It's a Saturday morning and Chris looks out to his backyard from the kitchen window. Tucked against some trees, he sees the treehouse he bought and assembled for the holidays this past year. The kids talked for months about how much they wanted it and his wife practically made him buy it.

Painful thoughts come back to him as he remembers paying an arm and leg for the Acme SuperTree House at the hardware store. And then having to use all of his holiday PTO trudging around in the snow as he slowly put the seemingly thousands of parts together. He remembers having to deal with customer service because the kit was missing two planks and a set of screws; Acme actually had the nerve to charge him for the parts plus shipping and handling! Then his son got a splinter on the rail and his daughter broke her arm when one of the ladder rungs snapped and she fell. He never saw those pricey emergency department, radiologist, and orthopedist bills coming when he bought the set. Not surprisingly, the kids hate to play on it now.

But his son's birthday is fast approaching and he is asking for a swingset. Chris went to the hardware store yesterday to look at his options and, of course, there would be an ACME swingset. If the packaging can be believed, it will snap easily into the treehouse as an extension for "an all-in-one incredible entertainment experience." Maybe the kids would play with the treehouse more if there was a swingset attached to it. Perhaps they would not play with either. The store also had several other sets including a better priced option which had monkey bars and different kinds of swings. It doesn't directly snap into the treehouse, but Chris thinks he could buy some two-by-fours to make it work.

While the Acme sales pitch of having one easy to install, comprehensive back yard entertainment set is tempting, Chris' experience with the company's product makes him hesitant. If the Acme Tree House Company can't even get tree houses right- should he really invest his time and money into buying their swing set? Nothing other than Acme's own promises suggests that this is a good idea, and he would hate to upset the kids with another subpar product. It might be smarter to buy from a swing set company instead of reliving those past experiences.

What does this story have to do with choosing the best secure messaging vendor?

Perhaps nothing, but what if Acme was your electronic medical record (EMR) company, the treehouse your EMR, the kids your doctors, nurses and patients, and the swingset a secure messaging and communication solution for your Care Team? After all, the EMR probably cost your organization a ton to buy and was painful to implement. You probably were charged for things that you thought should have been included as part of the purchase (reports, HL7 feeds, training, integration, etc.) and your doctors and nurses probably hate using it.

Though the theoretical promises of EMRs included increased provider efficiency, better patient outcomes, and lower costs, the studies on EMRs are overwhelming in how significantly they have failed to live up these expectations. A 10 year study published in Health Services Research found that EMR implementation reduced nursing efficiency by 15-26%.[i] A meta-analysis of physician office practices showed mixed results: in 64% of studies, EMR adoption improved clinician productivity while in 24% it decreased productivity.[ii] A different study from UC Davis suggests that EMRs improve efficiency in procedure heavy specialties while decreasing it in cognitive specialties (e.g. pediatrics, family medicine).[iii] Dissatisfaction with the usability and functionality of EMRs is also increasing: an American College of Physicians study presented at HIMSS in 2013 found that the number of satisfied users dropped by 12% from 2010 to 2013, while the number

of very dissatisfied users increased by 10%. Additionally, 39% of users indicated they would not recommend their EMR to a colleague.[iv]

Unfortunately, the impact of patient outcomes is no better: the same 10-year study in HSR mentioned above found higher rates of patients complications.[1] While the field is still young and data scarce, the Pennsylvania Patient Safety Authority has tracked health IT induced errors over time. Their data shows that EMR safety events grew at a compound annual growth rate of 67.4% over the period 2004 to 2011 and nearly doubled between 2010 and 2011.[v] In the case of the Children's Hospital of Pittsburgh, these events led to the mortality rate increasing from 2.8% to 6.6% in the five months after EMR implementation.[vi] The one area where EMRs were specifically supposed to increase patient safety was medication errors; however, a recent study found that EMRs only caught 53% of fatal medication orders in standardized testing. Perhaps most concerning is the variability that happens from install to install: the same EMR system caught 75% of fatal medication errors at one hospital but only 10% at another.[vii] In all, researchers have documented errors caused by EMR system design flaws, poor usability, inappropriate documentation capture, templating and copy/paste functionality, and EMR clinical decision support.[viii] Perhaps most interesting when contemplating purchasing secure texting from an EMR vendor is the role that EMRs have played in causing errors in the communication and coordination process.[ix]

As with their failure in efficiency and safety, EMRs are also failing to deliver financial benefits. The promise of decreased length of stay with EMR adoption has proven to be unfounded, and the HSR study found that EMR implementation led to 6-10% higher cost per discharge.[x,1] Additionally, there are multiple anecdotal stories of health systems losing tens of millions of dollars due to EMR revenue cycle issues.[xi,xii]

When I am asked if I worry about competition from EMR companies entering the space of secure communication, I respond that I am not. Interestingly, the two EMRs now contemplating secure texting products are the two who have faced the greatest difficulties. It is a mistake for them to divert resources to new product lines, such as secure messaging, prior to fixing the significant problems their core products face. Additionally, there is no reason to believe that they will develop a good communication platform until they understand how to make their development process result in quality products that fit the needs of their users. Importantly, communication is a very different animal with a different set of workflow and technological challenges than record keeping. The one benefit EMRs can provide is a very tight integration; however, with interoperability this advantage is quickly declining. At the end of the day, I think the cliché holds (Fool me once, shame on you. Fool me twice, shame on me) and hospitals will be too smart to buy another overpriced, underperforming product.

About the Authors

Mr. Baxter Webb is the Founder and Chief Executive Officer of MEDarchon. He has extensive first-hand experience in healthcare with over 15 years spent in the clinical setting. He is an honors graduate of the UNC School of Public Health and the Vanderbilt Owen Graduate School of Management. Prior to founding MEDarchon, Mr. Webb led research and development activities for two bioinformatics companies: CP Diagnostics and Proventys. In these roles, he managed the largest study funded by the NIH for pulmonary embolism, gained the first CPT code issued to a commercial entity by the American Medical Association, and led a computerized decision support product through the FDA's 510k de novo process. He holds several patents, has presented research at six different national medical conferences, and has published over a dozen peer reviewed research articles.

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About MEDarchon

When starting MEDarchon, we looked at the shortcomings of EMRs and engineered our development process in such a way as to avoid their mistakes: we worked with care teams to study clinician workflows and built a solution that fit those workflows while helping to remove inefficiency. We also did extensive research on patient safety to fully understand the role that communication failures play in causing medical errors. As a result, we layered in functionality, usability and analytics designed to prevent medical errors caused by communication breakdown. Lastly, we have priced our solution in an affordable, straightforward manner that makes sense and provides a high return on investment. Quarc is the solution that can help healthcare systems improve the outcomes that matter to the business, to the patients, and to the providers.

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