

Let me just introduce myself. My name is Greg Gibbs. I work in southern Colorado in a medical physics group. We have twelve people in our group, but we work in smallish centers so it's different than Alistair's experience. We have centers that have either two or three accelerators and so our problems are much different. I've been working in the area of medical physics for twenty-five years, and that was before the PC was invented. When I started the starship machines were a PVP8 that had eight inch floppies that we use to boot with tago switches. I'm an avocational computer user. The departments I work in don't have paper, treatment records, so we're doing everything inside our record and verify system. I think that one of the reasons that Alistair and I were selected to be co-presenters is he works with a big shop, I work in little shops. He uses Varis; I use

Impact, so. . . I think one of the biggest questions is why is, why is a physicist get involved in IT. When I walk into a department in the morning, I'm met by the, at the door by a lot of different people, all the way from the dental hygienist to the transcriptionist whose computer system doesn't work and they're frustrated by that. They can't figure out how to get it to work and they don't have the resources to, to use for that, so they wait for me to walk in the door because I kinda like it and I end up helping 'em out sometimes. But, in radiation therapy departments we have lots of interconnected systems, not from a particular vender. We have CT's from GE or Phillips, accelerators from Varian or Seaman's, different planning systems, and often times many different planning systems within the department. We have planning systems Varian,

from Phillips, from, well just for all the modalities that we use. Often times the systems work together well after they install all of these because he's set it up right and he has the big picture about networking and interconnection. But, the installer goes home and his home is often times many, many miles away from our home. The local service guy doesn't the understanding about network knowledge or all the inner connections. So, when things go, go south, and they often do, he's not as much help as you'd like him to be, and we also have mixed operating systems, UNIX, Lenox, Windows. Over the time that I've been working in this business, IT has changed quite a lot. At the beginning there was no IT. People bought individual PC's. We had the first networks in the department, or in the whole hospital, and really it was just a small three or four node

network, and there was no IS or IT, and then there was information services. It was a new department. They didn't exactly know their role, but services was in their name and they tried to provide a service. Right now, it's information technology. From my perspective they took out the service because they're trying, their, their role got to be too involved and they just want to be able to connect the wires and they're not really, in our position, very clinically oriented. So, they don't know the details about how things work, and in the future what I perceive is information Nazis, "why do you want that information?" In our systems, IT is a cost center. They're not a revenue center. They're just there because it's overhead actually, just like the laundry for the rest of the system. They're use to scrimping and saving. One of our sites uses, still uses, Office 97 because

it's the cheapest thing they can do. Radiation therapy on the other side is a revenue

center. We're use to spending money and making money because we spend money. We can make \$15,000 a day on each machine. So, if a server goes down and causes us to not be able to treat patients, we lose money in a hurry, so we're, our motivations with money are different than IT's in general. Our, because of that fact that it's a, a cost center for our enterprise, they have been trying to minimize the contact that an individual has to have with each desk top PC. Thus, the system that I work in, although the hospitals have small departments, the whole system is, I don't know, probably ten hospitals and has 4500 PC's spread across the network. So, it's a daunting task when Microsoft comes up with a patch every day or every few weeks to fix the new security issues. So, they don't

want to touch every machine, and that has made them invoke software called SMS, the Systems Management Server. It allows the control over all the Window 2000 machines, the XP machines from a central office, which is really handy but, if all the machines were the same throughout the, all the 4500 machines throughout the enterprise, it would be very good. We have some machines that are adversely affected by that kind of control, and all of a sudden we walk in the morning and Big Brother has taken over their machines, things are different, and now the accelerator doesn't talk to the _____ for example. So, SMS can help and hurt. I have one story where I had a machine that I used to do I Marquee QC, and it had an antivirus program on it, but SMS put over on top of the antivirus program that was already there a new antivirus program. So the machine

wouldn't even boot and, not only that, but SMS, or active directory, ended up changing the administrative password every half an hour, so the IT people couldn't even tell me what the administrative password was because that was part of their security, they kept changing it, and changing and changing it, so it made the repair very difficult. They ended up having to get a Lenox boot disk and hack into the system to modify the administrative password so I could get into to change the software. Now, it was kind of interesting because I got the Lenox hack disk from our IS department but I, so I kept it. I thought this could be handy in the future. Well, the next time I used it they didn't appreciate it near as much as the first time I used it. And, Alistair pointed out that there's a matter of perspective. From an IT perspective an accelerator is an interesting

peripheral. It's a, it's quite a printer. But from, from a physicist's perspective, a PC is just a fancy control system or a tool. So, there's a real perspective difference between a physicist and an IT person. Alistair mentioned this already. IT is hesitant to relinquish power, but you need each other because there are a lot of times when a computer problem will come up that is a hardware problem or something you can't deal with just as, at the level that a physicist is at. The best approach that I've found is to invite them in, befriend them, and give them a geek tour. They love to hear about the seven foot thick concrete walls, about 120 leaf, multileaves dancing in concert, the patient flow, the gravity that the patient's take or consider the process of radiation therapy. One of the things that we found to be very, very valuable, especially with the, for the perspective that the same

physicist isn't at the same sight all the time, is to have a collection of all the data about the network in one centralized location. Our RT guy who thought this up decided that he was going to call it the Red Book system because there's a red binder that's different

from the other binders on the shelf because it's big and red and you can see it easily, but it has all the network related data in one place. IP addresses, Gateway's, the main main service or server names, AET, port numbers, all the set up instructions, and installer name so that when the installer goes home and you need him, you can call him and extract the information back from him. And also I don't know how many of you remember all the VI commands, but I have a cheat sheet of VI commands because I can't remember how to use that stuff, and since there are so many Unix boxes around and VI's the only editor

that's everywhere, I have a list of the VI commands. We keep an electronic copy of the Red Book on the network server so we always have a copy of it anywhere we go, in addition to the binder. The paper copy is more portable so you can print it and carry it to the computer that may not be working at the time, but so anyway we have two copies of the Red Book, on the shelf and in the computer. The Red Book system eliminates the single point of failure, which is, the single point of failure is the, if the guy who knows what's going on is happens to be not at the site on at that day so another person can walk in, find the Red Book, thumb through and try to figure out what data needs to be put where. There are certain caveats to providing IT service as a physicist. The first one is that it takes time. CAMP, which is a Colorado Associates and Medical Physics, it's a

group that I work with, is a service provider. A lot of times there isn't anybody who really knows what a physicist does in a hospital, and our work is invisible and under appreciated in many instances. Computer help, on the other hand, is visible and immediately rewarding. The person can go back to work, they're happy about that or they're usually happy about that, but as a result of spending time doing the computer stuff we don't always get all the physics work done. One of my partners say, tells me, that when I do IT work it makes IT look good and it makes the physic's group look bad because we don't get our work done. And then there are parts, some of our colleagues, that may not want to do the IT work and don't enjoy it as much as others. Well, we have, as Alistair mentioned, there are some required elements that we wanted to put into the

talk. One of them is HIPAA, and I'm sure that everybody here has heard of HIPAA and probably painfully aware of it. It's called the Health Insurance Portability and Accountability Act of 1996. It protects health insurance coverage for workers and their families when they change or lose their jobs. It's supposed to simplify things administratively. The administrative simplification provisions of HIPAA require that the Department of Human or Health and Human Services to establish national standards for electronic healthcare transactions and national identifiers for providers, health plans and employers. It addresses the security and privacy of health data. HIPAA standards improve the efficiency and effectiveness of the nation's healthcare systems by encouraging the widespread use of electronic data inter, interchange, in healthcare. There

are three critical parts of HIPAA. The first is transaction that an electronic transfer must be in an appropriate and uniform format. Privacy of all electronic, verbal, or written information must be maintained. Insecurity is such that information should only be used or shared in an appropriate need to know basis. Well, that sounds good, sounds real good. But, what does it mean to us? Well, HIPAA requirements, or HIPAA agreements

between vendors and the hospitals have to be in existence, that the information that they see as confidential, for example WEB X sessions, transfer of problematic treatment plans, and that kind of thing, when they get to the vendor's site have to be considered confidential. They also, it also means to us, secure changeable and non generic log ins so that if an angry ex-employee comes back and wants to do some damage to their

employer, he can't or the changing of their passwords or login names will be, will help to prevent that from happening. And, it also provides better security for patient medical data. There are a lot of times when our physicians, for example, or in particular, will just walk away from their computer systems leaving the patient data upon the screen and there have been times when they're, they've walked away and left for weeks at a time and their computers stay logged in with the same patient information on the screen, so HIPAA also means that there are computer log outs, either with the operating system or the individual application. One of the things that, that's adversely affects our operation is when we get the operating system logging out and requiring that the user who was there before log back in to unlock the computer and that user has gone to lunch, which means

that the accelerator can't be used until the operator comes back from lunch, which is a real problem. A lot of the pieces of equipment that we buy end up having PC's as the front end, and our IS department isn't particularly interested in having non IS supplied PC's on their network because they don't meet the specifications that they put in place. In spite of coming from a bad family, those vendors supplied PC's need to be added to the domain so that the authentication can be universal so that everybody can log into that computer. You don't want to have a PC that has a special log in for a, an individual because then he'll have to have, remind every individual that works on that computer that there's, this, this computer is different from the rest. So, those vendor supplied PC's need to be added to the active directory and the domain so the authentication can be

controlled, so everybody can use it. HL7 is a standard for data interchange between data systems. It includes a variety of sections, one of them is ADT or the transfer of patient specific demographic information and insurance information updates, and billing. It's similar to the greater, or it's similar in the greater healthcare world to what we know as DICOM in the image transfer world. HL7 is a very flexible data interchange format, but because it's so flexible, there's a lot of configuration problem with both the sending side and the receiving side. Since the sender and receiver are both flexible in terms of the required elements, the compliance with HL7 is not guaranteed. Much care is needed to get the system set up right, and then as soon as it's set up right somebody will change something on one end or another and the set up efforts are wasted. All right. That's the end of what I have to say. Does anybody have questions?