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**Introduction**

A successful clinical system plays a crucial role in strengthening the healthcare system around the world. Clinical systems used to improve healthcare efficiency and delivery will ultimately improve patient outcomes and health care personal satisfaction. They can be used to identify patients at risk, aid in research, and improve efficiency for better patient outcomes. This paper discusses on four peer-reviewed articles explaining the current clinical systems used in healthcare organizations, their outcomes, and their efficiencies.

**Annotated Bibliography**

Lo, B., Charrow, R., & Wilijer, D. (2022, July 18). *Why are Patient Portals Important in the Age of COVID-19? Reflecting on Patient and Team Experiences From a Toronto Hospital Network*. Retrieved January 22, 2023, from <https://journals.sagepub.com/doi/10.1177/23743735221112216>

In this information-driven world, Patients deserve to access their medical records and communicate with healthcare providers from their homes, and this is possible via the Patient portal. The article presents how covid 19 has changed healthcare delivery in Canada. Digital healthcare tools especially patient portals were identified as an important tool in continuing patient care throughout the pandemic. Patients can access their information, schedule telehealth visits, assess labs and test results, and message their providers if any concerns, reduce office visits to reduce the chance of covid transmission, reduce cost, and save time.

According to Lo et al, During the Pandemic there was overwhelming and increased use of my UHN Patient portal, Canada's largest hospital network and this was a significant increase when we compare prior pandemics, which provides us clear evidence that the portal has been instrumental in delivering care during the pandemic. The survey was sent out by UHN in 2020 September to all the users to understand how the portal is used 83% reported that it was helpful, 55% used to see the PCR result, and 43% looked for lab results and reports. Responders also noted that because of this kind of access, they got time to gather thoughts prior to any discussions with clinical providers. I completely agree with Lo et al, that ability of the patient portal to get engaged with the providers will close the gap that was created due to the pandemic. The article is able to explain with evidence how the pandemic increases the use of digital tools such as patient portals and how they played an important role in providing patient t care.  I also used the patient portal a lot during the pandemic to access my mother's information, it was a hard time for me and my family because my mother had to go through biopsies and lab tests, she was already immunocompromised at that time and we also had a couple of virtual appointments. During this time patient portal made our anxiety lesser as we were able to read the test results quickly and schedule the next appointment without wasting any time and without calling the doctor’s office the next day. I found it easier and safer during that period. I still use it when needed and currently, I am a big fan of it, the lesson we can learn from this article and my personal experience is that we should start using this great clinical system called patient portal to asses information, lab result, and many more and get in contact with providers office if needed so that we don’t have to stay stressed thinking about the tests and lab results, if our loved ones are in the hospital, we don’t have to call the hospital to get updates, we can go to the portal and see everything needed, can gather all the information before talking to the providers

Singer , A. G., Kosowan, L., Nankishoor2, N., protudier3, J. L., Abrams, E. A., & Phung, R. (2021, August 18). *Use of electronic medical records to describe the prevalence of allergic diseases in Canada*. Retrieved January 20, 2023, from <https://aacijournal.biomedcentral.com/counter/pdf/10.1186/s13223-021-00580-z.pdf>

In this article, Singer et al is addressing the importance of Electronic medical records in describing the commonness or frequency of allergic diseases in primary care settings in Canada. The study was conducted from a sample of 1,556,427 patients from 1235 primary care providers. The study found that drug allergy (39%) was the most common allergy, with 14.4% of beta-lactam allergy, 11% having an environmental allergy, and 8% having a food allergy. This dataset provided by EMR can play an important role in exploring the impact of allergies on primary care settings. Disease burdens can be estimated via prevalence rates, highlighting research priorities, guidelines and policies can be created

Allergic condition prevalence rate can be determined by self-report or medical records data, the rate may vary between self-reported and medical record data with self-reported being higher than medical records. The article also mentions that in contrast to administrative claimed datasets, EMRs were able to provide comprehensive records, expedient information, and a better picture of the clinical result and medical encounters. Canadian primary care sentinel surveillance network (CPCSSN) was able to prepare data for quality improvement and research via the data that was documented in EMR. Along with this CPCSSN can characterize patients with allergies that are associated with comorbidities and explore the impact of allergic disease.

Standiford, T. C., Farlow, J. L., Brennen, M. J., Conte, M. L., & Terrell, J. E. (2021, February 23). *Clinical practice guideline (update): Adult sinusitis - sage journals*. Clinical Decision Support Systems in Otolaryngology–Head and Neck Surgery: A State of the Art Review. Retrieved January 22, 2023, from <https://journals.sagepub.com/doi/pdf/10.1177/0194599815572097>

In this article, Standiford et al, presented a study on a clinical decision support system (CDSS) that help clinical workers in decision-making and workflow. CDSS are tools that are designed to enhance health-related decisions with relevant, organized clinical knowledge and patient information so that health and healthcare delivery can be improved. CDS can guide us to the next step of treatment, alert providers, and catch problems like dangerous drug interactions.

The study was conducted in an otolaryngology setting where all the titles were identified via web-based applications and screened by two reviewers, following this, a patient safety and clinical expert and a health information technology and CDSS expert made the judgment and decision for inclusion and exclusion criteria.

The findings were CDS has the capability to provide quality patient care and decrease workload for busy surgeons who wanted to improve their performance and patient outcomes. The best way to leverage CDSS for otolaryngologists is first to identify an area of practice and then participate in the development of systems applicable to the practice. The article also present studies on CDSSs in otolaryngology practices demonstrating that otolaryngologists who utilize CDSSs as early adopters improve patient care, develop valuable data streams, and enjoy the advantage of value-based payment models. EHR that is integrated with CDS tools can also decrease the burden of data collection used for clinical studies. Successful and thoughtfully designed and implemented CDC has the potential of benefitting the otolaryngology practice in diverse settings. In our organization, we have a tool for Diabetes patients used by Nurses and that is called Endotool. Endotool falls under CDC where it gives us direction based on patient glucose, change in diet, and patient use of medication. We then titrate insulin drip based on the direction provided by Endotool. I found this very effective in controlling blood glucose in ICU settings, Nurses don’t have to wait for the providers for insulin orders, and providers have some extra time in doing other important tasks. This has been very helpful to the health care providers so extra precaution and special attention should be given when building and maintaining CDSS.

Shigekawa, E., Fix, M., Corbet, G., Robi, D. H., & Coffman, J. (2018, December). *The current state of Telehealth Evidence: A Rapid Review*. The Current State Of TelehealthEvidence: A Rapid Review. Retrieved January 20, 2023, from <https://www.healthaffairs.org/doi/10.1377/hlthaff.2018.05132>

The article review evidence of telehealth efficiency and its impact on utilization. Clinical areas such as mental health and rehabilitation were reviewed, where telehealth interventions were seen as equivalent to in-person care. The evidence supports telehealth's effectiveness for some conditions but there is still insufficient evidence about telehealth's impact on utilization. Despite this, the research suggests substituting telehealth with office visits will increase the use of the service more broadly. Shigekawa et al, article findings also include that telehealth has the power to increase or improve healthcare access to people living in rural areas where there are transportation problems and those who are facing shortages.

Even though the review was not able to explore the issues due to lack of evidence but the review provides enough evidence that telehealth Is effective for rehabilitation, mental health, and other studied condition.

**Conclusion:**

Clinical systems are used by healthcare organizations for quality improvement, I have presented different clinical systems in my paper, they might have a different role but their overall goal is the same, quality care and employee satisfaction. Patient portal aids in assessing information and staying in touch with providers’ offices, CDS provides support to healthcare providers by providing patient-specific information and knowledge to help provide better care, EMR provides quick and easy access to patient records, and via telehealth, we can get health care from anywhere home, work or shopping center. The purpose of all of them is to provide quality care in an easy way. All the articles are able to give us valuable lessons on their importance and usage, how they can reduce medical errors, reduce costs, improve documentation, increase healthcare access to everyone, and collaborate among providers to provide quality patient care.