

# Effects Of The MEDISAVE Diabetes Management Programme In Singapore



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**D** iabetes is a complex disease that is associated with an increased risk for cardiovascular disease. To improve health outcomes and contain costs, health systems have implemented disease management programmes to manage patients in accordance to accepted clinical guidelines, patient education, aggressive screening for complications, and early and appropriate specialty referral. Cost can be contained by slowing the development of diabetes-related complications, which can be costly to treat. While individuals value interventions from which an immediate benefit can be derived, benefits from preventive interventions that accrue into the future are often underestimated. Therefore, disease management programmes are often covered by third party payers to reduce expenditures.

► In October 2006, the Medisave for Chronic Disease Management Programme (CDMP) was launched. Diabetes mellitus was the first condition to be covered. In this study, we aim to examine if participants on the CDMP had (1) better compliance with the recommended processes of care, (2) lower risk of all-cause and diabetes-related hospitalisation, and (3) lower total all-cause annual healthcare costs and diabetes-related inpatient costs. We also investigated if the results differed across patient sub-groups according to presence of diabetes-related complications and level of glycaemic control at baseline.

► We compared the differences in compliance with recommended diabetes care processes, hospitalisation, and costs among Medisave CDMP participants and propensity-matched non-participants. Data on patients diagnosed with Type 2 diabetes mellitus who participated in the Medisave for CDMP (n=10,559) and eligible patients who did not participate (n=22,089) were extracted from the National Healthcare Group (NHG) diabetes

registry. Participants and non-participants were propensity-score matched. Process of care, hospitalisation risk, and total healthcare cost incurred in 2007, 2008 and 2009 were compared between groups.

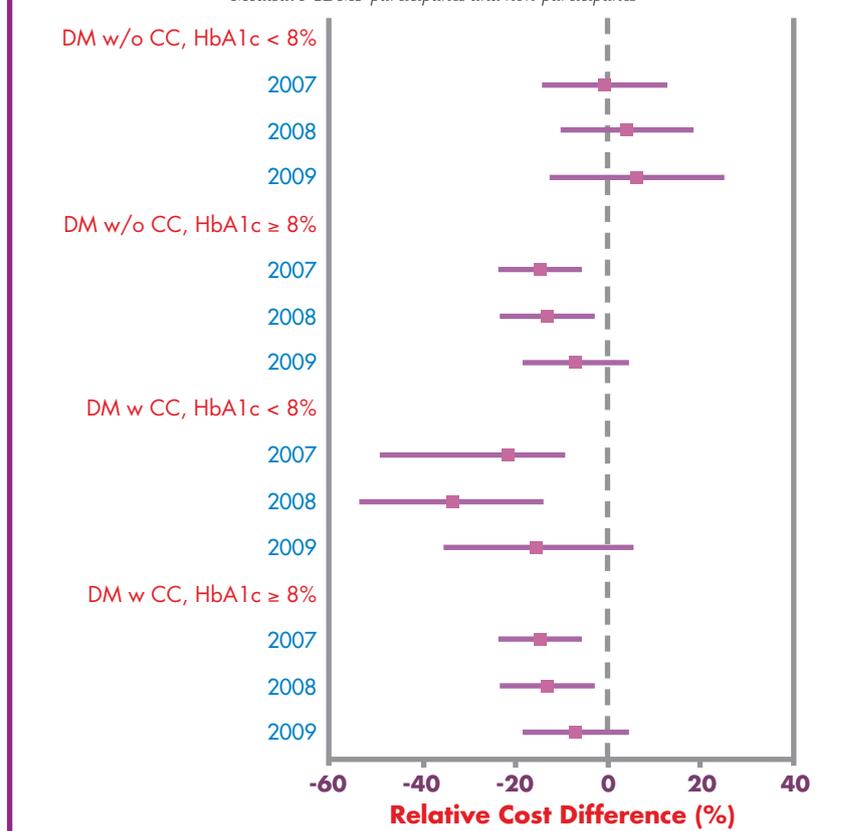
► After adjusting for baseline differences between propensity-score matched sample of 8,881 Medisave CDMP participants and 8,881 unique non-participants, compliance with recommended process of care improved significantly for programme patients. Compared to non-participants, all-cause hospitalisation risk for Medisave CDMP participants was significantly lower in 2007 (OR: 0.76; 95% CI: 0.65-0.88) and 2008 (OR: 0.79; 95% CI: 0.68-0.92) but the difference was not statistically significant in 2009 (OR: 0.91; 95% CI: 0.79-1.05). Total healthcare cost was 14-15% lower for participants in 2007 and 2008 but not significantly different in 2009 (Figure 1). Similar results were observed for diabetes-related hospitalisation rates and inpatient costs. The policy did not have a significant impact on participants with well-controlled diabetes at baseline.

► The change in policy is a necessary step towards addressing the misalignment in

health and economic incentives between acute and outpatient settings. Compliance with the processes of diabetes care improved among Medisave CDMP participants in a primary care setting. Overall, the policy reduced hospitalisation risk and total healthcare cost in the short-term but effects were not sustained by the third year. Our results also suggest that the policy had varying impacts on different patient subgroups. The likelihood of hospitalisation and health care cost of participants who had well-controlled diabetes were not reduced.

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Figure 1 – Difference in annual all-cause total healthcare cost between Medisave CDMP participants and non-participants



DM: Type 2 diabetes mellitus; CC: complications