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S10 - In-depth Cost-effectiveness Study of the Multidisciplinary Risk Factor Assessment and Management Programme (RAMP) of the Hospital Authority

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Introduction: The Multi-disciplinary Risk Assessment and Management Programme—Diabetes Mellitus (RAMP-DM) of the Hospital Authority is designed to enhance management of diabetic patients in the primary care setting.

Aims and Objectives: This study aims to evaluate the cost-effectiveness of RAMP-DM compared to usual care in primary care setting.

Methods: An in-depth cost analysis was conducted by the bottom-up approach, including set-up cost and on-going cost of RAMP-DM, and other healthcare utilisation costs. A longitudinal study was conducted to estimate the effectiveness of RAMP-DM over three years of follow-up. The effectiveness was evaluated in terms of the number of diabetic complications prevented by RAMP-DM within three years and the hazard ratios of developing different complications in RAMP-DM group compared to control group. The cost-effectiveness of RAMP-DM within the three years study period was estimated by both cost per complication prevented and cost per event free year, and the cost-effectiveness over lifetime was simulated by a Markov model at individual level.

Results: For RAMP-DM, the average set-up cost was HKD 35 per patient; the average on-going cost was HKD 202 for nurse assessment, HKD 160 for nurse intervention, HKD 182 for associate consultant intervention, and HKD 122 for allied health intervention. The average programme cost over three years was HKD 807 (range 382 to 1277) per subject. Over three years follow-up, RAMP-DM reduced 87 coronary heart disease (CHD) events, 55 stroke events, 44 end stage renal disease (ESRD) events and 163 all-cause deaths compared to the control group. The hazard ratios of developing CHD, stroke, heart failure, ESRD, and all-cause death were 0.431, 0.641, 0.491, 0.663, 0.415, respectively. Taking both RAMP-DM programme cost and healthcare utilisation costs into consideration, RAMP-DM group was cost-saving in terms of costing HKD 10,301 less per subject and lower the incidence of diabetic complications. RAMP-DM cost HKD 29,820 to prevent one cardiovascular disease (CVD) event and HKD 97,592 to prevent an ESRD event. RAMP-DM intervention costs HKD 17,543, HKD 31,038 and HKD 89,667 to gain an event free year of CVD, heart failure, and ESRD, respectively. Over lifetime, RAMP-DM would have an incremental cost of HKD 11,918 to earn one quality adjusted life year (QALY).

Conclusions: Patients under RAMP-DM had lower risks of having various diabetes-related complications and all-cause deaths over the three-year period. RAMP-DM was also shown to be a cost-effective strategy in managing diabetic patients in both short and long term.