Great-Grandfather of CPOE

While high costs put cell phones out of reach, one vendor was selling an order entry system ahead of its time.

by Vince Ciotti

A look back 20 years ago to “U.S. Healthcare” magazine for September, 1989:

Cover Story: Cellular Phones—from Gimmick to Big Business. A color photo of a man in his car on a cell phone looking up a phone number on his laptop—pretty daring concepts back in 1989, when both were just being pioneered. Hard to imagine in this day of the ubiquitous iPhone and BlackBerry that the cell phone was first introduced in Chicago in 1983. Indeed, I remember getting a call from Sheldon Dorenfest on a cell phone right about that time, so he must have been one of the “early adopters.” Shelly was on his way downtown on I-294 while talking to me on his portable phone; the quality was pretty poor, our call was dropped several times, but we did manage to communicate. The article goes on to describe the biggest drawback then: cost (what’s new?). The author lamented the fees of $35 cents a minute, a base monthly fee of $150, and the phone itself (a large “bag” style) costing about $500.

Featured Ad: TDS Healthcare Systems Corporation—a two-page, four-color spread extolled the virtues of TDS (Technicon Data Systems), whose HIS was claimed to be used by more than 100,000 physicians and nurses every day. What’s more amazing, in 1989, the system was already nearly two decades old, having been created circa 1971 by Lockheed at El Camino Hospital in Mountain View, Calif., as the first “Medical Information System” (MIS). Lockheed sold the system to Technicon, the name that stuck, even though the firm changed hands a hundred times, finally ending up with Eclipsys as “TDS 7000.” There are still a handful of hospitals running it today, proving the power of its breakthrough physician-centered system. There was no “CPOE” acronym in those days, but TDS was used by physicians to enter orders, thanks to several innovative capabilities:

• VMT (Video Matrix Terminals)—featuring color screens, amazing in any age when most data entry was via keypunch cards, and the few CRTs like IBM’s 2770 family offered any color you wanted as long as it was green. Color was used to highlight key fields, flash error messages, and delineate prompts from data being entered. Huge letters must have been 14 point, but were actually easier to read for aging eyes.

• Light Pens—long before Steve Jobs stole the idea of a mouse from Xerox’s PARC, Lockheed engineers built a small pen-like device with a light on the end, which physicians used to select menu items on the screen. Actually more intuitive than a mouse, comparable to the touch-screen of today’s iPhones: what you touch was what you get.

• Matrix Coding—users actually got to build their own screens, a daring concept in an age when COBOL was as rigid as the green-bar paper printouts used for reports. Nurses and med techs got to design their department’s order entry screens for assessments, care plans, lab tests, meds, radiology, etc.

• Order Sets—physicians could design their own set of common orders that varied with their specialty and preferences for common lab tests, radiology procedures and medications. Again, in the ’70s, this was an amazing capability compared to the fixed screens of the few clinical competitors like HBO’s MedPro, also re-marketed by SMS as “ACTion” (All Communication Transmitted Immediately).

Market Share: a feature article by Dorenfest gave the results for 1988 of his “Dorenfest 3000” survey of the nation’s largest hospitals (over 150 beds). The results:

• Hardware was dominated by IBM with 1,400 installations (a mix of mainframes and AS/400 minis), followed by 200 on Data General (MV minis), 150 on DEC (PDP & VAX), 130 on HP (3000 series), 115 on NCR and 100 Unisys.

• Software—mainly patient accounting in those days, was dominated by Baxter with 320 (Dynamic Control & JS Data), followed by 120 on HBO (IFAS), 100 on IBM (PCS/ADS), 90 on GTE (MedSeries 4), 80 on SMS (FMS in those days — no Invision yet), and 50 on TDS (known as “PAA”).

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