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ReachMD

www.reachmd.com
info@reachmd.com
(866) 423-7849

Reducing Medical Errors at the Bedside

STRATEGIES TO REDUCE MEDICATION ERRORS

ReachMD would like to wish you a happy and healthy new year and with each new year, comes a fresh start. As we look ahead, ReachMD is proud to present this month's special series Focus on Future Medicine.

Reducing medication errors is a global challenge, but the good news is that there are increasingly new and innovative ways; companies are looking to find solutions to error reduction. You are listening to a special Focus on The Future Of Medicine on ReachMD XM160, the Channel for Medical Professionals. I am Bruce Japsen, the Healthcare recorder with the Chicago Tribune and with me today is Gary Konkright. He is chief executive officer of InformMed. InformMed is a company based in Peoria, Illinois focused on medication safety and is developing patents in commercializing new products specifically focused in the medication error solution space. Mr. Konkright comes from a wide range of experienced and technical business startups, venture financing, and technical sales development. He has served as CEO of SmartSignal where he was recruited by the University of Chicago to develop a business model and planned a commercialized cutting edge technology developed at the Argon National Laboratory, held the Bachelor of Science Degree and Aeronautical Engineering from Perdue University and an MBA from the University of Chicago Graduate School of Business. He is also the holder of four US patents.

MR. BRUCE JAPSEN:

Gary Konkright, welcome to ReachMD XM160, the Channel for Medical Professionals.

MR. GARY KONKRIGHT:

Thank you, Bruce. Thanks for having us today.

MR. BRUCE JAPSEN:

Tell us a little bit about your company, InformMed, this new tool they have for the bedside nurse.

MR. GARY KONKRIGHT:

InformMed is a medication safety company, which was brought to market this past February, a product designed by nurses for nurses to assist in the safe administration of medication at the bedside and to reduce the risk of medication errors. Hardly a week goes by now without reading in the newspaper or seeing on the TV of a medication error that's either harmed or sometimes killed a patient in a hospital. This should not be surprising because the Institute of Medicine has been reporting for several years now that more than 1.5 million people in US Hospitals are subjected to a preventable adverse drug event or a PADE annually. These errors have led up to an estimated 7,000 deaths per year. Further, the cost of these errors to the US Healthcare System has been estimated to exceed 3.5 billion dollars. Additionally the ASHP, the professional organization for pharmacists in the US has completed a survey where the number one concern for patients entering hospitals is the fear of being subjected to a medication error. Now since the Institute of Medicine first reported on the prevalence of these types of errors in 1999 and their report called to err is human, hospitals have done a lot to bring technologies into the facilities to reduce medication errors. These technologies range from smart IV pumps to computerized physician order entry systems, electronic medical administration records, and bedside bar-coding and all these technologies when they are lumped together are effectively building a wall at safety to prevent an error from reaching the patient and harming them. They have done great things that are very effective in certain areas; however, there is a hole in that wall and that's the hole that InformMed has developed a product to serve. The hole exists because there are times when there's just not time for a medication order to go through the normal pharmacy system, get checked by the pharmacist, have the volume calculated and dispensed in unit dose by the pharmacist, and delivered to the bedside nurse.

MR. BRUCE JAPSEN:

And this would be unlike an emergency situation or something.

MR. GARY CONKRIGHT:

Exactly, any critical care setting where the patient is deteriorating rapidly and there is just not time to go through that process, the nurse has to do what the pharmacist normally does down in the basement of the hospital. She has to go find a vial of medication in which to draw the water from. She has to do some calculations to figure out how much volume to administer.

MR. BRUCE JAPSEN:

Walk us through that and tell us how it works, would be great.

VGARY CONKRIGHT:

Sure. Well, physician might order at the bedside 10 mcg/kg of epinephrine in a stat situation. The pediatric patient weighs 11.4 kg and the nurse goes and finds a vial of epinephrine and is 0.1 mg per mL. Now the order was given in mcg, the concentration is in mg, and the patient's weight has to be factored into that as well, so she has to set up an algebraic equation and do some math to determine that 1.14 mL has to be administered to provide that order and that's great, but what happens when either of the nurse misused the physician or the physician misspeaks or what happens if the nurse puts in the wrong decimal point? In the industry, they call this death by decimal point. In either case, the patient can receive an overdose or an under dose of medication in a situation where they can ill afford to have that error.

MR. BRUCE JAPSEN:

And you could really see how that can happen because looks face at everybody's terrified of math and if you have a situation where

converting mcg to mg all that stuff, it would be very complicated, so what does your device do to improve the situation?

MR. GARY CONKRIGHT:

Our device is a tool that is used by the nurse at the bedside and has a very easy to use interface where the nurse can enter the order exactly as it's provided by the physician.

MR. BRUCE JAPSEN:

And she does this by palm pilot something or?

MR. GARY CONKRIGHT:

It's a handheld device that looks like an palm pilot, yes, and as the data is put in, there is a lot of human factors work that is being done to identify potential errors and call that to attention, and once the order is put in, it's computed against a safe range. Now much like in a smart IV pump that we all know about has range checking, our device has similar range checking, its configured by the pharmacist of the hospital, so it matches the protocol that the hospital has decided as appropriate for that patient class. So for instance, an order for emergency room pediatric patient may be very different than the range for a pediatric patient in the ICU. So the range is checked and then all the math is done automatically and what the nurse gets then is the volume that she has to administer for the concentration that she has on hand. We really asked our nurses in hospitals to do sometimes the impossible and in situations where stress is high and the time is short for administering a drug, nurse has to really fundamentally do 3 things – she has to calculate the volume of medication she needs to administer per the physician's order. She needs to validate that that order is in fact safe and thirdly she has to have certain administration information in order to appropriately and faithfully sometimes administer that drug and may be how fast the drug can be administered or what the reversal agent should be if there is an adverse reaction. Our product provides all 3 of those functions and not just for infusions as a smart IV pump would, but it does a smart IV pump work as well as injectables and oral suspension.

MR. BRUCE JAPSEN:

The product by the way is named Pack 2, is it getting attraction in the marketplace? Because I know you are new company just coming on the scene and where might physicians run into this?

MR. GARY CONKRIGHT:

We did launch the product in February with our launch customer, Childrens Hospital of Illinois in Peoria and we have attended several tradeshow, have several pilots in place as we speak and hope to announce quite soon some additional hospitals, which are implementing our product.

MR. BRUCE JAPSEN:

What is the incentive to new product, I mean, a lot of times the healthcare system looks face if they can be a little resistant to technology and they have budget crunches coming ahead with the economy, what is this product going to do and why would they need this?

MR. GARY CONKRIGHT:

I think the first driver for the adoption of this technology will be the nurses themselves. We really do have a situation where nurses are left out there to fend for themselves without a safety net or many times without any tools. What we have found is that nurses love this product. It gives them a sense of security that they are not going to harm their patients. Secondly the other technologies that I mentioned earlier are very expensive and costly and time consuming to implement. Our product is designed as a downloading system; we can get it up and running in a hospital in about 3 to 4 weeks. So the immediate impact on patient safety is pretty phenomenal and I think all hospitals in this van age are looking to improve quality of care and reduce cost and we believe our product delivers on those.

MR. BRUCE JAPSEN:

And also InformMed is a company that is trying to develop other products. What can we see down the line with InformMed because as you have been talking to us about this one specifically helps the nurses prevent the wrong dose errors at the point of care at a patient's bedside? Is there anything else that we can see from InformMed down the line?

MR. GARY CONKRIGHT:

As you might know our product was conceived by a neonatal nurse, necessities of other intervention often and we find that still to be true today after we introduced our product into the market and had several months of use, we got several suggestions from the nurses who were using the product and have recently introduced version 2.1 of our product, which adds many of these features, makes it easier to use, and provides additional information at the bedside for nurses to use on a daily basis.

MR. BRUCE JAPSEN:

Well, that's very interesting because a lot of people think that the physician is often the targeted audience for marketing and developing products, so tell us a little bit about how this didn't come in the past because lets face it, there are tens or thousands of nurses out there who might be looking to assist in reducing medication errors and how this product came about.

MR. GARY CONKRIGHT:

Just about every nurse I have spoken to, when you mention the risk of medication error by doing the math at the bedside or mishearing the order, they clinch, they realize that everyday they go to work and there's an opportunity for that type of event. So our founder, who was a practicing neonatal nurse in the Chicago area, saw the opportunity to provide nurses with the tool that could give them the peace of mind and assist them in their daily function and use the technology to do that. As you mentioned, a minute ago, we all sometimes are fearful of math. One of the top reasons is nursing students don't make it out the nursing school is the inability to pass the math competency exam and when you think about it, what we want our nurses to do in the field is use their compassionate care and instincts to help patients get better and to report their conditions to their physicians, not necessarily do math and be worried about transposing the decimal point or dividing when they should be adding.

MR. BRUCE JAPSEN:

And are these things that can be changed and adapted when you market your product and you go out for ID as due consult with physicians and nurses?

MR. GARY CONKRIGHT:

We have several constituencies that we address. Nursing is clearly the foremost in our thoughts of how we can deliver tools that will help them, but pharmacists will also keep players in this equation that we market our product as extending to reach to the pharmacist. Pharmacy knows pretty well exactly what happens to medications when they go through the physician pharmacy system, but when there is an emergent care situation and nurses are doing the work of pharmacists, pharmacists really do not have this ability to degree they would like or the ability to effect those administrations to the degree they should and so this product kind of links the pharmacist to the nurse in a way that works within the workflow of both. We also work very closely with patient safety people. They are concerned not only with improving quality, but reducing the cost to healthcare system, which is pretty significant as I mentioned before.

MR. BRUCE JAPSEN:

With that, I would like to thank Gary Conkright who has been our guest. He is the chief executive officer of InformMed, which is a medication safety company focused on developing patents in commercializing new products in the medication error solution space and you will be hearing more about this company to come.

My name is Bruce Japsen. I have been your host. I am with the Chicago Tribune and you have been listening to ReachMD XM160, the Channel for Medical Professionals. Please visit our website at www.reachmd.com, which features our entire library through on-demand pod casts or you can also call us toll free with your comments and suggestions at #888-639-6157 and I would like to thank you today for visiting.

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