



## **TELEHEALTH SYSTEM SERVICE IMPROVE DIABETES CONTROL**

Shi-Yu Chen, RN, CDE, Su-Chiung Lin, RN, CDE, Yi-Jen Hung, MD

Metabolic Syndrome Center, Tri-Service General Hospital, Taipei, Taiwan

### **OBJECTIVE—**

To evaluate the combinative effect of telehealth service and SMBG in diabetes control.

### **RESEARCH DESIGN AND METHODS—**

Physicians recruited proper outpatients for the telehealth program supported by FORA TeleHealth System, ForaCare Suisse AG. Diabetes educators teach patients or families to use blood glucose meter and telehealth system platform. Patients received calls periodically and obtained proper and prompt education from diabetes educators. Blood biochemistry was tested every 3 months, final satisfaction questionnaire was filled and all the collected information was analyzed by EXCEL.

### **RESULTS—**

In this one year trail, a total of 60 diabetic patients, 26 males and 34 females with median age at 57 (interquartile range 43-65), were enrolled in this study. Among them, 26 (43%) oral drug treated patients, 4 (7%) insulin pump users and 30 (50%) insulin injection patients, including 15 (25%) beginners, need intensive care and blood glucose monitoring. In general, patients had good HbA1c responds and satisfied with this telehealth service. HbA1c level was dropped from baseline  $9.32 \pm 1.96\%$  (mean  $\pm$  standard deviation) to  $8.45 \pm 1.31\%$  ( $p=0.003$ ),  $8.52 \pm 1.32\%$  ( $p=0.005$ ),  $8.61 \pm 1.59\%$  ( $p=0.016$ ) and  $8.36 \pm 1.20\%$  ( $p=0.001$ ) at each 3-month follow-up. According to the analyzed results of satisfaction questionnaire, most patients agree diabetes educators played important role in this telehealth service system by phone calls.

### **CONCLUSIONS—**

From our study data, mean value of HbA1c has decreased significantly and good feedback of satisfaction questionnaires has confirmed the excellent utility of telehealth service and SMBG. And this service worked better in patients who receive insulin therapy, especially in insulin injection, than oral drug treatment.

This beautiful outcome resulted from an excellent combination with telecare and SMBG. Thus we recommend patients to continuously do SMBG and receive and follow education program more often. Through telehealth system, educators could provide more bidirectional communication services and warm concerns to patients.