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Impact of Dermatology ECHO on diagnostic and treatment accuracy of PCPs: a retrospective cohort study

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Introduction and Background

Dermatologist shortages in rural areas negatively effect access to high-quality specialty care. Primary care providers (PCPs) have limited dermatological training, which may lead to misdiagnoses, delayed treatment, and later-stage skin cancer detection. This variation in care may also increase health care costs and influence patient outcomes. The applications of tele-dermatology and tele-mentoring have a potential to reduce rural-urban healthcare disparities with minimal increases in costs.

What is Dermatology ECHO?

Dermatology Extension for Community Healthcare Outcomes (ECHO) project provides tele-mentoring and education using virtual didactic presentations and real-life case-based learning (Picture 1).



Picture 1: Dermatology ECHO session

Research question

Does participation of PCPs in Dermatology ECHO affects their diagnosis and treatment accuracy over time?

Methods

We completed a retrospective cohort study, analyzing data collected from 2015 to 2021 (6.5 years) (Figure 1).

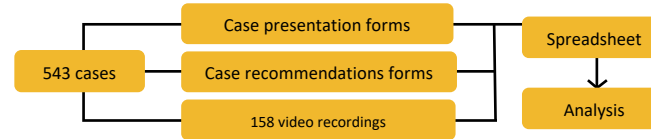
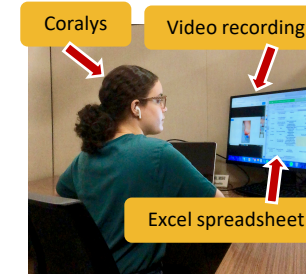


Figure 1: Methodology diagram

A total of 543 cases were collected from PCPs' case presentations, Dermatology ECHO hub team's case recommendation forms, and 158 video-recorded sessions on a spreadsheet for analysis.



Picture 2: Data collection

Results

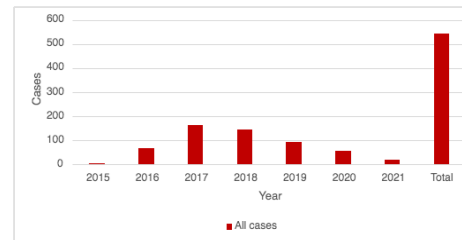


Figure 2: Cases presented each year in Dermatology ECHO

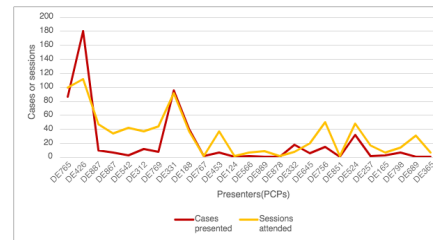


Figure 4: Cases presented and sessions attended by PCPs

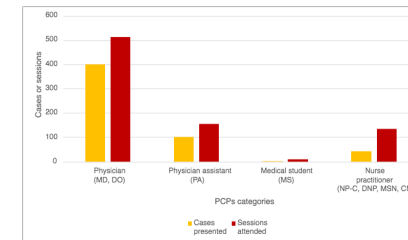


Figure 3: Cases presented and sessions attended by PCP categories

•**Figure 2:** Illustrates how many cases were presented each year for a total of 543. In 2019 the sessions switched from weekly to biweekly, and 2021 cases were collected until June 4.

•**Figure 3:** It can be observed the cases presented and sessions attended by PCP categories, having the physicians (MD, DO) a higher number of cases presented and sessions attended.

•**Figure 4:** The relationship between cases presented and sessions attended is similar.

Discussion

The ongoing tele-mentoring and longitudinal attendance by PCPs show that attendees appreciate and value Dermatology ECHO. We also observed a high volume of case presentations, indicating the need for dermatologic education support from the specialists. Continuing programs, such as the Dermatology ECHO it is essential for providing continuing education and decreasing health disparities in rural communities.

Future steps

Future analyses will be done by August to identify individual provider temporal diagnostic and treatment accuracy. Our hypothesis is that there is a positive correlation between attendance in Dermatology ECHO and the accuracy of diagnosis and treatment.

Acknowledgments

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