



# CALIFORNIA STATE SCIENCE FAIR 2017 PROJECT SUMMARY

<b>Name(s)</b> Nishita S. Belur	<b>Project Number</b> <b>J0803</b>
<b>Project Title</b> <b>A Tele-Health Amartphone App to Virtually Prescreen and Connect Rural Patients in Underdeveloped Countries with Doctors</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The goal is to develop a telehealth, nonprofit app that virtually connects patients in rural parts of underdeveloped countries with volunteering doctors and mobile hospitals, with the help of a health care worker or volunteer. The app will prescreen a patient to diagnose if the patient's condition requires professional personal medical (surgical/non-surgical) attention or not. Lack of health care in rural, poverty-stricken areas of underdeveloped countries in the world is a serious problem that requires immediate attention. 10 million rural children, who did not have access to doctors nearby, died last year from illnesses which could have been treated or prevented if they had been diagnosed early. Many developing countries usually do not have enough access to staff and healthcare equipment to offer healthcare to the patients most in need. The doctor to patient ratio in underdeveloped countries is 6 times less than in developed countries. In poor regions, pregnancies and deliveries are often very risky and unhygienic, due to lack of local physicians. Furthermore, many mothers die leaving behind a newborn who will be 10 times more at risk of dying before his/her fifth birthday.</p> <p><b>Methods/Materials</b> The materials used in this project are: the App Inventor 2 programming language, a MacBook Pro Version 10.12.2, and a Nexus 7 Android Tablet. First, I created a flowchart and an algorithm for the app. I developed the app using the App Inventor 2 tool and the laptop. I then created test cases to test the app on a smart phone, and listed all the bugs in the app. I then debugged and fixed the program and uploaded the app onto Google Play Store.</p> <p><b>Results</b> The prototype app was used in real-time at Mobile care unit of M.M. Joshi Eye Institute, India where the app proved fully functional. The file size of the application software was 1.97 MB. The cost of developing the prototype was \$145. The loading time was less than 5 seconds and did not drain a considerable amount of battery power. The estimated time to design and test this product was 3 months.</p> <p><b>Conclusions/Discussion</b> My science project was successful. I was able to develop a novel, innovative, tele-health, nonprofit, smartphone application to virtually connect rural parts of underdeveloped countries with volunteering doctors and mobile hospitals, with the help of a health care worker or volunteer, to prescreen patients in need of professional, personal, medical attention.</p>	
<b>Summary Statement</b> My project is a tele-Health smartphone app to virtually prescreen and connect rural patients in underdeveloped countries to volunteering doctors and mobile hospitals, with the help of a health care worker or volunteer.	
<b>Help Received</b> None. I developed and tested this smart phone application on my own.	