Unfortunately, as in many similar situations, those reforms were ill-advised, and carried out by people who did not have any appreciation of unintended consequences.

Medicine in the Enlightenment was a great source of income. Not surprisingly, competition was fierce. In addition to formally trained physicians, the medical field was swarming with self-educated barbers/surgeons, midwives, and druggists. Many of those characters were mere charlatans. However, some of the government physicians were also charlatans, since this was before the age of germ theory. Some of the medical practitioners not anointed by the government achieved a surprising level of professional success, as measured by patients’ satisfaction. They were becoming formidable rivals of the officially anointed doctors. Moreover, independent self-made wealthy men do not make ideal loyal subjects. They tend to question the political and economic status quo. The supposedly merit-based *Geheim Rath* system assured prompt elimination of non-government-anointed physicians.

As noted by Jane Orient, “The trend to rely on expert committees suggests...we are moving toward the Prussianization of American medicine, adopting a system...like the *Geheim Rath* (secret council) system in Prussia at the close of the 19th century. The *Geheim Rath* set the standard of care, and none of his younger colleagues wanted to disagree with him.”⁸

She notes, “There is a lot of pressure to restrict physicians’ treatments to practice guidelines and to methods that have been shown to be both safe and effective in double-blind controlled trials. If we were to insist on this across the board, a huge number of medical treatments that physicians rely on would be ruled out.”⁸

Ordinary medical orthodoxy and peer pressure can have similar deleterious effects, even without committees writing “evidence-based” guidelines. Ignaz Philipp Semmelweis thought cleanliness was important for physicians delivering babies, especially if they had just performed an autopsy. He instituted a hand-washing policy, and the rate of fatal puerperal fever fell from as high as 25–30 percent to 1–2 percent. Ridicule was heaped on him, and he was dismissed from his hospital in Vienna, and rejected by his fellow physicians there. In 1861 he published his major work, on the etiology, concept, and prophylaxis of child-bed fever, but the general reaction was adverse: “weight of authority stood against his teachings.” His dismay and outrage caused him to be committed to a mental hospital, where he died just 14 days later.⁹

In our own day, the Australian physicians Barry Marshall and Robin Warren showed that *Helicobacter pylori* is the cause of most peptic ulcers, overturning medical orthodoxy that declared that peptic ulcers were caused by spicy food, stomach acid, stress, and so on. Dr. Marshall relates, “I had a colleague, Dr Warren.... It was difficult for him to get any of his colleagues to take this seriously... the idea that bacteria could survive in the stomach, when the medical books said they couldn’t survive in the stomach.” Marshall

stated, "It was a campaign. Everyone was against me. But I knew I was right."¹⁰

Modern communications helped him. "One of the top ulcer specialists in the world was in Amsterdam.... I visited him.... He had hinted that there were some funny things going on in the ulcer treatment story that didn't add up to [it all being] caused by acid.... I visited Stanford...and Dallas...epicenters...of the ulcer business. Although they were very skeptical, they did go out and start testing the hypothesis." He also writes, "It's fun to have the rejection letter after all these years."¹⁰

Thousands of patients have been spared years of drinking chalky ineffective liquid, and undergoing vagotomies and Billroth operations. Marshall and Warren were awarded the Nobel Prize in Physiology or Medicine in 2005.

Who knows what will happen if the "evidence-based" guideline-writing drill sergeants take over?

In the past, the results of the *Geheim Rath* system were dismal. Instead of improving medical care, this method of government administration and policing of the medical field caused chaos. It fostered corruption and exploitation of young physicians, who became the indentured servants of *Geheim Rätthe*. The *Geheim Rath* system promptly became fossilized and interfered with any innovations, especially those contradicting government dogma. The only beneficiaries of this system were the political classes of Prussia and their obedient servants. With the dissolution of the second German empire and the downfall of the old elites at the beginning of the 20th century, the position of *Geheim Rath* was abolished. Soon after, German medicine experienced its renaissance.

The idea of "evidence-based" medicine ignores the obvious evidence that when people do have reliable evidence and the means to obtain it, the evidence will prevail over conjecture, deductions derived from flawed premises, and prejudice. After all, we do focus on sterile technique because of evidence supporting germ theory, and we are no longer treating peptic ulcers with vagotomy and antrectomy because of the evidence that *Helicobacter pylori* causes peptic ulcers.

Is comparing *Geheim Rath*-based medicine to EBM a justified analogy? The proponents of EBM would claim that their method is the total opposite of such a system. EBM relies on "objective" evidence, thus outwardly eliminating the highly subjective expert opinions upon which the *Geheim Rath* model was based. However, careful comparison between those two outwardly different schemes reveals many common denominators. In both systems, the decision-making process is being out-sourced. It is removed from the individual patient-physician interaction. The old Prussian principle of "one elegant formula can solve all the problems" is used as a guiding principle of EBM. It is quite ironic, since most of the EBM enthusiasts have not declared themselves to be endorsers of Prussian militarism.

The objectivity of EBM is dubious. The "evidence" itself does not magically write the clinical guidelines. The "expert committees" do. These committees consist of experts who, as human beings, carry their own biases. One could argue that the final product of writing of clinical guidelines is in fact a result of consensus between

variously biased experts' opinions. That is precisely what EBM claims not to be. This is even more ironic, since virtually all EBM promoters would like to enthusiastically endorse the following famous statement about "consensus science":

Let's be clear: the work of science has nothing whatever to do with consensus. Consensus is the business of politics. Science, on the contrary, requires only one investigator who happens to be right, which means that he or she has results that are verifiable by reference to the real world. In science consensus is irrelevant. What is relevant is reproducible results. The greatest scientists in history are great precisely because they broke with the consensus.¹¹

Like EBM, the *Geheim Rath* system was presented to the public and to the medical profession as the quintessence of the new enlightened progressive philosophy. It was supposed to be a benevolent and rational quality assurance system based upon objective merit. In reality, it was a stealthy tool of political, economic, and ideological control. One can only imagine what possible feats of medical progress could have been produced by the talented and hardworking Prussian physicians if only they had been afforded freedom in their pursuit of medical arts and science.

From a historical perspective, the *Geheim Rath* model failed to deliver its purported public benefits. It served the political and economic elites very well, though. What the historical outlook on the EBM will be remains to be seen. But based on the evidence of history, it belongs in the trashcan.

Hermann W. Børg, M.D., is a neuroendocrinology independent contractor at the University of North Carolina School of Medicine at Chapel Hill, N.C. Contact: dr.hermann.borg@neuro-surgery-research.com

REFERENCES

1. Gooch GP. *Germany and the French Revolution*. Longmans, Green; 1920.
2. Van Horn Melton J. Iron Kingdom: The rise and downfall of Prussia, 1600–1947. *J Mod Hist* 2008;80(3):704-706.
3. Von Carrach JP. *Thesaurus Linguarum Latinae Ac Germanicae Scholastico-Literarius: Opera Et Cum Praefatione Isagogica*. Trattner; 1787.
4. Richter AL. *Geschichte des Medizinal-Wesens der Königlich-Preußischen Armee bis zur Gegenwart: ein Beitrag zur Armee-und Kultur-Geschichte Preußen*. Enke; 1860.
5. Mandel O. *Five Comedies of Medieval France Translated and Introduced by Oscar Mandel*. Dutton; 1970.
6. Neuburger M. *Handbuch der Geschichte der Medizin. Band 2: Die neuzeitliche Medizin*. Gustav Fischer Verlag; 1903.
7. Büsch O. *Handbuch der preussischen Geschichte: das 19. Jahrhundert und Grosse Themen der Geschichte Preussens*. Walter de Gruyter; 1992.
8. Orient J. Heterodoxy, peer review, and the medical boards. *Med Sentinel* 2000;5(3):104-105.
9. Zoltan I. Ignaz Philipp Semmelweis. Biography—German-Hungarian physician. *Encyclopaedia Britannica On-Line*; 2014. Available at: <http://www.britannica.com/biography/Ignaz-Philipp-Semmelweis>. Accessed Aug 10, 2015.
10. Barry Marshall Interview. Academy of Achievement. Available at: <http://www.achievement.org/autodoc/printmember/mar1int-1>. Accessed Aug 10, 2015.
11. Crichton M. Aliens cause global warming. Speech at the California Institute of Technology, Jan 17, 2003. In: *Three Speeches by Michael Crichton*. Science & Public Policy Institute Commentary & Essay Series. Available at: http://scienceandpublicpolicy.org/images/stories/papers/commentaries/crichton_3.pdf. Accessed Aug 10, 2015.