



# Optimizing Glycemic Control: A Multidisciplinary Team Approach

SingHealth

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Team Leader : SSN Tan Kwong Kent  
 Co- Leader : APN Lee Chu Foon  
 Team Members : Dr Tan Kee Tung  
 Mr Sim Kwang Han  
 Ms Esther Lim Ching Yee  
 Ms Racheal Ong

Senior Staff Nurse  
 Advanced Practice Nurse  
 Associate Consultant  
 Senior Pharmacist  
 Principal Medical Social Worker  
 Montfort Care



Polyclinics  
SingHealth

## Introduction

Diabetes is associated with major morbidity and mortality such as severe microvascular and macrovascular complications. It is responsible for 3.96 million deaths per year globally. Over 400,000 Singaporeans live with the disease. These serious diabetic complications can be prevented or reduce with good glycemic control. In addition, it will help reduce huge treatment costs for these patients.

Aims: To explore the factors associated with poor glycemic control.  
 To improve glycaemic control in diabetics from HbA1c  $\geq$  14.0% to HbA1c  $\leq$  8% with multidisciplinary team interventions.

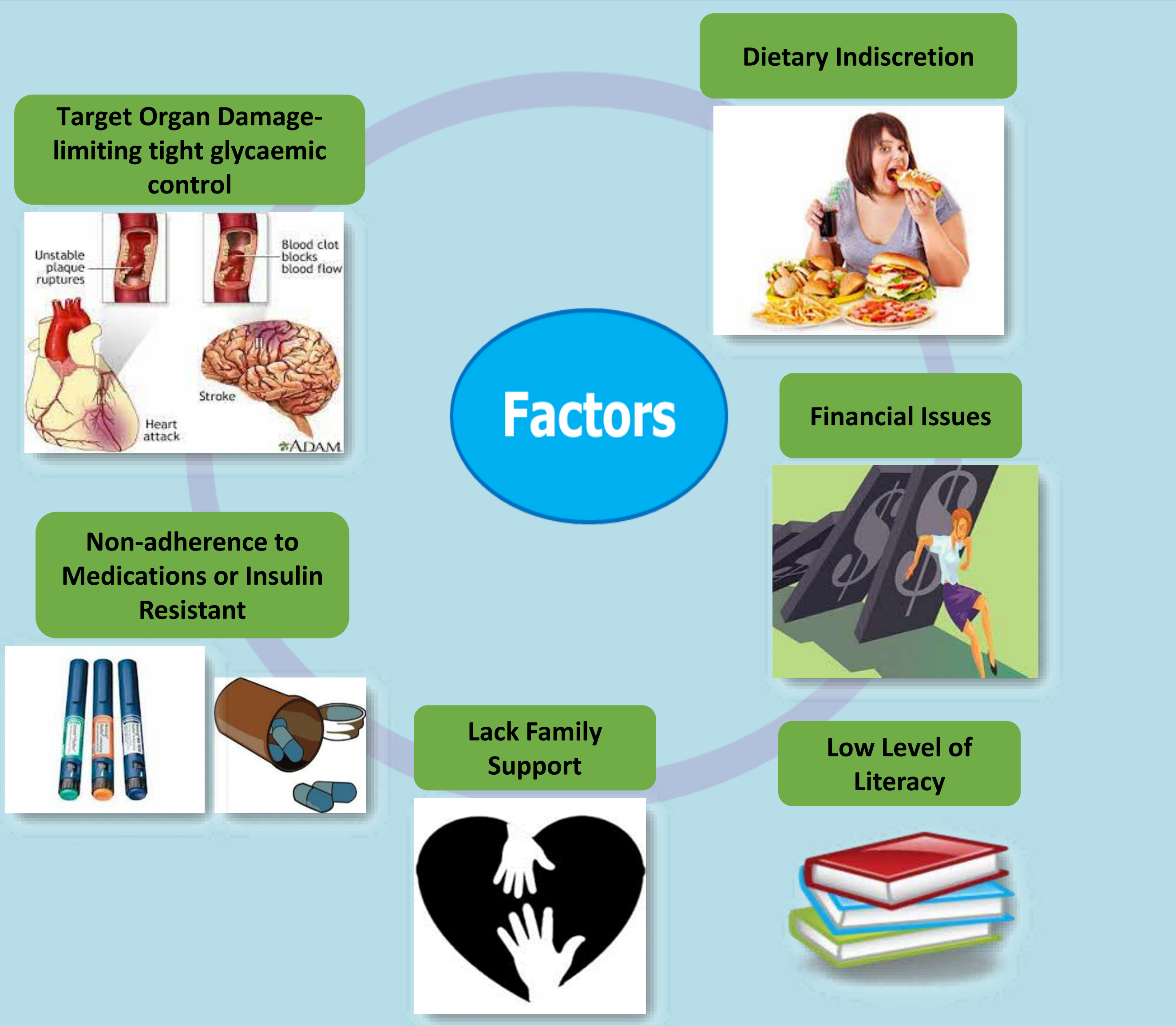
## Methodology

### Structured Improvement Methodology: Intervention 1

The team brainstormed and discussed, to assess barriers to diabetic control and develop a standard team care in managing these patients.

- 30 poorly-controlled diabetic patients with HbA1c  $>$ 8.5%-14% for  $\geq$ 6 months, with psychosocial, financial or lifestyle issue were recruited.  
 These patients were identified and referred by doctors & nurses. Patients were pre-tagged to see nurse in Multi-disciplinary team (MDT), prior to Dr consult.
- Nurses interviewed and assessed patients using SHP MDT Template. All patients were assessed for barriers to good control e.g., psychosocial, financial and lifestyle patterns.  
 Patients are assessed for fall risks, level of literacy and factors affecting compliance to medications and insulin therapy. They are closely monitored for their blood glucose levels, LDL cholesterol and blood pressure.
- Case managers prepared case summaries for discussions, using Plan-Do-Study-Act to evaluate process. MDT discussions were carried out regularly.  
 The outcome of HbA1c was measured and targeted at  $<$ 8%. When target achieved or/and issues resolved, the patient was discharged.

### Factors associated with poor glycemic control

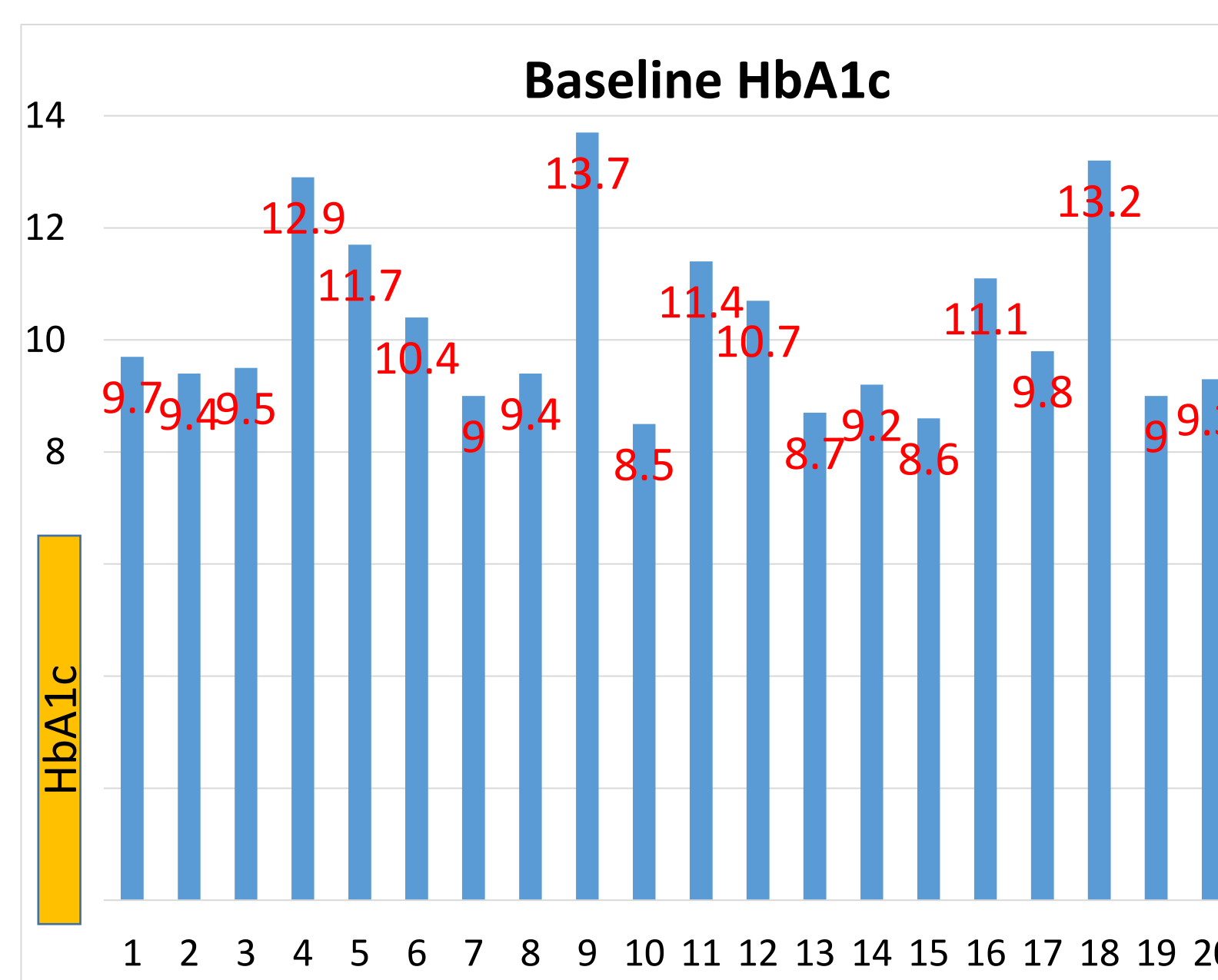


### Structured Improvement Methodology: Intervention 2

Associated issues were identified and categorized into 6 themes as shown in Table below. Care plans were tailored to the patient's needs including individualized counselling, referral to appropriate services and motivation to improve self-care. The clinic collaborated with Montfort Care, Family Service Centre and Senior Activity Centre to improve the community support for this group of vulnerable patients.

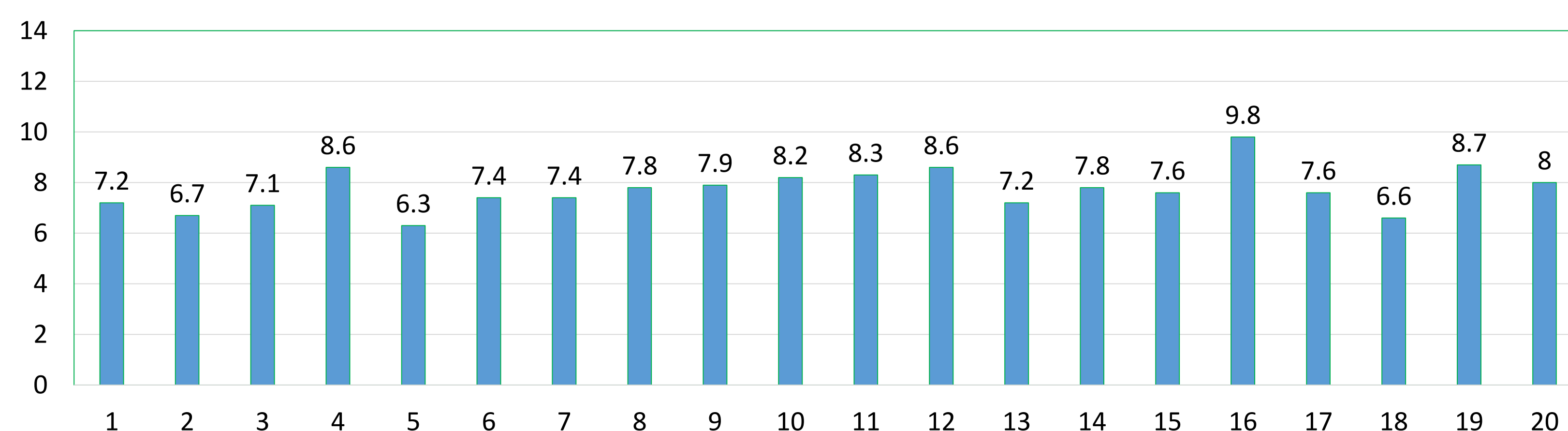
Themes	Interventions
<b>Theme 1</b> Dietary indiscretion	<ul style="list-style-type: none"> <li>24 hrs dietary diary</li> <li>Motivation/refer Dietitian</li> <li>Educate self care management</li> </ul>
<b>Theme 2</b> Lack of Financial Support	<ul style="list-style-type: none"> <li>Medisave</li> <li>Refer Medical social worker</li> <li>Financial assistance:</li> <li>Monetary assistance fund</li> <li>Cost effective medications</li> </ul>
<b>Theme 3</b> Lack Family Support	<ul style="list-style-type: none"> <li>Engage family-</li> <li>Meeting with family</li> <li>Community services:</li> <li>Home visits</li> <li>Day care activities</li> </ul>
<b>Theme 4</b> Low Literacy/Education	<ul style="list-style-type: none"> <li>Diet counselling in dialect/patient's own language</li> <li>Personalized diet counselling</li> <li>Provide pamphlets /simple teaching notes in patient's language</li> </ul>
<b>Theme 5</b> Medications – Non adherence - Insulin resistant - Non adherent - Inadequate dose - Financial issues	<ul style="list-style-type: none"> <li>Refer Financial assistance</li> <li>Motivate/Initiate insulin</li> <li>SMBG</li> <li>Switch basal to pre-Mix</li> <li>Insulin titration</li> </ul>
<b>Theme 6</b> - Target organ damage - Elderly $\geq$ 80 years old	<ul style="list-style-type: none"> <li>Less stringent:Hba1c <math>&lt;</math> 8.0</li> <li>Co-manage with specialist</li> </ul>

## RESULTS & DISCUSSIONS



- 73% had shown an improvement in HbA1c by 0.1-7%.
- 60% of patients had HbA1c  $<$  8% and 13% were discharged with HbA1c  $<$  7%.
- 17% of patients were transferred to other polyclinics/GP, or passed away due to diabetes complications
- Majority had dietary indiscretion. Many have medication adherence issues, related to financial problems and poor family support. They required referral for financial assistance and community support.
- Many of these patients have low education/ literacy levels and needed lifestyle education and financial assistance. All of them had financial social/care issues addressed.
- In addition, during festive seasons, many patients had shown fluctuations in their HbA1c.

Post Intervention HbA1c



## Conclusion

The team interventions were **effective** in improving diabetes in **socially-disadvantaged patients**. It revealed the value of resource and expertise devoted to patients' care. Patients received better quality care and reduced complications, morbidity and mortality.

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MDT Team

Community Resources

Multidisciplinary Case Discussion