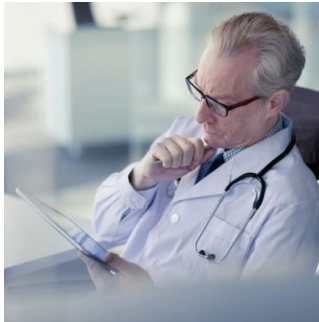

Impact of Telehealth Expansion on Hospital's CDS System



A new study analysed how the pandemic-driven increase in telehealth technologies affected the ambulatory CDS programme at a large medical institution. The results showed clinically significant CDS malfunctions that highlight the importance of reassessing ambulatory CDS performance after the telemedicine expansion.

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Compared to office visits, telehealth-related workflows are substantially different in how members of the care team interact and what clinical data are available to clinicians during a telemedicine encounter. At the same time, clinical decision support (CDS) tools focus on presenting the right information at a proper time to support clinical decision making. With telehealth use increasing during the pandemic, the performance of existing CDS systems should be checked for any possible gaps.

A team of researchers from NYU Langone Health (NYULH), a large academic health care system in New York, USA, set out to analyse the work of the ambulatory CDS programme in the context of telehealth expansion and identified a number of aspects that needed adjustment.

The study's timeframe, from 19 March to 31 May 2020, reflects the early stage of the pandemic, when NYULH had been at the epicentre of the first COVID-19 wave in the U.S. Over that period, the majority of the patients preferred to interact with their care providers through the means of telemedicine. As a result, 59% (244,425) of all visits were telemedicine video visits, and in-person visits accounted for the other 41% (169,651).

The researchers compared CDS alert performance for both online and in-person visits during the period and reviewed workflow of alerts with inferior performance in telemedicine visits. Based on these results, several major themes and performance optimisation opportunities for CDS system were outlined.

Specifically, the researchers looked into alert firing volumes and per-encounter firing rates, actions taken for the same alerts, discrepancies in these indicators, and optimisation opportunities.

The key findings of the study include:

- Even though the number of telemedicine visits was larger than in-office visits, far fewer alerts were firing in the former, which was an unexpected finding.
- During telemedicine encounters, 10 out of 40 most common alerts were not firing as expected.
- The action taken rate was significantly lower for telemedicine visits than for in-person visits (5.3% compared to 8.3%).

Based on these data, the researchers observed the following main themes:

1. Workflows may differ for telemedicine and in-person encounters, hence some alerts initially created for office needs might not have proper timing in a telehealth setting, or lack the data usually provided during an in-person visit.
2. Decreased alert firing rates may be caused by the fact that some clinical data are unavailable during the telemedicine visit.
3. Adjustment of remote patient monitoring and patient-reported clinical data submission may be needed, with collection shifting from in-between visits to the day of encounter. The role of data collection through patient portals (instead of on-site by a nurse) thus acquires a new dimension.
4. Data collection may also be optimised through workflow assessment. For example, office staff could reach out to patients before a

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scheduled telemedicine visit to ensure the availability of relevant data.

The authors note some limitations to their study (e.g. not all types of alerts were assessed), but stress that even with this limited focus they were able to identify some clinically meaningful malfunctions. For those institutions that also have deepened their adoption of telehealth tools since the start of the pandemic, they recommend health informatitians reassess their CDS system's performance.

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