

Mobile Technology Innovation in the US Pacific Islands: Guam's Use of Asynchronous Video Directly Observed Therapy for Tuberculosis

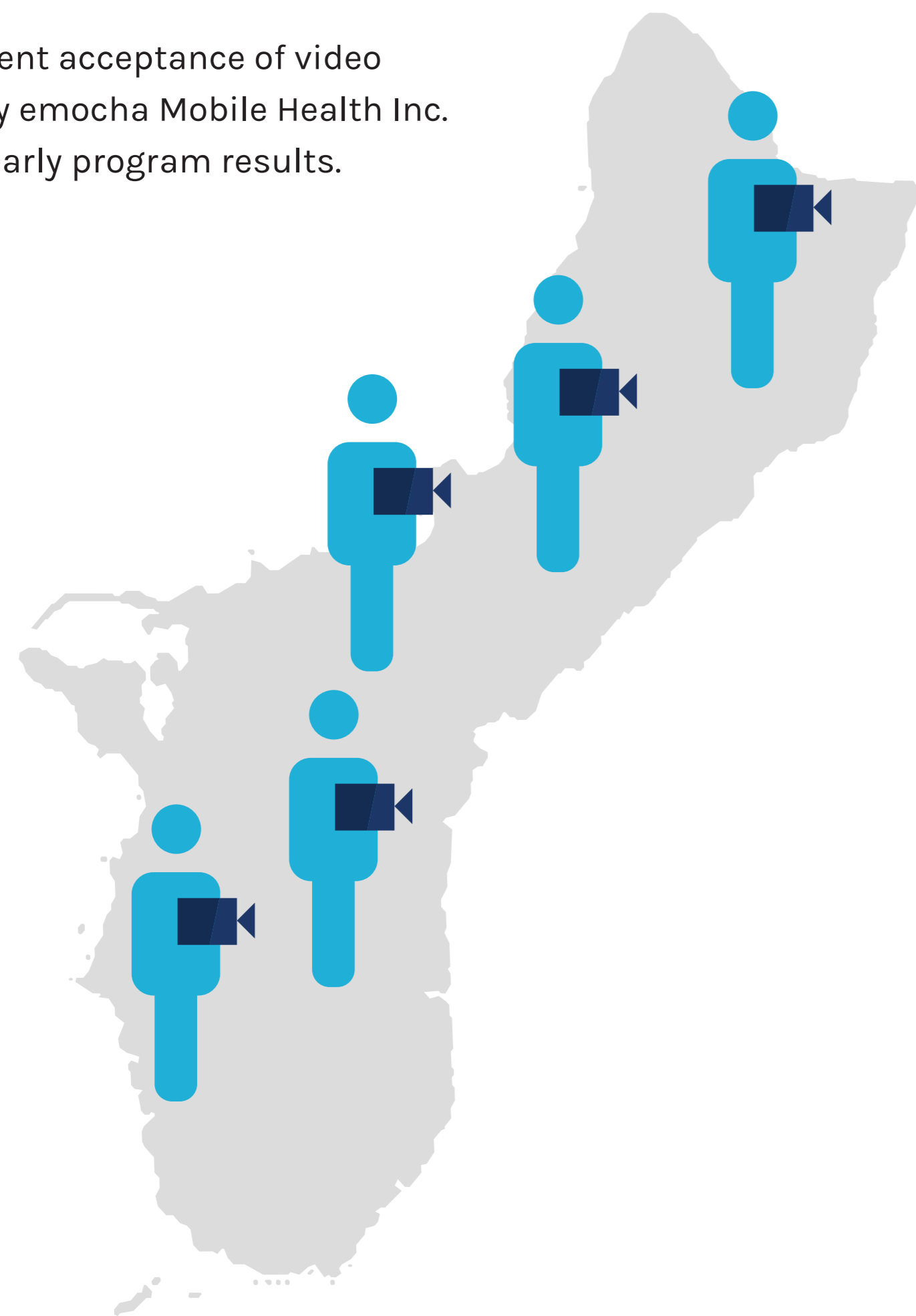
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BACKGROUND

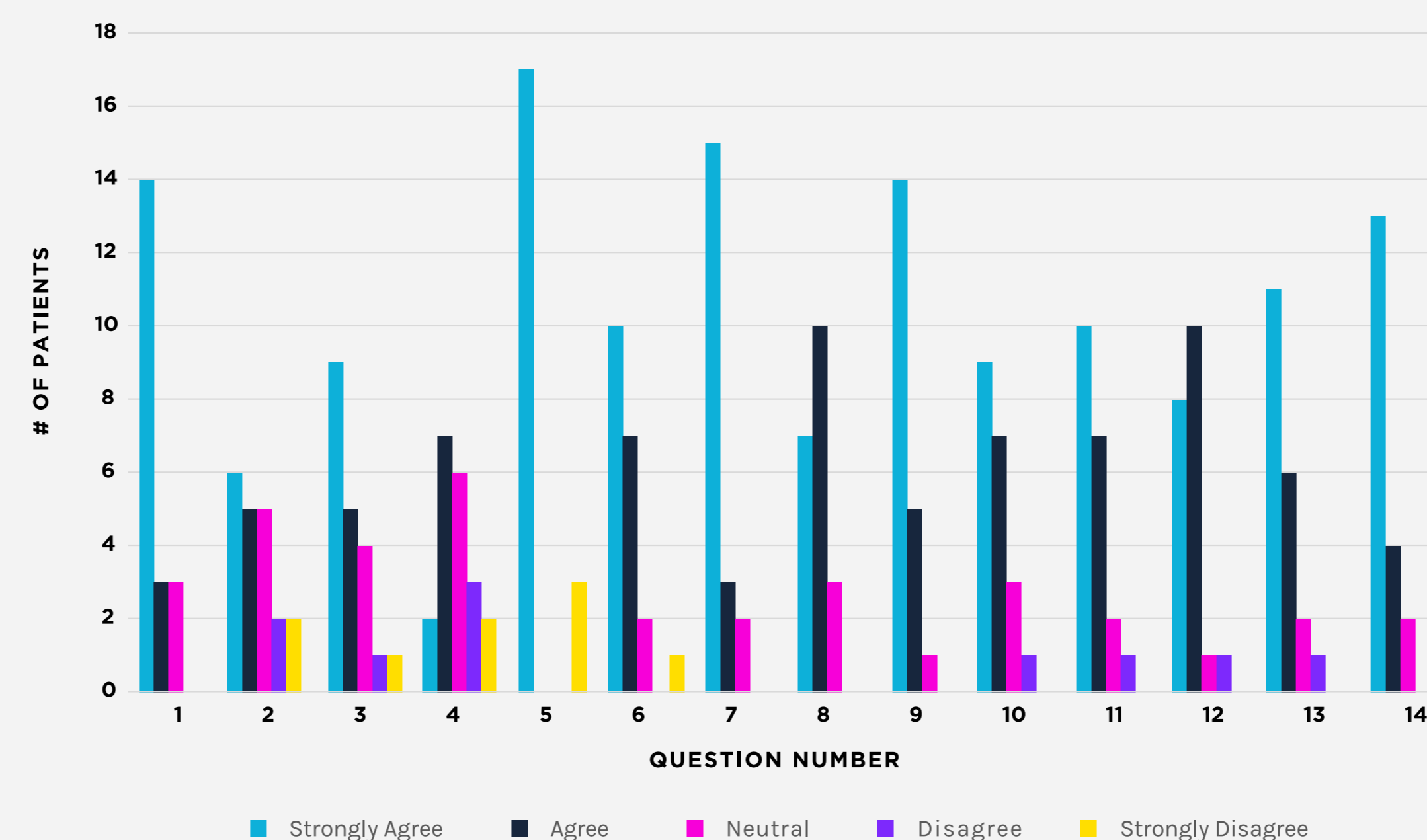
In 2017, Guam had a tuberculosis (TB) case rate of 50.2 per 100,000 residents compared to the mainland US rate of 2.9 per 100,000 residents. Though in-person directly observed therapy (DOT) is highly effective for reducing case rates, concerns of staff safety and stigma have limited its success. The Guam TB program became the first program in the US Affiliated Pacific Islands to adopt the use of asynchronous video DOT to provide more scalable, patient-centered care in August 2018.

PURPOSE

To evaluate patient acceptance of video DOT, provided by emocha Mobile Health Inc. (emocha), and early program results.



RESPONSES TO VDOT PATIENT SURVEY



METHODS

Patients were enrolled into emocha by meeting the following criteria:

- A** Patient has successfully completed at least two weeks of in-person DOT with 100% adherence. A Risk Factor Assessment Sheet has been completed and approved/signed by the TB Physician
- B** Videophone patients must have a stable residence/confidential setting, own a smart phone with WiFi and cellular capabilities
- C** Patient understands the need for TB treatment
- D** Patient is able to pour his/her own medications and accurately identify each medication
- E** Patient speaks a language that may be accommodated by DOT/eDOT personnel
- F** Distance to travel, time of day for DOT and/or other factors make eDOT the best option
- G** Patient does not have any disabilities limiting the proper use of chosen eDOT device
- H** Patient has not experienced any major medication side effects

Confirmed doses were calculated based on the number of accepted videos during this period. Staff time, gas, and driving time saved were calculated based on local rates and average distances to patient homes. Patient satisfaction surveys were done in a cross-section of 20 patients who were contacted by the Guam care team by phone and email between February and March 2019.

RESULTS



Between 8/18 - 1/19 a total of 1417 medication doses have been confirmed from 35 unique patients. This has generated approximately \$21,255 in staff time savings, \$3,457 in gas savings, & over 700 hours of driving time saved to fuel investment in other program areas. Local news outlets have reported early successes of the program & how it can help with other conditions on the island, such as diabetes

Patients reported very high acceptability of the app for video DOT with the following patient qualitative quotes:

"In live in Yigo, so VDOT saves me a lot of fuel cost versus taking TB meds daily in person at Mangilao DPHSS in front of a caregiver."

"It is easy to use and fun experience"

"I will definitely recommend video dot for privacy, faster healing, less feeling depress and the conveniency of not having to drive to public health. Thank you very much for all the assistance you have extended to my care"

CONCLUSIONS



Implementing asynchronous video DOT has increased staff capacity to perform DOT under severe constraints while maintaining high adherence, high patient satisfaction, & generating cost savings. This program serves as a model to other programs in the USAPI region.

ACKNOWLEDGEMENTS

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