UNIT NO. 6

IMPROVING DIABETIC CARE IN A PRIMARY CARE SETTING

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ABSTRACT

The majority of patients with diabetes mellitus in Singapore are seen by family physicians. Good control of glycaemic, blood pressure and lipid levels lead to better outcomes. Three key strategies GP clinics can undertake to improve diabetic care in their clinics are to optimise the clinic; optimise the consultation; and promote self-management by the patient. The chronic care model proposed by Edward H Wagner is useful and practical. It addresses six elements: community resources & policies; GP clinics organisation; self management support; delivery system design; decision support; and clinical information system working as a reminder system, a feedback channel to monitor clinical indicators, and a registry. In optimising the consultation, five C's need attention: control, compliance, complications, counseling/concerns, and customization. Patients with chronic conditions must become the principal caregiver themselves looking after their diet, exercise, lifestyle modification, medication use, and self monitoring. To do these well, patient education to provide an understanding is needed, covering: an overview of diabetes; nutrition, exercise and activity, medications; relationship between nutrition, exercise, medications and blood glucose levels; monitoring of blood sugars, HbA1c and use of results; acute and chronic complications and their prevention; care of feet, skin and dentition; preconception care, pregnancy and gestational diabetes; and use of healthcare systems and community resources. The patient education should be tailored to patient's individual needs. Support groups are also very helpful in bringing patients with similar problems together to share with each other their coping strategies and provide social and psychological support.

INTRODUCTION

Diabetes mellitus is one of the most important health problems worldwide. In Singapore, the prevalence is diabetes is 9.0% based on the 1998 National Health Survey[1]. The prevalence is likely to increase as a result of ageing population, a trend towards unhealthy diet and sedentary lifestyle.

The Ministry of Health had drawn up the first *Guidelines for the Management of Diabetes Mellitus in Singapore* in 1993. The guidelines were updated to incorporate the latest developments in diabetic care in 1999[2]. An updated clinical practice guidelines on diabetes is likely to be released in the near future.

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OPTIMISING THE MANAGEMENT OF DIABETES

The majority of diabetics in Singapore are seen by family physicians at the primary care level. Therefore family physicians play a pivotal role in the management of diabetics. It is known that good control of glycaemic, blood pressure and lipid levels will lead to better outcomes for our diabetic patients.

The care of diabetes is multi-faceted and in many instances requires a team based approach, involving family physicians, nurse educators, dietician, podiatrist etc. Patients with poor control or more complex conditions or complications would require a multi-disciplinary approach involving diabetologist, orthopaedic surgeon, ophthalmologist, renal physician and other specialists.

There are 3 key strategies GP clinics can undertake to improve diabetic care in their clinics:

- Optimising the clinic
- Optimising the consultation
- Self Management

OPTIMISING THE CLINIC

Chronic Care Model

The chronic care model proposed by Edward H Wagner is a useful and practical model to improve chronic care management at the primary care level[3]. This is a multidimensional approach to a complex problem. It encompasses 3 overlapping dimensions namely: (1) the community, (2) the health care system, and (3) the health care providers.

This model identifies 6 essential elements necessary for effective chronic care management.

(1) Community Resources & Policies

It is critical for GP clinics to establish good linkages with community based resources, which includes behaviour modification programmes (smoking cessation, weight management), community groups (e.g. Diabetic Society of Singapore, Sembawang-Hong Kah Diabetes Education & Care Centre, Touch Diabetes Support Association), and other support groups. It is also important to tap on the resources of other healthcare providers e.g. Diabetic Retinopathy Photography services in the polyclinics, community podiatric services, and relevant hospital services. These services are especially useful for small GP clinics with limited resources.

(2) GP Clinics Organisation

The structure, organisation and goals of the GP clinics as well as relationships with consumers, insurers and

other healthcare providers would provide the foundation for an integrated approach towards chronic care management. It is crucial for GP clinics to view chronic care as a priority. In this way innovations and quality improvements are more likely to take place.

(3) Self Management Support

Because diabetes is a self managed condition, strategies focusing on self management is critical to the effective management of diabetes. It is important to have a systematic approach to help patients and their families acquire the necessary life skills and confidence in self management. Family physicians must empower patients and increase patient's knowledge and awareness of the need to achieve good diabetic control. These messages must be refocused from the perspective of the patient rather than from the perspective of the family physician[4].

(4) Delivery System Design

Family physicians must seek to understand how care is being delivered at the clinic level. Who are the healthcare team members and how is care provided by them? A structured system for planned visits/appointments will help improve care rather than a walk in system. Non physician staff could be trained to arrange for routine annual screenings e.g. laboratory tests, eye and foot screening as well as support patient self management.

(5) Decision Support

There are more than sufficient evidence-based guidelines available for the family physicians. More importantly is how such guidelines could be Incorporated into daily routine care. The GP clinics should developed a system of reminders (e.g. reminders slips, colour coding, monitoring charts etc) to assist family physicians and other co-workers in clinical decision. In clinics where resources are available, investing in IT system, which incorporates decision support will enhance the practice even further.

(6) Clinical Information System

A well organised clinical or patient information system is essential for good chronic care management. Such a system serve 3 key functions namely a reminder system, a feedback channel to monitor clinical indicators and a registry so that care can be provided at the individual level as well as at the patient population level.

Ideally such a clinical information system should be electronic, however it is also feasible to re-structure the patient records system to facilitate reminders and retrieval of key clinical indicators.

Clinical quality indicators are essential to enable family physicians to monitor quality of care trends and improvements. The process and outcome indicators as recommended by the MOH Clinical Practice Guidelines for Diabetes Mellitus 1999 are as shown in Tables 1 and 2.

Table 1 : Process indicators and recommended frequency

Performance Parameter	Recommended frequency
Glycated haemoglobin (HbA_{1c})	2-4 times a year
Body weight	at least quarterly
Blood pressure	at least quarterly
* Urine albumin/creatinine ratio	at least annually
+ Lipid profile	at least annually
* Serum creatinine	at least annually
* Eye examination	at least annually
* Foot examination	at least annually
Patient education	at diagnosis and regular intervals

*Notes: * In type 1 diabetes, screening should begin after 5 years of diabetes in pubertal subjects; + Lipid profile is recommended in children older than 2 years after diagnosis of diabetes and when glucose control has been established.*

Table 2 : Recommendations on outcome data to collect

Condition	Data to collect
Eye	Retinal photocoagulation Vitreous haemorrhage Blindness
Cardiovascular	Fatal or non-fatal myocardial infarction Heart failure Angina
Cerebrovascular	Fatal or non-fatal stroke
Peripheral Vascular	Lower extremity amputation
Renal	Renal replacement therapy Death from renal failure
Other causes of death	Sudden death Death from hyper- or hypoglyccaemia

OPTIMISING THE CONSULTATION – THE 5 Cs APPROACH

Consultation for chronic conditions, unlike acute care, requires a more systematic approach so that all elements of care are taken care of. The 5 Cs approach is a simple and practical way to enable family physicians to ensure more effective management of patients with chronic conditions.

(1) Control

One of the key tasks of the family physician in the management of chronic condition is to evaluate and ensure good control. In the case of diabetes, the family physicians should evaluate and ensure good control of glycaemia, blood pressure, lipid levels, and weight.

(2) Compliance

Compliance, which is largely patient dependent, must be assessed routinely during every visit. The family physician needs to work together with patients to ensure compliance with dietary habits, healthy lifestyle habits, medication, follow up, and screening. The family physician must assess the reasons for non compliance (e.g. side effects, poor motivation, drug costs etc).

(3) Complications

There are many associated complications of diabetes. Many of the complications can be relatively asymptomatic

until they are advanced. Hence screening for diabetic complications (cardiovascular, cerobrovascular, renal, eye, feet, neurological) must be done regularly so that intervention or treatment can be instituted early. Complications could also arise as a result of treatment.

(4) Counselling/Concerns

Patient self management and empowerment are critical to the effective management of diabetes. Patients should be counseled regularly on self management and life skills.

There must be opportunities during the consultation to enable patients to highlight their concerns, expectations and fears. The family physician also plays a key role as a motivator and facilitator.

(5) Customization

Management of patients and their conditions must always be tailor to patient's individual needs and expectations. Patients with different co-existing conditions and complications have to be managed differently. There are also social, financial and psychological factors that will influence patient care. The family physician must appreciate these factors from the patient's perspective and work with the patient to formulate an agreed management plan and set realistic goals.

SELF MANAGEMENT

Patients with chronic conditions must become the principal caregiver themselves. Patients are in direct control of many of the key components of the management plan e.g. diet, exercise, lifestyle modification, medication use, self monitoring etc. Studies have also shown self care or personal care with educational and surveillance support will reduce diabetic complications.[4] Self management is often the weakest link in the management of diabetes. Therefore family physician must emphasize the importance of self management and empower patients and their families so as to enable them to manage their conditions proactively and personally.

The MOH Clinical Practice Guidelines on Diabetes recommends that the diabetic education programme should include the following areas of content:

1. Overview of diabetes
2. Nutrition, exercise and activity, medications
3. Relationship between nutrition, exercise, medications and blood glucose levels
4. Monitoring of blood sugars, HbA1c and use of results
5. Acute and chronic complications and their prevention
6. Care of feet, skin and dentition
7. Preconception care, pregnancy and gestational diabetes
8. Use of healthcare systems and community resources

Patient education should be tailored to patient's individual needs. Setting goals with patients focussing both on self care behaviour as well as control targets are important to facilitate compliance[5]. Family physicians should learn to use different techniques to influence behavioural changes[6]. Self management tools should also include personalised action plans and self monitoring of glycaemic and blood pressure.

Support groups are also very helpful in bringing patients with similar problems together so that they can share with each other their coping strategies as well as provide social and psychological support.

Community groups like Diabetic Society of Singapore, Touch Diabetes Support Association and CDC Diabetes Education and Care Centre, Home Nursing Foundation and Diabetic Support Groups provide very useful patient resource materials that the family physicians tap on to enhance patient education. These community groups also routinely organised programmes to reach out to patients and the general public.

CONCLUSION

Diabetes is a chronic condition with the potential severe complications. Effective management can be achieved through a multi-faceted approach. Optimising the clinic as well as structuring the consultation process can improve the quality of care of diabetes. Patient Self management is more often than not a key critical success factor in ensuring good diabetic care.

REFERENCES

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LEARNING POINTS

- **The majority of patients with diabetes mellitus in Singapore are seen by family physicians.**
- **Good control of glycaemic, blood pressure and lipid levels lead to better outcomes.**
- **Three key strategies GP clinics can undertake to improve diabetic care in their clinics are to optimise the clinic; optimise the consultation; and promote self-management by the patient.**
- **Patients with chronic conditions must become the principal caregiver themselves looking after their diet, exercise, lifestyle modification, medication use, and self monitoring.**
- **Support groups are also very helpful in bringing patients with similar problems together to share with each other their coping strategies and provide social and psychological support.**