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Title: Impact of Dermatology ECHO on improved diagnostic and treatment accuracy: 6.5 year period

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Dermatologist shortages in rural areas negatively affect access to high-quality specialty care. Primary care providers (PCPs) have limited dermatological training, leading to increase in misdiagnoses, delayed treatment, and later-stage skin cancer detection. This variation in care may increase health care costs and negatively affect patient outcomes. The application of teledermatology has been proven to reduce disparities in health care without minimal additional cost. Other applications of teledermatology may also include for training and educational purposes. This, in fact, is the focus of Dermatology Extension for Community Healthcare Outcomes (ECHO) project. In order to provide tele-mentoring and education, Dermatology ECHO offers virtual didactic presentations and case-based learning. We studied the impact of Dermatology ECHO on the accuracy of diagnosis and treatment of participating PCPs. A total of 543 cases were analyzed from 158 Dermatology ECHO sessions over a 6.5 year period (December 4 of 2015 to June 4 of 2021). Of 543 cases, 96 (18%) were removed due to missing information leaving 447 (82%) of data used for final analysis. The data extraction included demographic information (presenter name, patient ID, clinic location, data of clinic, gender, age, race, ethnicity) and symptomatology and diagnosis (timeline of symptoms, location/site of lesion, primary question by presenter, provisional diagnosis, final diagnosis by the hub team(dermatologists), previous treatment and suggestions for treatment by the hub team). 25 PCPs presented all cases. The data was collected from case presentations from participants' PCPs, case recommendation forms from the hub team, and video recording sessions. Future analyses will be done by August to identify individual provider temporal diagnostic and treatment accuracy. We hypothesize that there is a positive correlation between attendance to Dermatology ECHO, by PCPs, and the accuracy of diagnosis and treatment.