PSNet
PATIENT SAFETY NETWORK

In Conversation With… Bernardo Perea-Pérez, MD, DDS, PhD

August 1, 2016
In Conversation With… Bernardo Perea-Pérez, MD, DDS, PhD. PSNet [internet]. 2016.
https://psnet.ahrq.gov/perspective/conversation-bernardo-perea-perez-md-dds-phd

---

Editor's note: *Dr. Perea-Pérez is Director de la Escuela de Medicina Legal y Forense of Facultad de Medicina at the Universidad Complutense de Madrid and Spanish Observatory for Dental Patient Safety (OESPO). He is perhaps the world's leading expert on patient safety in the field of dentistry.*

Dr. Robert M. Wachter: What are the main safety issues in dentistry?

Dr. Bernardo Perea-Pérez: There are several potentially significant problems in dentistry. First, there are problems with the methods of disinfection and sterilization of dental instruments, often due to lack of supervision by the dentist in charge. Second, the inadequate management of postsurgical infections. In our Spanish Observatory for Dental Patient Safety database, we have five cases of patients dying, and many others with important harm. Third, an excess number of radiological tests. Studies have warned of a possible association between excess dental X-ray tests and a greater probability of developing head or neck tumors, especially in childhood. Maybe the fourth concern is problems related to drug interactions, especially in elderly people. And the last one would be damage from treatments with dental implants. The large increase of these types of treatments has led to the emergence of risks not seen previously. I am referring especially to damage to the lower dental nerve and the maxillary sinus, and sometimes even more serious processes such as osteomyelitis and osteonecrosis. According to our Spanish Observatory database, dental implants are the treatments that produce the most adverse events.

RW: How does information technology help patient safety in dentistry and how does it hurt?

BPP: I believe that new information technologies will make a significant improvement in patient care and safety. Computerized health records will help us to a point with erroneous prescriptions, updated clinical records, and information about the medications taken by patients. It will also allow us to share clinical information with less chance of error. On the other hand, the main problems are dangers to the privacy of health data and the possibility that once an error in the information is entered into the system, others accept it without verification.

RW: We're seeing that in medicine as well. The patient safety field in general has focused on systems that have problems rather than individual clinicians. Is that the same trend and philosophy that you have in dentistry?

BPP: Yes, the philosophy is the same. A system with latent defects generates risks that sooner or later end up causing damage. But the care context is different. A dental team is much smaller, and usually the person in charge of the organization of care and the person who performs the treatment is the same person?the dentist himself. In this situation, it's more difficult to avoid personal responsibility.

Our research group has analyzed many dental offices, and our results show that defects in the dental care system are very common. The problem is that, unlike hospitals, dental offices are not supervised until a serious adverse event occurs. A good example is the problem with disinfection and sterilization procedures. The usual situation is that the dentist teaches the procedure to a dental assistant, and afterward he's not concerned anymore. The process frequently degrades over time without the dentist's knowledge. These problems can go unnoticed until a serious adverse event happens, such as the spread of viral disease. In our database, we have three documented cases of transmission of hepatitis, with one death from acute liver damage. We are trying to develop systems that can be applied within the clinic itself to check periodically the correctness of these procedures.

RW: Have you seen any major differences between dentistry's approach to patient safety and medicine's?

BPP: Of course. I think there are many important differences. The harm produced in dentistry is generally less severe than in hospital medicine. But millions of dental treatments are performed daily in the world, and many of these treatments will cause adverse events, some of them serious. Another feature is that dental patients are always ambulatory. This makes it difficult to become aware of adverse events and to follow them up properly?especially adverse events related to medications. There is a great dispersion of dental care, which makes it difficult to collect data on adverse events. We hardly know what happens in each of the dental offices. Another key feature in dentistry is that dental care is fundamentally private, at least in Spain. There is fear that reporting adverse events might have some repercussion on the commercial profits of dental clinics. Finally, the potential for undertaking education campaigns that reach our dentists is limited due to their widespread dispersion.

Actually our research group has not really invented any new methods in patient safety. We have applied and adapted the consolidated knowledge on patient safety in hospital medicine to the field of dental care.

RW: You've noted that most care occurs in small offices. One of the differences is in those offices many patients get anesthesia administered by the dentist him or herself. What are the safety issues that may come from the anesthesia?

BPP: Here in Spain there were several problems with general anesthesia and deep sedation in dental treatments. The result was the prohibition of the use of inhaled and intravenous agents in dental offices, except in centers that meet the strict requirements of equipment under supervision of a medical specialist in anesthesiology. This also applies to the use of inhaled nitrous oxide. A dentist in Spain can use locally injected anesthesia and can administer doses of oral, but not inhaled, sedation to the patient. I think this is unreasonable. For me, this prohibition is an example of overreaction by the authorities. I believe that

adequate control is better than an outright ban.

RW: What policy would you implement around office-based anesthesia? What do you think would be the appropriate limits on what dentists could do or not do themselves?

BPP: Yes, I think it's reasonable to allow them to use local anesthesia and inhaled nitrous oxide. I think the use of intravenous agents must be limited to centers with a strict requirement and under supervision of an anesthesiologist.

RW: I see. So nitrous oxide and things like that would be okay.

BPP: Yes, nitrous oxide is not more dangerous than oral sedation.

RW: You have been a leader in dental education in patient safety. Tell us about some of the things you have done and how well they've worked.

BPP: Our research group believes that the best investment is in patient safety education. The aim is to introduce the criteria for patient safety at the same time that students learn the clinical criteria used in making decisions. We think the principle of patient safety must be learned at the beginning of health education. We try to link these values of patient safety with the ethical principles that should guide any health practice. Of course the students know the legal and economic importance of avoiding adverse events. But we would like the main motivation that drives them toward patient safety to be an ethical motivation. And, in our experience, students understand this ethical motivation better anyone else. We use this methodology with medical, dentistry, and nursing students with good results.

RW: Can you briefly describe the legal system in Spain as it pertains to malpractice? Is it the same kind of pressure that we have in the US?

BPP: We have a problem because we have developed anonymous reporting systems, but the judge can ask us for information about an adverse event that has been reported in these theoretically anonymous systems. That's a problem we have not resolved.

RW: Are you saying that in your system someone may report a case to your database anonymously and the judge or legal system could ask for their identity?

BPP: Theoretically, yes. Not in practice, but the risk is there.

RW: Do you have a sense of how different things are in Spain versus in the US in the field of dental safety?

BPP: Clearly, the maximum impulse has been coming from the US. But it's also true that the rapid transmission of information makes the working methods spread quickly worldwide. Spain has a system of universal free health care. Hospitals are very hierarchical. So once professionals are convinced on the usefulness of a particular measure, it will be adopted quickly. Here, the medical and health authorities began to show interest in patient safety in approximately 2004 following the efforts of the WHO, and the first general study of hospital adverse events was made in the year 2005. I sincerely believe that patient safety in Spanish hospitals is quite good.

In Madrid, all hospitals have what we call functional unit risk management, which studies the adverse events reported anonymously in each hospital. It also proposes measures for improvement and for monitoring current compliance. For example, the Hospital Clinico San Carlos, which is the main hospital of the city where I work, has a very active functional unit risk. In 2014, they received almost 2000 notifications by anonymous reporting of adverse events through the hospital's intranet. And we are talking about a hospital with 800 beds. I think we have a reasonable level of patient safety. But the major economic crisis we've had since 2007 has cut the health budget, and this has affected patient safety programs.

Regarding dental practice, I don't have data to compare the situation here with the situation in the US. The main source of information about dental adverse events in Spain is the Observatory database, with more than 700 adverse events collected and studied so far. However, this database has a significant bias in that it comes from judicial sources. We are aware that the information we have is just a small part of the total. And we have more work to do here in Spain on dental patient safety.

RW: Is there an accreditation process? Is there someone who certifies the dental office as being safe?

BPP: The system of accreditation is done by the regional government. They look for the correct practices of sterilization and the management of different devices. But we know that a lot of mistakes are out of the control of these authorities. So we would like to develop an accreditation system that is really useful for these kinds of situations.

RW: Tell us about areas where you think you've made good progress in the last few years.

BPP: It's clear to me that our campaigns to improve safety in surgical procedures, prescription drugs, and control of nosocomial infection have been useful not only for results but also because they have made sure that health care providers are really aware of the problem. Though dentistry is quite delayed compared with medicine. Now we have begun to convince dentists that patient safety is important for their patients and also for them as health professionals. We are beginning to apply in dentistry the methodology that has been applied in medicine for years: reporting systems, surgical checklists, drug-related alerts, and adequate analysis of adverse events when it happens and so on. We really have a lot of work ahead of us.

RW: Where do you think all of this is leading over the next 5 years or so?

BPP: I'm sure the progress will be rapid in the coming years. Once you know the problem and how to mitigate it, I think it's impossible to stop the process. In the dental field, we expect electronic clinical records to allow us to reduce errors associated with prescription drugs, especially those related to allergies and interaction with other drugs. I also hope that we'll be able to determine the right indication for radiological tests and to avoid the unnecessary ones, and that all disinfection and sterilization procedures are effectively controlled. Finally, I believe that the only way to achieve these goals is for prestigious institutions to accredit dental offices that comply scrupulously with the instructions. I believe in the personal responsibility of dentists, but I believe more in personal responsibility controlled by external institutions.