

Quality Improvement & Innovation Partnership

New FHT & NPLC Workshop IT Basics

March 28th, 2011

Valerie Vanek
Senior Policy Analyst, Nursing Secretariat
Ministry of Health and Long-Term Care

Mark Simmons
Program Analyst, eHealth Liaison Branch
Ministry of Health and Long-Term Care

IT Basics

EMR (Electronic Medical Record)

- EMRs are stand-alone health records that allow storage, retrieval and modification of individual patient records.

EHR (Electronic Health Record)

- EHRs are capable of being shared across different health care settings.
- EHRs use information provided by EMRs and can include capabilities to monitor patient demographics across many facilities.

CMS (Clinical Management System)

- CMS is a computer software product that coordinates and integrates activities for the management and operations of a healthcare facility.
- Some systems maintain patient information (address , etc.) coupled with the EMR, and medical billing.

IT Basics

ASP (Application Service Provider) Solution

- Server (hardware) located off-site.
- Web-based model; software can be installed in a centrally-controlled place off-site and accessed by the NPLC's computers over the internet.
- Information from the off-site server can be accessed from anywhere that has internet access; providers do not have to be at the NPLC's location.
- This is also called *remote access* and/or *SaaS* (Software as a Service).
- Server purchase, security, maintenance, and backup would not be the NPLC's responsibility.

IT Basics

Local Solution

- Server (hardware) located on-site at the NPLC (preferably in a temperature controlled and dust-free environment). Standard server room size is approximately 80 square feet which is about the size of two accessible washrooms.
- Software is installed at the NPLC and accessed over the internal network; internet access not necessary in order to access EMR and CMS.
- Information from the server cannot be accessed outside of the NPLC unless virtual private network (VPN) access between the outside computer and the server is set up.
- Server purchase, security, maintenance, and backup would be NPLC's responsibility.

IT Basics

ADSL (Asymmetric Digital Subscriber Line)

- Transmits electronic data over your telephone line.
- Usually has significantly higher download speed than upload speed.
- Actual speed dependant on how far the building is away from the Central Office (location of the network hardware) in feet of copper wire, and quality of copper wire.

T1/T3

- Fibre optic line which carries voice and data at a much faster and efficient rate than ADSL.
- The more computers on a T1 line, the slower the access.
- Must be installed.

Cable

- Internet access delivered over coaxial cable (the same used for television).
- Speeds depend largely on how many other users in your neighbourhood are also using the technology.

IT Basics

WIFI

- Uses radio waves to transmit data. The computer's network adapter converts the data into a radio signal.
- The World Health Organization published the paper "*Electromagnetic fields and public health, Base stations and wireless technologies*" in 2006 which contained the following conclusion:
 - "Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF [radiofrequency] signals from base stations and wireless networks cause adverse health effects. "
- Can be safe to transmit health data as long as the network is properly protected.

VPN (Virtual Private Network)

- Instead of using a dedicated line, a VPN uses "virtual" connections routed through the internet from the company's private network to the remote site or employee.

IT Basics

Basic hardware requirements (ASP)

- 1 computer (e.g., 2.4 GHz processor, 2 GB RAM, 100 GB HD*) per work station (e.g., front desk, practitioner offices, exam rooms)
- Printer(s)

Basic hardware requirements (Local)

- 1 computer per work station (as above*)
- Printer(s)
- Server (e.g., 6-10 users: 3.2 GHz processor, 4 GB RAM, 1000 GB HD*)
- Backup system

Software requirements

- Microsoft Office, antivirus software

Other considerations

- Scanner, label printer, health card reader, extended warranties

*Actual specifications required will depend on selected system.

IT Basics

General Tips

- System security is crucial. Ensure you have the following:
 - up-to-date antivirus software;
 - a secure network (including a strong firewall); and
 - staff training on security policies and procedures.
- Avoid downloading freeware or unlicensed software. Not all viruses and spyware will be detected by virus scanners. Computers can also become infected by viruses through visiting infected websites.
- Extended warranties are worth the investment for your hardware.
- IT requires careful capacity planning. Anticipate where the clinic will be in 3-5 years (# of NPs, admin users and patients) and purchase accordingly. Make sure your server, licensing models and networks have room to grow.

IT Basics

General Tips

- Expect to replace your hardware every 3-5 years.
- Don't rely solely on one technology guru. Even gurus take vacations. Have a back-up plan.
- Install hardware and software updates as soon as possible. They can affect everything from security to speed to functionality.
- Develop a disaster recovery strategy (including strategies for IT and EMR access) and update it on an annual basis.
- Make sure your staff follow good practices for password management (combination of letters and numbers, update every few months, don't write it down, etc.)
- Develop and maintain a good backup strategy. Take backups offsite each night.

Questions?