E V O L V E

Newsletter

e-Health

Vetus, Novus et Mutatio

About EVOLVE:

- **Mission:** *Focusing on pharmacy's expanded scope of practice to promote student collaboration and empower them towards better patient care*

- **Vision:** *Developing a culture geared towards nurturing future pharmacy professionals in the interest of improving health outcomes and ensuring patient-centered care*

- **Values:** *Surpass, Cultivate, Optimize, Passion, Empower*

Interview with Jill Archer: e-Health Ontario Employee

Jessie Lu
Event Coordinator

First off, what do you do at e-Health?

I'm a Change Coordinator, so basically I track and coordinate IT changes. I would need to look at what else is currently happening and see if they would impact other services. So for example, if there's an upgrade that has to do with a certain server, then we need to plan that change, because if that server comes down, and that's a service that's offered 24 hours or it's for a hospital, then we have a problem. We have several data centers, and the information is housed in separate locations so if one goes down, there's a backup at another location.

So which services need to always be available?

OLIS, the Ontario Laboratories Information System, has to be up 24/7; it's important that clinicians have access to lab information at all times. DPV (Drug Pro-

file Viewer) is another 24/7 service, there's quite a few.

How do you feel e-Health has changed the health care system thus far?

Well, I've been working at e-Health for 14 years. When I joined, there was probably only 20 of us on one floor of one building. Now, the data centers have much better security, with several locations, located strategically so if one goes down, say due to a flood in one city, it wouldn't affect the others. When I first started working for e-Health, the initial mandate was just the Electronic Health Record. However now, it's a much larger picture. Every time a new service is rolled out, it's very exciting because it means we're getting closer to one holistic system. Currently it's mainly in hospitals and community care access centres. The DPV service has been rolled out and it's around 30% of what it's going to be. Once that's in pharmacies, I feel like it'll be used better because patients won't have medications that conflict, pharmacists can have more information, and it'll be harder to abuse the system as much. Another thing to keep in mind is that many people don't have family doctors, so instead, they'll go to walk-in clinics and emergency rooms and there's no way to keep track of it all. It results in a lot of redundancy in the system; people will often get sent for the same tests, walk

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Interview with Jill Archer-e-Health Ontario Employee

-in clinics are notorious for this. This results in a waste of resources and money, which could be eradicated with e-Health.

What do you think about Ontario's uptake of e-Health?

What's exciting about e-Health is that it makes an impact everywhere, not just places like Toronto. e-Health can bring healthcare to those who didn't have access to it before, whether it's diagnosis or treatment. I met a person who had chronic pain for years, but she has no diagnosis for it. So recently, she was pulled into an appointment with her doctor, and they had a web conference with several specialists from all over Canada and she received care that otherwise, would've taken years of wait times. Many places in Ontario, such as those on the native reserves, don't have access to timely healthcare. Now, at least people can send information securely, security being the most important part of this service.

*Where do you see e-Health heading towards in the future?*

It's very hard to say, because there are many factors that affect the mandates that we have. Every time there's a change in government, the mandates that we focus on change. Sometimes it's not very clear why our mandates have changed. There are also other projects that were a big focus for a period, and then suddenly the direction and funding is changed to another mandate. For example, regarding DPV, its services are mainly in hospitals and CCACs. Hopefully, it will eventually be rolled out into pharmacies and smaller locations, however it's hard to say for certain.

What kind of barriers do you see that could impair e-Health's success?

I think it's pretty complicated. On one hand, the classic answer is that there's not enough resources, not enough funding. For example, clinicians who want to put their patient's data onto the system would require lots of help, oftentimes an office is just the doctor and a secretary, and they would need to transfer an entire wall of files onto the database. On the other hand, I don't think the phrase 'if you build it, they will come' really applies here. You need many contributors' buy-ins, you need to figure out what the system needs, what to improve and how to do it. Patients also have their own preferences; some prefer all their information in a physical folder. There's a distrust in the electronic system, which is why security is so important for us as well. There are so many levels of constraint and it's very hard to account for.

Implementing e-Health: What we Learned from the UK
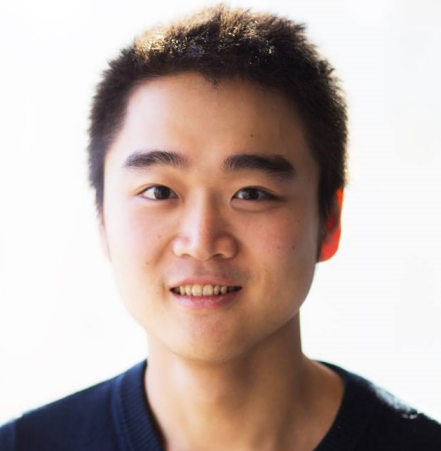
Steven Guan
Secretary-Treasurer

      Healthcare providers have increasingly sought to use e-Health systems to widen access, improve quality, and increase service efficiency. Healthcare systems recognize the need to adapt in order to accommodate changes in population demographics and increasing incidences of chronic illness.[1] Despite this recognition, critics to e-Health have made it difficult for it to be implemented in practice, as was the case in Canada. Despite the challenges, the United Kingdom has achieved considerable success in implementing a national-wide e-Health initiative called DALLAS.

      Delivering Assisted Living Lifestyles at Scale (DALLAS) is a program that focuses on transforming people's lives through development and use of person-centered and innovative technology products, systems, and services to improve their well-being.[2]

Vargha Amirabadi
Innovation and Advancement Officer

In developed countries like Canada and the UK, healthcare costs are increasing and traditional models for healthcare are no longer sustainable.[4,8] e-Health refers to the use of information technology systems in healthcare and aims to provide a solution to the sustainability of health care systems.[4] It is a developing area with the goal to improve the quality and delivery of health care services and as a result improve patient health outcomes.[4] Examples of e-Health technologies include electronic health records (EHRs), computerized decision support systems, e-prescribing, electronic management of chronic disease, and barcoding of drugs.[5] Often, challenges arise in the implementation and adoption of e-Health technologies. This article will highlight a few of these challenges and suggested solutions, as well as describe their implications in pharmacy practice.

One of the barriers in implementing e-Health is interoperability, which describes the extent to which health information systems share data and interpret such data.[4] Lack of interoperability leads to a fragmented health care system where health information systems, while they may be useful on their own, are not able to work together as part of a network. Data from medical information systems, which are obtained from different sources, need to be standardized if they are to be used within an interoperable network.[4] Interoperability of health information systems can allow pharmacists to provide more comprehensive care for their patients.

In Alberta, the Alberta Netcare EHR allows pharmacists to utilize patient medication information and communication this information with other healthcare providers.[4]

Another challenge in implementation is the strict regulation of health information systems in order to ensure the safety and privacy of patient health information.[4] The bridging of such systems is also financially demanding which is a challenge of its own.[4] To ensure the cost-effectiveness of e-Health technologies, continuous measurements should be performed throughout development and implementation processes; these measurements should provide evidence for improving performance and outcomes.[6]

It is necessary to design e-Health technologies using a holistic approach.[8] This is done by emphasizing focus on the entire health care system, rather than analyzing its individual parts. Challenges arise when this approach is not considered, and results in technology that has low impact in health care practices.[8] More focus should also be placed on consumers as developers may find the functional requirements of e-Health technology difficult to understand.[6] Pharmacists should be actively involved in the development of e-Health technologies for pharmacy practice in order to optimize their function.

Upon overcoming the challenges of e-Health technologies, more integrated and effective patient care services can be provided.[7] Increased uptake of e-Health will lead to changes in the framework of healthcare systems which opens up the door for pharmacists to expand their scope of practice such as point of care genetic testing in addition to improving their existing practices.
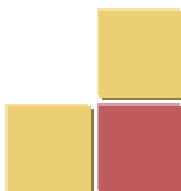
Humans of Pharmacists' Expanded Scope (HOPE)

Hatf Sohail
Pharmacy Student, 1T9

"The nursing profession has changed so much in the past 50 years and the role of the Nurse Practitioner really attests to this. The success of their expanded scope was because they were able to fill in the holes in the health system. We should take the same approach for expanded scope for pharmacists; we should see where the health system is lacking and use our expertise to improve the situation. We all have a role in promoting awareness of our profession, whether we're students, pharmacists or the OPA. Policy makers are realizing our potential and giving us expanded scope of practice. We have to take full advantage and insure it makes an impact on our patients. We are capable of greatness, especially since we are the most accessible clinician. Maybe one day, we can be the "superman" of health care providers but Batman is still better though."

Megan Arnott
Pharmacy Student, 1T8

"Before I was in pharmacy school, I worked as a pharmacy assistant in New Brunswick for three years. I was already used to being able to do extra things because New Brunswick has been able to do therapeutic substitutions since 2008; I didn't know any differently. For me, New Brunswick healthcare is especially strained because it's a lot of older people and a lot of young people leave, so the healthcare system is strained financially. For us, it was very useful to have expanded scope because it takes the pressure off of doctors and emergency rooms. There is a shortage of doctors in New Brunswick and the expanded scope is especially helpful. I'm from a small town so it was extra beneficial and you get to see the relationship built with community pharmacists and their patients, especially older patients on lots of medications who are in all the time. If we had more promotion of things that are already available like smoking cessation or flu shots, people would be more apt to ask about it. I think right now it's just a lack of information, patients just don't know it can be done. One thing I read in New Brunswick is there's a pharmacist that used to do columns in the local newspaper of frequently asked questions so maybe even something like that would make people aware that pharmacists can do these things."
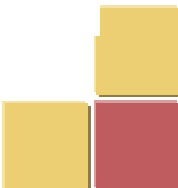
Implementing e-Health: What we Learned from the UK

The program consists of four multi-agency consortia: More Independent, which focuses on enabling people to take care of their own health and wellbeing; i-Focus, which tries to develop an overarching electronic system that can support interoperations across the program; Year Zero, an initiative to bring together experts in healthcare, design, media and technology to develop user-centered healthcare tools; and Living it up, a digitally enabled support for better health in Scotland.[2]

During its path to implementation, DALLAS faced many challenges. For a program as large as DALLAS, which involves multiple agencies at multiple sites, communication across the program is essential but very difficult to achieve. Technological companies do not have a history of working with government healthcare organizations and substantial cultural differences exist.[1] The importance of team work and role clarification at an organization level is critical to its success. One of the major strategic aims of this program was to develop person-centered and interactive digital tools. This was achieved by recruiting the public to provide feedbacks into the design of the e-Health product prototypes. However, contractors were given overambitious and unrealistic recruitment targets, resulting in substantial development delays which could have

been avoided. Finally, regulations and information governance provided major barriers for the implementation of DALLAS. Several technological contractors showed a lack of understanding regarding security associated with patient records, resulting in digital consumer version of traditional health services or products not endorsed by regulators.[1]

Despite these barriers and set-backs, the program pushed on via adaptive learning and flexibility and has gained momentum nation-wide. It is one of the first programs in the world to undertake large-scale e-Health interventions and implementations. Its success shows that even though there are many hurdles in e-Health implementation, the results are encouraging.

The Potential Impact of e-Health on Pharmacy Practice

Ashley Sharifara
Innovation and Advancement Officer

The introduction of e-Health will bring changes in how healthcare professionals practice and this includes the role of the pharmacist.[9] As future pharmacists who will practice with operating systems incorporated in e-Health, it is important that we understand how it may impact our practice.

One of the most significant changes that will be seen in pharmacy through e-Health is e-prescribing. Prescribers would be able to, in real time, transmit prescriptions to pharmacies. In settings where this has already been implemented, pharmacists and technicians prefer e-prescribing as the prescriptions are more legible. Furthermore, less input and time would be required from pharmacy staff in the entry of prescriptions, thereby resulting in faster processing.[10]

The Potential Impact of e-Health on Pharmacy Practice

The introduction of e-Health could also open up the ability to report adverse drug reactions on a patient's electronic health record.[10] Given the role pharmacists play in medication therapy management, they would be able to inform health care professionals within. Furthermore, reports of adverse drug reactions made through e-Health technology have the potential to be integrated, collected and tracked at a national level in order to catch adverse events associated with a drug earlier.[10] An integrated operating system has the potential to provide a means for reporting these findings, given the fact that pharmacists find themselves short for time.[11]

Pharmacists are involved in medication reconciliation, creating care plans, and creating and maintaining a medication record, all of which include documentation. An integrated e-Health system would allow the sharing of information between healthcare providers in order to improve the continuity of care for the patient. This would allow for healthcare providers more opportunities to collaborate and address issues regarding medication adherence and drug therapy problems.[10] With the

sharing of medication records between pharmacies, pharmacists will then be able to be more vigilant in catching drug interactions as they have a more comprehensive view of all of a patient's medications, including those from other pharmacies.

On top of reducing costs, reducing paperwork, and improving safety, one of the main goals of e-Health is to improve patient healthcare.[9] Pharmacists are in a unique position to participate in the maintenance of electronic health records in e-Health through their medication knowledge and professional capabilities.[10] It is important to understand how the role of the pharmacist may change with e-Health, and how pharmacists can take advantage of new opportunities to improve patient health outcomes.

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