Doctors are taught to diagnose and treat health problems. Within these margins, most clinicians fulfill this role with their patients very successfully. However, the traditional role of the doctor is carried out within a broader, historical, political and social context where the diagnosis and treatment of system failures are as important as the clinical interactions with individual patients. A doctor’s ability to improve health outcomes in an increasingly complex milieu will always be challenged. Therefore, the doctor must be willing to understand and influence this wider framework. Such understanding can be achieved by engaging in the emerging science of quality improvement, where the approach to improve quality and assess this attitude has brought us, in spite of contradictions and paradoxes.

A paradox is a statement that apparently contradicts itself and yet might be true. Most logical paradoxes are known to be invalid arguments, but are still valuable in promoting critical thinking. More commonly, the word paradox often refers to statements that are unexpected or ironic, such as “the paradox that standing is more tiring than walking.”

Examples of a paradoxical effect or reaction might be when: (1) people with unrelenting or ominous disabilities report experiencing good or excellent quality of life, but to many outside observers, these individuals seem to live an undesirable daily existence; (2) the effects of a certain drug are opposite to what is normally expected, such as allergy or even anaphylaxis; (3) pain relief medication causes increased rather than decreased pain; (4) a surgical procedure produces a scar, such as a keloid rather than perfect incision closure; and (5) an orthodontist expects his or her treatment to produce a certain reaction or tooth movement, but the resultant outcome is contrary to what is expected, for example relapse or resorption.

Paradoxical effects are the aberrant, abnormal consequences of treatment rather than the normal, expected results, or rather the paradoxes of quality of treatment. They are the “scars” of medicine, dentistry and orthodontics. Can they be predicted? Does it mean that the treatment was improper? Sometimes yes, but most times no. It is up to the clinician to diagnose properly and even then, poor results can occur in spite of good judgment, proper treatment and excellent diagnosis. Unfortunately, our profession is not an exact science, which is not an excuse, but a fact!

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