

HOW WE CAN ALL WORK MORE CLOSELY TOGETHER TO MEET FUTURE PROFESSIONAL CHALLENGES IN A NEW HEALTH CARE WORLD

- Evening speakers typically acknowledge that they are the only things standing between the audience and the bar. Tonight, I have to acknowledge that I'm the only thing standing between you and George Mills! If George were walking in the door of your hospital tomorrow, you might want me to stand between you and him. But not tonight!
- On a more serious note, last summer, the brother of one of our staff almost died. He has fully recovered. The staff member made this comment: "I really enjoy working for AAMI because the work of our members truly helps people. The work of our members saved my brother's life, from the AED used to re-start his heart down to the IV pump by his bedside and the people who made sure it all worked properly." On behalf of all of the staff, thank you for the work that you do. We are proud to be a part of it.
- Health care is in a time of huge transition, and it's going to be a bumpy ride. Every new car that we buy from a US car maker has \$1500 built into the price for the autoworkers' health care - \$1500. Hospitals have promised lawmakers \$1.5 billion in savings. On top of these savings, hospitals also are making commitments to implement the electronic health record.
- This is an exciting - challenging - and overwhelming time to be in the medical device arena. Your services, talents and commitment to patient safety were never needed more than they are now. In order to achieve the promised \$1.5 billion in savings – and to implement that electronic health record **safely**, your hospital needs you – and all of us – to work more closely together to achieve the savings and the overall goals!
- I'm going to talk about how market forces and regulatory changes are going to impact your work (if they haven't already) – and why it's imperative that we all work together to support this system called health care.
- **First**, I'll talk about the future of technology and your role and the importance of viewing technology as part of a big system that is all connected. **Second**, I'll talk about the skill set you will need. **Third**, I'll talk about showing your senior executives that you can solve some of their biggest problems.
- My comments should not come as a surprise to you. I hope they make you think about your work a little differently, and that they call you to action.

First:

- Your future is inextricably linked to the future of technology, which is changing at a breathtaking pace.
- Looking out 3-5 years, less for some of you, your hospital is going to be one big connected system of clinical equipment.
- If you are fortunate, You will be responsible for a small device that is not much more than a computer and printer that prints out the color coded labels for all patient syringes (no more hand labels), everything in the OR will be integrated, and the devices will talk to one another. Are you ready?
- Story: large hospital system has 1000 smart infusion pumps goes down from a software upgrade because some nurses had been taught to use a different keystroke than the others;
- Another story: network that supported all of a hospital's cath lab equipment went down. after a week of nothing working, they discovered that an IT person had changed the IP address on that particular network and that was the problem - \$150,000 in lost productivity and expenses to fix.
- This isn't an IT problem. It's not a biomed problem. It's a symptom of a huge systems problem.
- At the moment, not enough hospitals are thinking through how technology is used in the right place, at the right time, with the right people, communicating in the right way. I'm talking about the **safe** integration of clinical technologies and systems. I'm talking about the **human factors** challenges that stress clinicians beyond the breaking point. I'm talking about **work flow**. These are all areas that intersect with your work. How technology is used to make a decision at bedside is **your** talent. The coordination of patient care devices and how they work together is a clinical engineering and technician function. That's your talent! This is a great opportunity for you to shine!
- As traditional hospital care continues to migrate to outpatient and home care, you need to help plan for role with equipment outside of the hospital walls (e.g., in-home dialysis machines operated by the patient and family; handheld imaging devices operated by a physician in a clinic and connected to the hospital network; in-home monitoring systems for the elderly, all deployed by your hospital throughout the community that considers you to be their medical "home"). This requires a whole new type of planning and deployment and maintenance function! Yours.
- Equipment that will be in the highest demand will be devices that aid in diagnosis, help patients manage and monitor their chronic diseases, and anything that can be used outside of the traditional walls of a hospital. A clinical device is likely to

look more like an I-phone application than a huge piece of stand alone equipment. What's your role going to be?

- Whether you and your hospital recognize it or not, you are an invaluable member of a clinical support team that is essential for looking at these challenges using a **systems** approach.
- The Joint Commission issued a Sentinel Event Alert a year ago about safely implementing converging technologies. The report lists all of these contributing reasons for adverse events: human-machine interfaces (human factors), system design, inadequate technology planning, insufficient testing or training, complicated work flow, strain on demanding schedules from technology overload. These are all challenges that require the participation of the clinical engineering department.

Second: Your skill set

- If your role isn't changing, if you aren't part of a systems approach to clinical equipment, you need to ask why. You have an opportunity to frame and manage your future – and if you don't, that opportunity may become a threat because you could be left in the dust if you don't position yourself to be ready for new and expanded roles.
- Quick story: consultant in CA – wants someone from AAMI to train IT people to take clinical equipment help desk calls. Why? Because she says the biomedes just want to fix things when they break.
- Your job is about the safe, successful and planned deployment of clinical equipment. Your PMs are a very small part of that and will become even smaller in the future.
- What additional skills do you need and how will you get them in order to show your value to your organization in this brave new world? Do you have a high level of collaboration with your IT and clinician colleagues and, if not, what can **you** do to change that? Are you involved in helping to plan for new equipment purchases to ensure that your facility gets the best advice possible (yours) before the decision is made; what is your role in training clinicians to use new equipment and are you maximizing the opportunities to shine in that role.
- Skills that are critical (in addition to your technical skills, which are a given):
 - **workflow/clinical work processes** (analysis of how technology fits in and how work flow needs to change to be more efficient and to accommodate new technology) – if apply new technology to flawed work processes, will be adding on layer of flawed work processes

- **collaboration** - team approach to working – everything today is cross disciplinary – can’t work alone any more
[**question: how many of you see yourself as collaborative? When was the last time you asked a nurse how you could help them do their job?]**
- **planning:** technology must fit into strategic plan of the organization; you need to be part of planning team
- **project management**
- a **systems approach** to engineering
- **metrics** for success (AAMI’s benchmarking tool!)
- installation, configuration and repair of integrated medical systems
- radiofrequency spectrum management
- inventory management (documentation, budget, upgrade schedules, etc.)
- disaster planning and management (are you ready for your equipment to all go down when a network crashes? What goes back up first?)
- risk management (80001 standard)
- Six Sigma, Toyota production, and related business process tools (note article from USA Today about CEO of NY hospital turning to these business tools for things like, e.g., just in time inventory)
- Report preparation (data, metrics, benchmarking, trends)
- customer service (patients, internal “customers” in the hospital, colleagues in the department; Ritz Carlton service versus bad restaurant service experience)

Third: Showing C-Suite Your Value

- Ok, you’ve got the technology down pat, and the skills to provide increasingly more value to your hospital; now does anyone know you’re ready?
- Regardless of what you think of your hospital executive management, they have a thankless job in a very challenging time!

- I'm going to take a minute to help you understand what's on their minds, and how they think.
- First, like you, they spend all day solving problems. Their problems often don't have concrete, "right or wrong" answers. And, they often don't have a lot of time or resources to solve those problems.
- Second, their biggest challenges are the same as yours: money, patient safety, and service (patient satisfaction).
- Third, they think in soundbites. Think about the dashboard on your car. Amazing detailed engineering – that's you – goes into the design of that dashboard. What's shown on the dashboard is just the topline message: do you have enough gas, are you driving too fast, do you need to service your car. They need you to give them the dashboard information on medical equipment. They love data – top line – and getting summary reports that give them the data. One page.
- Fourth, they are intimidated by you because they don't understand your world. I'm guessing you are intimidated by them, but you know what – they are more intimidated by you than you are of them! You have to make the first move – don't wait for them to notice you! They won't!
- Story – Staff reaching out before I got to AAMI

Feeling Overwhelmed at this point?

- AAMI has a responsibility to help you prepare for this future and to help your hospitals understand your value. We also have a role to bring industry, hospitals, the FDA and the Joint Commission together to create the tools that are needed throughout the entire system to ensure that patient outcomes are better through a system of integrated technology.
- We need to provide you with:
 - Those dashboards
 - Education geared to what you need to know
 - success stories on what has worked in other hospitals
 - an ear to listen to your needs and respond to them
 - a voice for your c-suite to appreciate your value
 - concrete tools that you can use to measure success and show that success to your c-suite
 - benchmarking
 - updates on things like the upcoming 80001 standard and the soon to be released FDA MDDS rule – if your hospital tweaks devices out of the box, then your hospital will be responsible for that tweaking, not the

manufacturer; read the AAMI News and BI&T – critical updates will be included there;

- What does success look like?
 - 1) Collaborative partnership between biomedical engineering and clinicians and IT
 - 2) Biomedical engineering is seen by the C-suite as a reliable group of technicians who solve their big problems: safety, cost, patient satisfaction
 - 3) You are part of interdisciplinary teams that plan for equipment purchases, standardizes work flow, produces a reliable inventory of medical devices, coordinates the risk management function for medical devices,
- Last, I want to put in a plug for this year's AAMI annual conference, in Tampa; there is a fresh new lineup of important programs, including some training on a lot of what I talked about here today, including the new 80001 standard. George will be there. And, the keynote speaker will be the author of the incredible book, "Why Hospitals Should Fly." I hope to see all of you there.
- In closing, thank you for what you do. Thank you for thinking about what I've said this evening. Remember that we're committed to helping you achieve success. Thank you.