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Borrowing from Airline and Space Industries to Reduce Medication Errors

FOCUS ON FUTURE MEDICINE

**Every New Year we look to the future and dream of what is possible. ReachMD Radio is proud to present our special series - Focus on Future Medicine.**

Trying to reduce medication errors, the healthcare industry is borrowing a risk assessment technique from the aviation and space industries as a way to improve patient's safety. 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 health-care reporter with the Chicago Tribune and with me today is Dr. Gary Conkright. He is the Chief Executive Officer of InformMed, which is a medication safety company focusing on developing, patenting and commercializing new products in the medication error solution space. Mr. Conkright comes from experience in technical business start-ups, 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 plan to commercialize cutting-edge technology developed at the Argonne National Laboratory. He holds a Bachelor of Science degree in aeronautical engineering from Purdue University and an MBA from the University of Chicago. He is also the holder of four U.S. patents.

### BRUCE JAPSEN:

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

### DR. GARY CONKRIGHT:

Thanks Bruce. Thanks for having us.

### BRUCE JAPSEN:

InformMed has this new device that was recently launched on the market that is out there to improve the medication error situation in hospitals. If you could tell us about this your first launch customer and also some new studies out that actually support this whole tool of reducing errors at the bedside where nurses have been making errors quite frankly.

**DR. GARY CONKRIGHT:**

Our product is a portable device used by the nurse at the bedside to help her in her administration of medications at the bedside and to reduce errors. Our launch customer for this product is The Children's Hospital of Illinois in Peoria, Illinois and was installed in February. Since that installation, the hospital has done several studies to validate and understand the efficacy of our product as well as to understand the scope of the risk of medication errors in emergent care settings. As you point out in your introduction, one of the techniques that they have used in is becoming more and more widely used in the healthcare industry is a quality assessment technology called Failure Mode and Effects Analysis or FMEA. This was originally developed by the US Air Force and has been extensively used by NASA and other high reliability industry to identify areas where risk of an error is most prevalent and what the effect of a new process or new technology might have on reducing that risk. This produces an index for system failure and allows you to qualitatively and quantitatively compare solutions. So, the Six Sigma Black Belt team at OSF in Peoria went to their clinicians in the pediatric intensive care area, interviewed both the doctors and the nurses on the entire process from an order being placed to be administered to the patient, broke that down by several different matrix, and then did the same thing for the process once the product that we have \_\_\_\_\_ is introduced. What was significant with this study was that the probability of an error reaching a patient was reduced by 88% with our product.

**BRUCE JAPSEN:**

Fascinating.

**DR. GARY CONKRIGHT:**

Yes, it was great to see that number that something that we instinctively have believed for long time having spoken to several nurses and clinicians and doctors in the emergent care setting, but they actually see a formal methodology that was used by a third party we had nothing to do with that study, was really quite rewarding.

**BRUCE JAPSEN:**

And so if your product is reducing the risk of error by 88%, just walk our listeners through how the product is used and how that error would be eliminated or reduced?

**DR. GARY CONKRIGHT:**

Well, there are several ways an error can be introduced into the medication process in an emergent care setting. Normally a physician provides an order, it's usually verbal, and in a stat situation. Just in that, there is all kinds of opportunities to have a mistake, either the physician could misspeak or could use the wrong terms, the nurse could hear the wrong unit, and then the nurse has to go to the medication drawer and find the right medication, read the concentration on it, set up a mathematical equation, many cases convert micrograms to milligrams or vice versa, and then calculate a volume. That's just is a very error prone process. In addition to doing that kind of calculation on the spot, even in a situation where it does come from the pharmacy and there is time for an order to be processed through the normal channels, people make mistakes, and the nurse is the last line of defense, the nurse is responsible for validating that the medication she is about to inject or infuse in her patient is the right amount of medication and is being administered properly. Our products does all of that for all types of medications delivered at the bedside by using the pretty significant human factors, work, a database that is constructed by the hospital pharmacist and kind of approved by the medical staff. So, when she does run an order through the device and does not get a warning she is pretty assured that she is doing something that is not going to cause harm.

**BRUCE JAPSEN:**

And when you communicated and you developed this device it actually was an idea that came from nurses themselves.

**DR. GARY CONKRIGHT:**

That's right. Our founder is a neonatal nurse that practiced for over 15 years and saw the opportunity that exists everyday and every nurse that you talk to will admit that there is an opportunity to make a mistake and many times they are not aware of the mistake, obviously, they wouldn't give the medication if they thought it wasn't correct, but in a stressful situation where time is of the essence many times and there is not a lot of support to help, the nurse is on her own to deliver a medication in the proper way and proper quantity and this tool that she developed and has been improved by focused groups and studies with other nurses we really believe is an effective tool that allows the nurses to deliver the care that they want to.

Well if you are new to our channel or if you have just tuned in you are listening to ReachMD XM160, the Channel for Medical Professionals. I am Bruce Japsen, your host, I am with the Chicago Tribune, and I am talking with Gary Conkright who is the CEO of a company in Peoria that has developed a new product through this company InformMed, that is trying to reduce errors at a patient's bedside.

**BRUCE JAPSEN:**

And Gary if you could tell us a little bit about how this works. Essentially a nurse who could get a medication error from a doctor in micrograms and she might have to convert it to milligrams. The device will translate that right for her, right at the patient's bedside? Is that pretty much rather simple way to describe that?

**DR. GARY CONKRIGHT:**

It is. The nurse receives the order in an emergent care setting usually verbally. It maybe expressed as micrograms/kilogram. The volume of drug she has in a vial is expressed in milligrams/milliliter. So, right there, if you have got a conversion that has to take place and although its easy to do when you are not under a stressful situation, but you divide or you multiply by yourself to convert micrograms to milligrams.

**BRUCE JAPSEN:**

And I suppose one of the exciting things for our listeners out there is the fact that we hear a lot about medication errors, we know they are deadly, we know that they have killed thousands of people is the fact that there are companies like yours, I mean InformMed have privately held back by venture capital is that there are a lot of new ideas being developed out there and they are coming from the clinicians. So, if you are a physician or a consumer or somebody listening in would it be a good idea to try to even contact you about such ideas because it seems like this would be an area ripe for health insurance companies and others to glom onto to try to correct these problems and reduce the cost of patient care and improve patient safety.

**DR. GARY CONKRIGHT:**

That's right. Our company is formed and is focused around a passion for improving the quality of healthcare. No one wants to do harm in a hospital and no one would if they had a tool in a means to avoid that. Our best ideas come from our users. We recently introduced version 2.1 of our product and embedded in that is 6 features that were suggested by users who have used our product in field treating patients and have brought ideas on how to bring more information to the nurse so that she can make better judgments on these emergent care settings.

**BRUCE JAPSEN:**

Would you advise a physician or a nurse or other healthcare provider to contact you if they have some suggestions.

**DR. GARY CONKRIGHT:**

Absolutely. We would love to hear from you. Our website is [www.informed.com](http://www.informed.com). We are based in Peoria, Illinois and we would love to hear any thoughts or suggestions that anyone would have, be they physicians, pharmacists, patient's safety experts, or nurses.

**BRUCE JAPSEN:**

I know that you guys are just getting going and you do have your product in a hospital and you are talking to a lot of others. Do you see even in this economy and I know we are talking about from a policy perspective in Washington about expanding healthcare coverage to more people. Do you see a market for this and lot of companies getting into this arena?

**DR. GARY CONKRIGHT:**

I see a tremendous market for this product. Some of the other technologies that address medication safety are effective, but they are very expensive and take years to implement.

**BRUCE JAPSEN:**

And some are kind of old too, I mean physician manual order entry, physician order entry, a lot of the ways to correct errors, and tell me if I am right or wrong seem to be things that have been available, but yet they just aren't done and I guess what you are bringing to the table is something new that could make it simpler and save a life.

**DR. GARY CONKRIGHT:**

That's right. I think the best solutions are the solutions that work within the current workflow of clinicians, CPOE, and some of these other technologies that you have related to do require people to do things differently and there is natural resistance to that in an environment where cost and training is a factor its important to have a product that can be introduced and quickly brought into use with minimal training. Our first customer we trained 121 nurses started the product up in 3 care areas in 3 weeks. Compare that to some of the other technologies were many times it takes 2 or 3 years to get a solution up and running. So in a time where healthcare has to be focused on both improving patient's safety and quality as well as reducing cost, we believe our product is a very effective way of having immediate impact on an area that is getting more and more tension everyday.

**BRUCE JAPSEN:**

And is this a situation where you talk about converting a medication, doctor orders something in milligrams and nurse has to get in micrograms or vice versa. What about languages? Is this something that also can be done, can devices be used to translate from one language to another? What other sort of adaptations do you see these devices used at the patient's bedside could be applied to in the future?

**DR. GARY CONKRIGHT:**

As part of our product that currently sets, we provide nursing with critical administration information that can be modified by both nursing leadership as well as pharmacy. Some of the suggestions or questions we have received from the field is having more information available to the nurse at the bedsides that were in certain ways of bringing additional information perhaps linking in with other systems so that might be in place at the hospital so that the nurse really does have almost a portal in her hands of information that is critical for her job without overtly complicating it. I think some of the solutions out there today have tried to solve every single problem and as a result have not solved many at all or made it so complex and \_\_\_\_\_ to implement that there is nursing workaround. In the industry, its kind of a famous saying today about well what are the workaround for this product, will nurses be able to find ways of circumventing that. So, the solution there is not enforcement, the solution is to have a process where nurses want to use the product and find it easier to use. One of the early studies that we did or have the University of Illinois in Peoria do for us was the time and motion study in a simulated setting and actually showed that the product allowed nurses to carry out their functions in 20% less time than they did it in another way. So, again in a situation where nurse staffing shortages are at the forefront of everyone's mind and workarounds are something the people are trying to wrestle with having a product that makes it faster for people to do what they do without altering their workflow, I think is very appealing.

Well, with that I would like to thank Gary Conkright who has been our guest. He is the CEO of InformMed, which is company based in Peoria, Illinois, which is trying to reduce errors through their new products at a patient's bedside and we would like to thank Mr. Conkright for being our guest.

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 ReachMD.com, which features our entire library through on-demand podcasts or also call us toll -free with your comments and suggestions about this or any other show at (888) 639-6157 and I would like to thank you today for listening.

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And this is Dr. Mark Nolan Hill. This week we will be speaking with Mr. Henry Greely and Dr. Jay Peter Rosenfeld we will be talking about sanction views of brain scans in a court of law. Download complete program information by streaming on-demand podcasts and free CME at [ReachMD.com](https://ReachMD.com). ReachMD online, on-demand and on-air at XM160.

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