

# Electronic Medical Records in Orthopaedic Surgery

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Many physicians are confused by all of the discussions on Electronic Medical Records.

There are 189 CCHIT Certified Electronic Medical Records; many are full Practicing Management Systems that have EMR components. "Experts" give an abundance of lectures on the matter, and most physicians have surely experienced a few of them. Clinicians have also heard horror stories from colleagues who were convinced to purchase the wrong product, or worse, who had no choice in the matter. How should doctors go about selecting the right EMR for an orthopaedic practice?

## *EMRs are Not About Computers*

Indeed, many physicians consult with computer experts about what EMR to obtain. However, EMRs are not about computers. EMRs are about the medicine a medical doctor uses every day, and unless the expert is a fellow orthopaedist, or at least a practicing physician who has used several EMRs, it is the blind leading the blind.

Without question, the best judge of an EMR continues to be the doctor who is considering the purchase of one. Therefore, the best possible advice that we can give is to make time to perform the selection personally, and after viewing no less than ten different products. After viewing the presentations on many different EMRs, the physician will understand the issues, strengths and weaknesses of each product and why each might work out for the practice.

Many EMR companies will not allow a test-run of the software, but this does not mean that their products are of bad quality. On the contrary, the better and more powerful EMRs require quality training without which one cannot truly judge the program. After viewing each demonstration with great care, one should not hesitate to review the finalists a second and even a third time.

The physician should demand references and, if possible, take the time to visit them personally. Only then does the doctor begin to understand the issues that will make such a major impact on his personal and professional life. An EMR can be a physician's best friend or his worst nightmare. Most doctors have the scientific and technical background needed to do excellent evaluations and make very intelligent decisions.

## *No Such Thing as Orthopaedic Surgery Templates*

Because no "standard" orthopaedic surgeon exists, there is also not one "standard" orthopaedic template. Not only is orthopaedic surgery divided into many diverse fields — back, hands, feet, sports, industrial, motor vehicle accidents, the list is endless—but also within each field, no two doctors think or practice medicine the same way. Medicine is, after all, very much an art. Each doctor is unique in the way she practices.

With templates there is also an inverse relation between the EMR's speed of use and its flexibility. The more one uses templates, the more tedious they become. One must go through a large number of pick-lists in order to document each case resulting in computer verbiage easily perceived by colleagues. Most importantly, a template cannot help the orthopaedist do more than chart and end up with a dead record. Templates simply do not take full advantage of what a computer can do on the doctor's behalf. Finally, templates may be subpoenaed to Court and made to represent the doctor's entire thinking. This is legally dangerous to any practitioner who appears to fit patients into molds rather than thinking through each case.

## *Concept Processing*

Concept processing is a powerful alternative in Electronic Medical Records. Concept Processing software engine is a neural network program that finds the closest encounter that the provider has ever dealt with in relation to the one he is about to chart. The physician edits the relevant changes by typing or using speech recognition and is instantly finished. This generates an almost instant and highly accurate documentation, and any changes made are memorized by the software. Thus, the more the physician uses the program, the faster and smarter he can document. The system generates not only the clinical chart but also the related prescriptions, letters to referring providers, admitting orders to the hospital, procedure reports, instructions to patients, even superbills—all learned from the past and all in the same breath as each clinical note.

For every practitioner there is a bell-shaped curve representing a frequency distribution of cases seen in the past. This distribution of cases is illustrated in Exhibit 1. Some cases are so rare that the practitioners has most likely never handled them before. The majority of other cases becomes more repetitive and is found closer to the mean of the curve. This allows the software to retrieve your own text from similar ones you have written in the past.

The Concept Processor encapsulates "units of thought," meaning words representing the user's personal medical concepts (a description of a physical finding, a procedure, a patient instruction, a given prescription, etc.), and then links each unit of thought to the others within the encounter, similar to the way the mind works. The Concept Processor also helps the physician practice better medicine by allowing her to use the chart as a pilot uses a check list—to ensure that nothing is forgotten or overlooked. The system is coincidentally learning and teaching constantly.

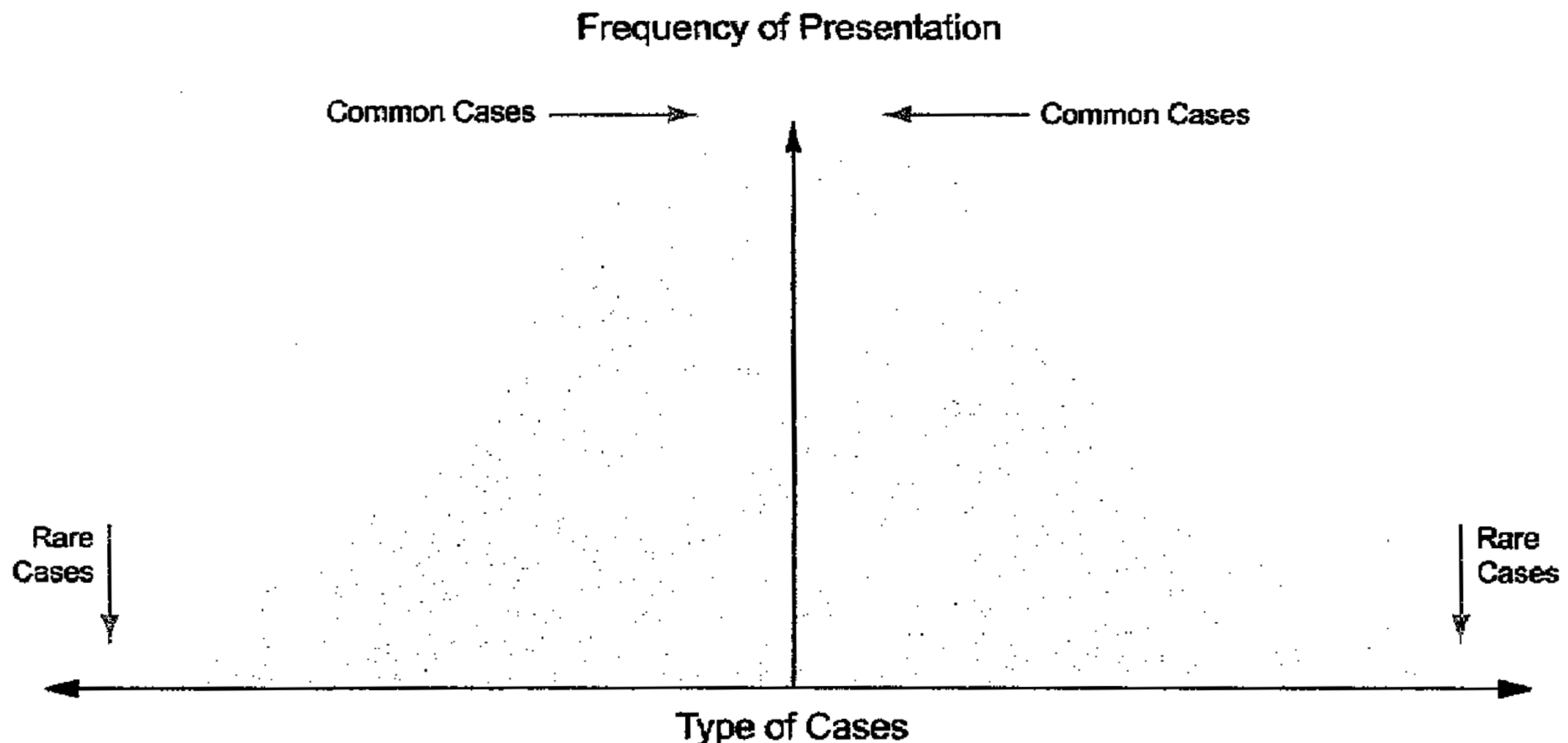
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Exhibit 1. Typical distribution of patients seen in a physician practice



#### In Search of Flexibility

Dr. David S. Huang, M.D., a hand surgeon with 32 years of experience, practices with two other orthopaedists in a multi-specialty clinic. Huang felt it was necessary to find an alternative to his long documentation process. However, having used various EMRs, he was wary of their oftentimes restrictive natures. "EMR systems can offer huge benefits. But if you're not careful, they can end up directing how you practice medicine," says Huang. "Too often these systems reflect the thinking of their creators—not the physicians using them."

After experimenting with various systems, Huang became aware of the limitations that came with using many of these EMRs. He found that the standard, template-based EMR posed restrictions on his own language expression and charting.

"Most EMRs rely on standard forms for particular types of patients and pathologies, as well as structured language to describe the treatment process. Often these templates automatically populate with information. In some cases, physicians choose information from a 'pick-list' of possibilities," he explains.

The dominant theme in his experience with template-based EMRs was that they were restrictive—from the charting to the treatment options given. "I tried numerous EMR programs of this type, but I found them difficult or impossible to use," said Huang.

Huang illustrates the complications brought on by template systems that must first be altered before they are ready to use. "If you're in the middle of documenting a case and the template does not present you with an appropriate option, you're stuck. To complete the chart, you need to navigate through a complicated template editing process and then start the documentation all over again." To be efficient, a physician must envision all the possible scenarios for a diagnosis in advance and set them up. "For many busy doctors, that's extremely time consuming and complicated," he says.

Dr. Andrew W. Jeffers, M.D., an orthopaedic surgeon who has been in the practice for 12 years, currently runs a successful solo practice in Oxnard, California. Jeffers specializes in a wide range of cases—from clavicles to feet—and runs his practice with only one secretary and a part-time employee. With the time-saving attributes of his EMR, he manages both clinical and administrative aspects of his practice. Aside

from increased efficiency and reduced overhead, it was crucial, as stated by Dr. Jeffers, "to implement an EMR program that would reflect my own ideas, knowledge and style of practicing medicine."

He explains further, "What sets apart the Concept Processor from the standard, template-based EMR is that I can input my own information. The final result is that all of my charting is expressed in my own language, not something that sounds foreign to me. I am definitely charting my own way." A key benefit of concept processing, according to surgeons, is that it never forces a choice of information that is not completely accurate, because all elements included in the case can be altered on the spot. "One of the main benefits of this type of EMR is that you are certain to be accurate because it continually offers appropriate prompts and upon discovery of an error, I can make the change at that very moment. And that is a unique and extremely useful feature," notes Jeffers.

In conclusion, bear these thoughts in mind when considering EMR systems:

1. Do not delegate the task of selecting your EMR.
2. Keep in mind that templates are not the only solution. Evaluate alternatives.
3. View at least ten different products before making your selection.
4. Demand references and visit the clinics if possible.
5. Most importantly, you as a physician have the training, education and intelligence necessary to make a selection on your own. You should feel very confident of your choice.

*Richard Low, M.D., is the Founder of Praxis EMR. He received his M.D. degree from Yale Medical School in 1976, and started his medical career in the field of Emergency Medicine. For the last ten years of his practice, Dr. Low shared his passion for computers by developing Praxis EMR ([www.praxisemr.com](http://www.praxisemr.com)) and practicing medicine at the same time. After twenty years of treating patients, Dr. Low stopped practicing medicine in 1998 and dedicated himself full-time to the business of Praxis development. Please send inquiries to [richlow@infor-med.com](mailto:richlow@infor-med.com).*

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