Innovation Session (cont.)

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EXPERT OUTPATIENT BURN CARE IN THE HOME THROUGH MOBILE HEALTH TECHNOLOGY

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Purpose: Access to care for pediatric burn injury remains a major public health problem in the US. Telemedicine has an opportunity to improve patient care, but current models are expensive and inefficient. We have developed, deployed and pilot-tested a novel smartphone application (TeleBurnApp) to treat partial thickness burns in the outpatient setting.

Methods: The TeleBurnApp allows the provision of tertiary clinical burn care directly in the patient's home through text and image messaging, video conferencing and instructional videos. After IRB approval, we retrospectively reviewed clinical outcomes and usability in partial thickness burn patients treated using the TeleBurnApp with standard therapy (APP) compared to standard therapy alone (ST).

Results: Burn wound care was provided to 32 patients via the APP and 35 patients with ST. 74% of patients used the TeleBurnApp with no burn wound infections or unexpected returns to clinic or ED. Patients and providers sent 239 store-and-forward pictures (mean, range: 6, 0-34), 529 text messages (16, 0-162), and four patients utilized the video calls (11%). The instructional videos were accessed a total of 155 times (4.2, 0-10). When compared to a group of patients treated with ST, the APP patients had similar burn injury severity (mean %TBSA; ST vs APP: 3.1±2.9 (range: 1-15) vs 3.75±4.5 (range: 1-14) (p=0.48) Age, ethnicity and burn mechanism did not differ. The mean time to healing was shorter in the APP group (days, STvsBA: 14.3±5.4 (range: 6-25) vs 11.6±4.7(range: 5-22) (p=.03) with fewer clinical encounters, STvsBA: 3.3±1.0 (range 2-6) vs 0.93±0.6 (range 0-2) (p=0.001). Compliance with completion of therapy with patients using APP was 80% vs 64% compliance with ST.

Conclusions: We describe a functional, scalable TeleBurnApp in clinical use in a pediatric burn program. Further prospective, randomized studies may validate this mobile health platform, improving access to expert burn care to a vulnerable population.