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Leading Change: Technology Striving Smart Community Care to Enhance Support to High-Risk Elderly in Community : 3 years' Experiences Sharing

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INTRODUCTION

Hong Kong Hospital Authority (HKHA) reported that 10% of HK population were suffering from Diabetes Mellitus (DM) in 2011, 20% of which were aged over 65. HK citizens with medical needs and under care by HKHA are supported by community nurses for treatment continuum and self-care empowerment in community setting, most of them being frail elderly.

Furthermore, elderly DM patients are prone to have undetected hypoglycaemia which can lead to hospitalization and even death. Self-monitoring of blood glucose (SMBG) at home are generally advised. However, such measure only yields static values, and it is highly dependent on patients' compliance.

Consequently, it can be hard for community nurses to understand patients' real glucose profile to reduce DM complications.

Continue glucose monitoring (CGM) system provides 24-hours monitoring for 10-14 days at a time, illustrating patients' glucose profile clearly. To enhance the quality care to the vulnerable DM patients, NTEC COST conducted a pilot program to use CGM device to support high-risk DM elderly patients in community since August 2020.

RESULTS

There were **116 participants** (mean age 77.8, range: 63-95); 51.7% female (n=60);

Total 357 hypoglycemic episodes detected by CGM;

Pre-post intervention **mean HbA1c dropped** from 8.49% (SD 2.22) to 7.84% (SD1.38); p=0.004);

Pre-post mean Patient **Empowerment Score of DM care improved** from 14.1 (SD 3.28) to 17.7 (SD 2.3); p=0.000).

71.6% patients (n=83) required nursing/medical intervention to improve or stabilize glycaemic condition;

98.2% patients (n=114) did not admit for emergencies related to DM within 28 days after recruitment.

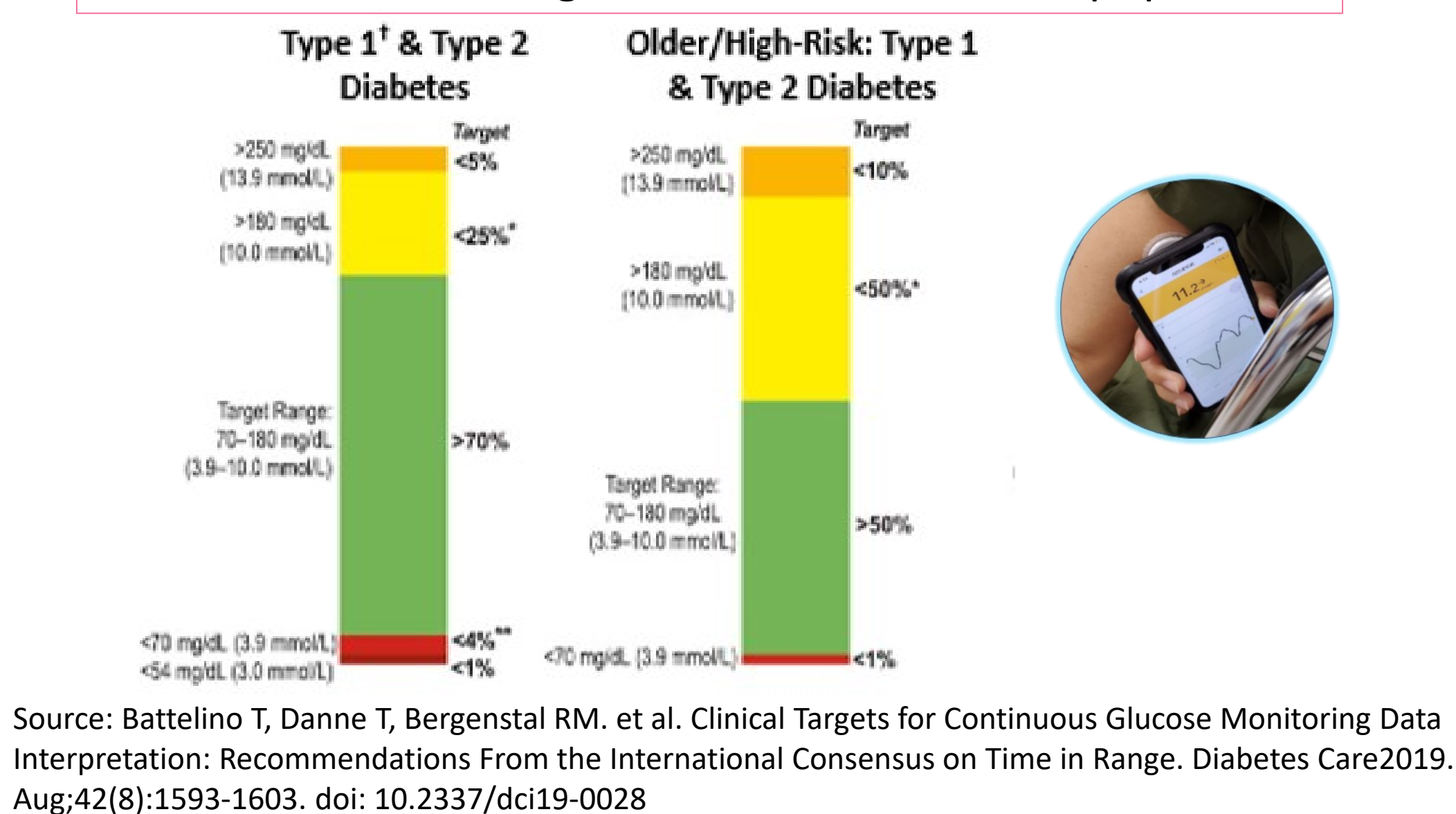
	N	Mean	SD	Min	Max
Pre-Intervention HbA1c	113	8.49	2.22	5.7	15.7
Post- intervention HbA1C	102	7.84🔴🔴	1.38	5.2🔴	13.2🔴🔴

P value
(Paired T test
n=102)
P= 0.004

AIM

1. To detect unawareness hypoglycaemia
2. To prevent avoidable emergency admission
3. To improve patients' self DM management skill

Recommended TIR target for different diabetes population



CONCLUSIONS

CGM demonstrated effectiveness in detecting asymptomatic hypoglycemia. It allowed Community Nurses to initiate interventions timely according to the devices' data.

Patients were markedly motivated in DM self-management with its assistance as evidenced by statistical significantly reduced HbA1c result and improved Patient Empowerment Score after intervention.

It should be feasible to deliver safer patient care with smart technology for high-risk DM patients in the community.

The pilot had been further studied by all HKHA community nurse centers in 2022-23.



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