

Five Years Outcome Review of IPCP Program for Newly Diagnosed Type II Diabetes (Family Medicine Diabetes Triage Clinic) in NTWC

Chan L, Liang J, Ho YY, Ng SY, Chow MF,
Hung V, Ng S, Koo J, Choi P, Law YT, Ng SP
Department of Family Medicine, POH Diabetes Center, Dietetic
Department, Department of Physiotherapy, NTWC

HA Convention 2010

Integrated Patient Care Plan

I P C P (NTWC Model)

Definition:

A comprehensive model using structured multidisciplinary critical pathway, commencing at the point of presentation of illness, from acute phase to rehabilitation phase and extended to community setting. Every indispensable intervention across all these levels of care is systematically planned, coordinated, implemented, monitored & evaluated, so as, to ensure the health care needs of the clients are met.

Current Problems of DM Care

- Increasing prevalent problem
- Lack of structured care for diabetes
- Unbalance demand to SOPD/hospital care
- Prolonged new care waiting time in SOPD
- Potential delayed management
- Internal wastage within HA system



A comparison of diabetes clinics with different emphasis on routine care, complications assessment and shared care

Diabet Med 2008;25(8):974-8.

Comparing the clinical outcomes i) routine diabetes care only (model A), ii) routine care and structured annual complications screening (model B) and iii) annual review and complications screening in a system of shared care with general practitioners (model C).

Data was extracted from the Australian National Diabetes Information Audit and benchmarking (ANDIAB) system.

A total 3052 patients from 18 centers were analyzed.

Centers practicing Model B and Model C have higher rates of nephropathy and lipid screening and better achievement of recommended blood pressure and HbA1c targets.

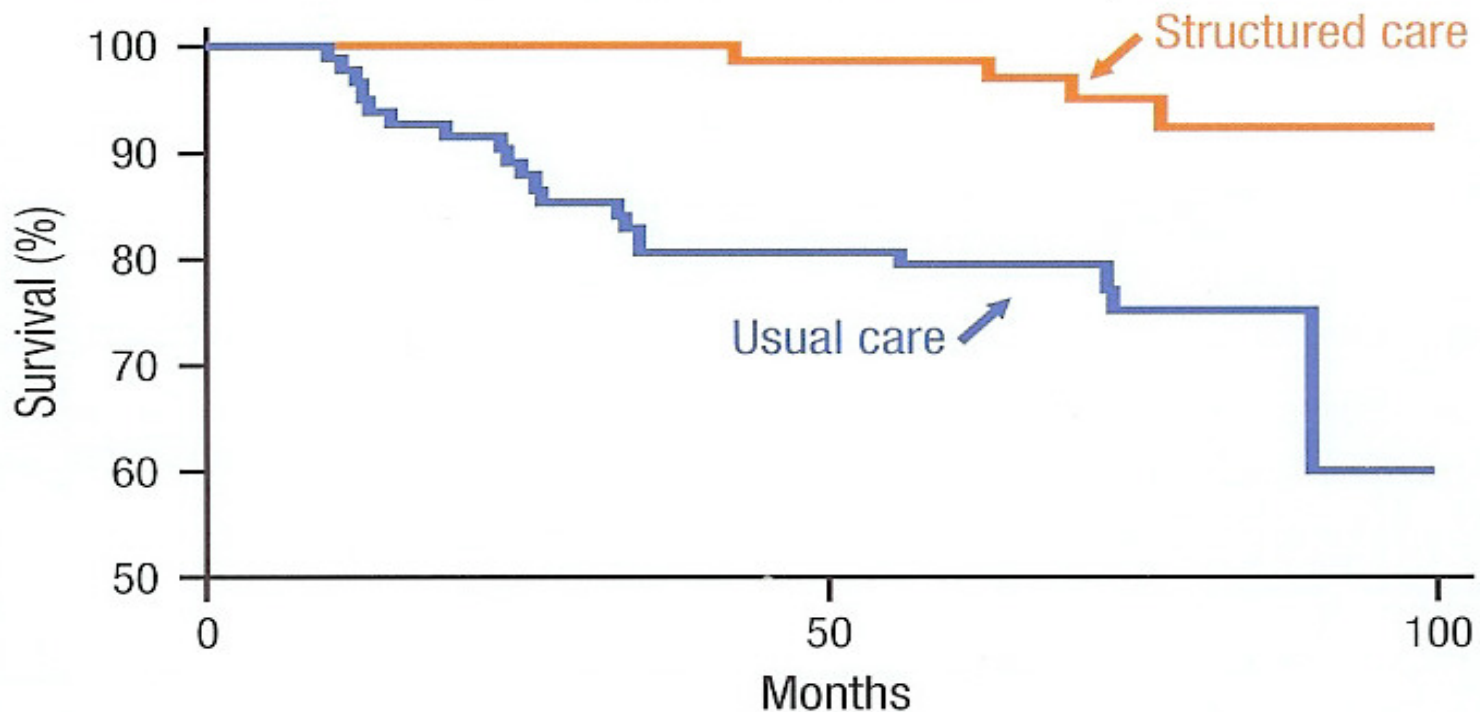
Share care model and chronic disease care model to diabetes where primary care practitioners, with decision support, information systems and patient self management support, was proven to manage most diabetes patients without the need for hospital clinics.



Structured care vs. Casual care

(So WY et al, Am J Manag Care 2003)

Figure 1. Structured care improves survival in diabetic patients*



*2 groups of 80 hypertensive patients with type 2 diabetes matched for age, sex and disease duration

Adapted from reference 4.



SIDOROV J et al., *Diabetes Care* 25:684–689, 2002

Table 1—Demographic, use, and HEDIS diabetes measure variables among 6,799 patients enrolled in disease management (program) versus those not in disease management (nonprogram)

Variable	Program	Nonprogram	Observed statistic	P
n (%)	3,118 (45.9)	3,681 (54.1)		
Demographic				
M/F (%)	1,589/1,529 (50.9/49.0)	1,947/1,734 (52.9/47.1)	$\chi^2 = 2.52$	0.1123
Mean years of age (CI)	69.5 (0.215)	70.9 (0.188)	T = 3.54	0.0001
Months enrollment duration (CI)	56.6 (0.724)	42.5 (0.724)	T = 17.66	0.0001
Pharmacy benefit (%)	1,615 (51.8)	1733 (47.1)	$\chi^2 = 15.04$	0.0001
Insurance type				
Commercial/medicare (%)	771/2,347 (24.7/75.3)	592/3,089 (16.1/83.9)	$\chi^2 = 78.74$	0.0001
Use				
Mean member per month paid charges (CI)	\$394.62 (29.43)	\$502.48 (42.23)	F = 18.61	<0.0001*
Mean inpatient admissions per member per year (CI)	0.12 (0.02)	0.16 (0.02)	F = 4.94	0.026†
Mean inpatient days per member per year (CI)*	0.56 (0.10)	0.98 (0.25)	F = 8.57	0.003†
Mean emergency room visits per member per year (CI)*	0.49 (0.05)	0.56 (0.05)	F = 2.32	0.128†
Mean primary care office visits per member per year (CI)*	8.36 (0.22)	7.78 (0.20)	F = 10.55	0.001†
HEDIS				
HbA _{1c} testing (%)	3,019 (96.6)	3,083 (83.8)	$\chi^2 = 313.44$	0.0001
HbA _{1c} uncontrolled (%)‡	35 (6.7)	79 (14.4)	$\chi^2 = 17.04$	0.0001
Lipid testing (%)‡	2,840 (91.1)	2,856 (77.6)	$\chi^2 = 226.24$	0.0001
Eye screening (%)‡	2,469 (79.1)	2,388 (64.9)	$\chi^2 = 167.83$	0.0001
Kidney screening (%)‡	2,135 (68.5)	1,446 (39.3)	$\chi^2 = 577.0$	0.0001

Data are n (%) or mean (CI), as indicated. *P value controlling for age, sex, presence of pharmacy, enrollment duration, and insurance type; †based on 526 program patients and 548 nonprogram patients; ‡based on 3,118 program patients and 3,681 nonprogram patients.

Our Care Plan

Objectives

- To integrate hospital and primary health care in the care of diabetic patients
 - Seamless care
- To emphasize on patient education & self management
 - Multidisciplinary & structured approach
- To increase capacity of managing diabetic patients
 - Appropriate use of community resources in the cluster



Hong Territories Hospital Authority

FM Diabetes Triage (IPCP-DM) program

- Began in February 2004 in Pok Oi Hospital under the joint effort of Department of Medicine & Geriatrics (Diabetes Team) and Department of Family Medicine of NTWC



Objectives of FM Diabetes Triage (IPCP-DM) program

- To provide timely assessment and management for newly diagnosed diabetes
- To enhance safety of SOPD triage system
- To provide quality diabetes care
- To enhance the aptitude of managing diabetes patients among Primary Care Physician
- To enhance skill transfer between Endocrinologist and Primary Care Physicians



Team Composition

- Endocrinologist
- Family Physicians

- DM Nurse Specialist
- Dietician
- Physiotherapist

- Nurse
- Supporting Staff

Subjects

- **Inclusion criteria**
 - Newly referred non insulin-requiring Type 2 DM with or without CVS complications
 - Never received formal diabetic education
- **Exclusion criteria**
 - Significant mental or physical disability
 - Limited life expectancy/quality of life
 - Co-existing diseases requiring other specialist care

Program Design

Triage of referrals by Triage Nurse

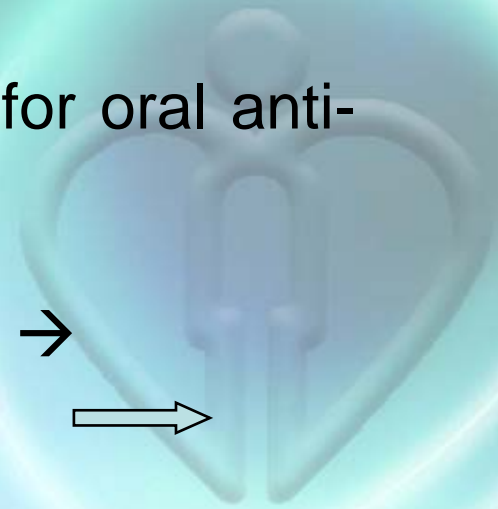
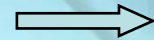
- Requiring medications available in GOPC dispensary list
- Exclude patients on insulin or referred for oral anti-diabetic drugs failure

POH FM-DM triage clinic

- Assessment + Education + Stabilization → Discharge

SOPD/GOPC/private/CGAS

- Long term care according to clinical needs





Essentials of DM care

- Medical nutritional therapy
- DM education
- Self management & SMBG
- Drug therapy
- Periodic monitoring
- Treat-to-target
- Annual complication screening



The process at POH FM-DM clinic

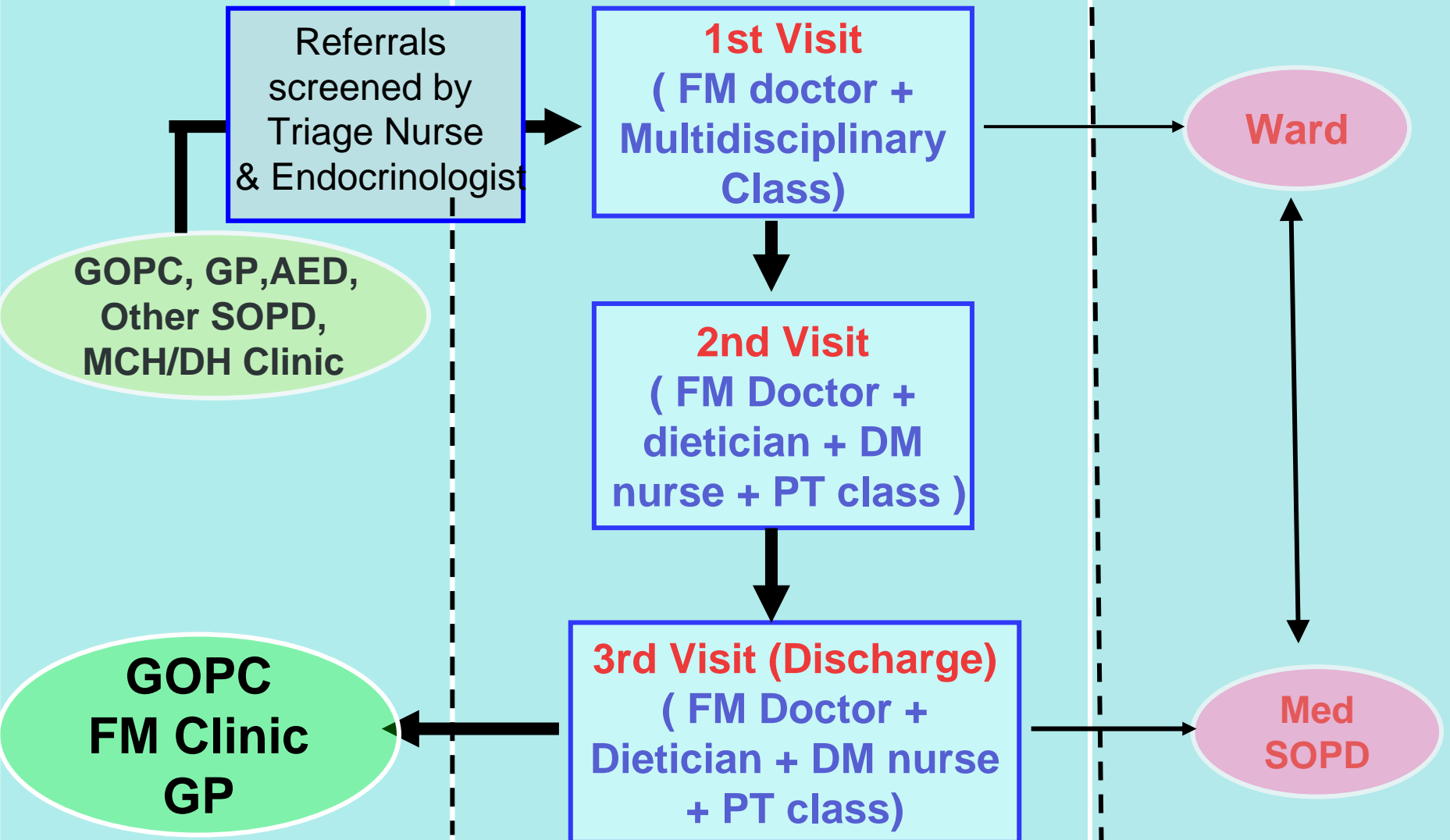
- **Assessment and treatment plan**
 - FM doctor + interaction with diabetologist
- **Dietetic and DM nurse education**
 - 2 sessions for each discipline as minimum
- **Stabilization & optimizing DM control**
 - 3 clinic visits within 6 months
- **Reassessment and discharge**
 - to appropriate clinical services

FMDM (IPCP-DM) Program Flow Chart

Community

FM DM (IPCP-DM) Program

Hospital





Content of Visits_ FM Doctor

FM Doctor: (3rd Visit)

- Assess patient condition, disease status and compliance
 - Review blood test result again for progress
 - Further drug titration
- Secure understanding & commitment to long-term control
 - Discharge patient to appropriate clinical setting with Mx plan & goals clearly stated in discharge letter according to HA DM CPG 2007



Content of Visits_Nurses

DM Nurse (4th Visit):

- Check H'stix (urine x ketone if H'stix >15mmol/L), BP, BW
- DM self-management evaluation questionnaire (Post-test)
 - Re-evaluate patient's knowledge, motivation, compliance to diet/drug/ lifestyle
- Coordinate additional learning needs of patient and family (e.g. smoking cessation class, CRN DM course)
 - Introduce patient support group
 - Re-explain about discharge plan
 - Book appropriate appointment for patients
- Advise patient to have yearly DM complication screening in the referred health care settings



Content of Visits_Dietician

Dietician (2nd Visit):

Individual dietary assessment & counseling

Content of Visits_Physiotherapist

Physiotherapist: (3rd Visit)

- Check exercise compliance.
- Re-assess physical conditions:
 - Hand grip power.
 - Queen's College Step Test.
- Review and adjust goal and exercise program if needed.
 - Discharge patient from exercise program. OR
 - Recruit patient into 2nd tier program (focus group), and arrange further individual exercise sessions.



Outcome measures

- Shorten waiting time for new cases
- Patients receive and understand DM education
- Patients achieve target glycaemic and BP control





Program Uniqueness (1)

- An access for a **structured** and **comprehensive** diabetes service for the newly diagnosed diabetic patients with:
 - **early assessment,**
 - **early intervention,**
 - **patient empowerment, and**
 - **early discharge from SOPD**
- **Multidisciplinary team approach** involving primary care physician, endocrinologist, diabetic nurse, dietitian and physiotherapist.



Program Uniqueness (2)

- Close collaboration between Endocrinologist and Primary Care Physician to facilitate skill transfer,
- Holistic care approach emphasizing on patient empowerment,
- One stop service to facilitate patients compliance and minimize internal wastage of resources due to default
- Efficient treatment progress to facilitate early discharge from SOPD system within three medical visits to appropriate health care settings such as general practitioner, GOPC or SOPC when their clinical condition had been stabilized.

Results

(Feb 2004 to Mar 2009)



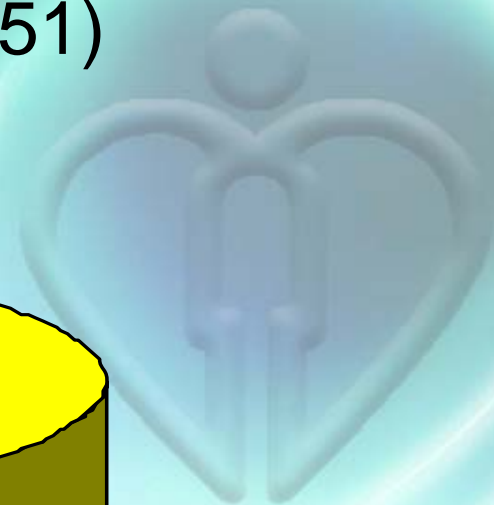
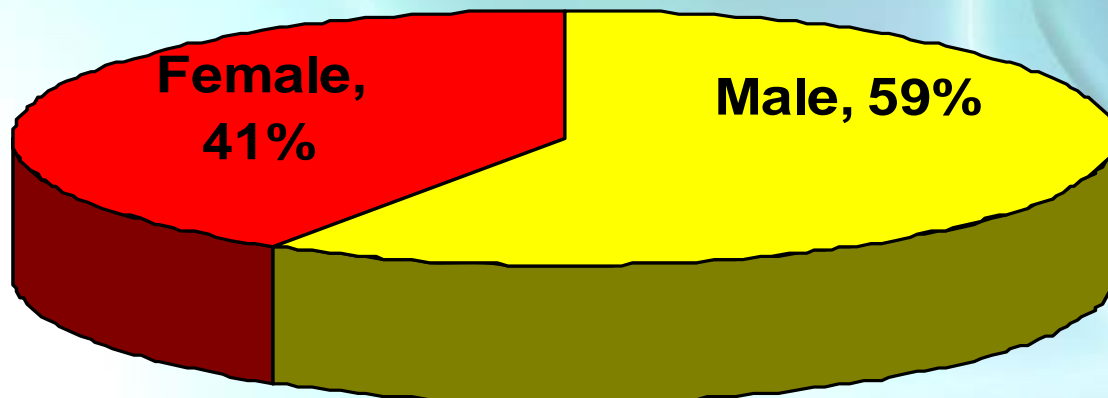


Service outcomes

Number of Patients enrolled: **956**

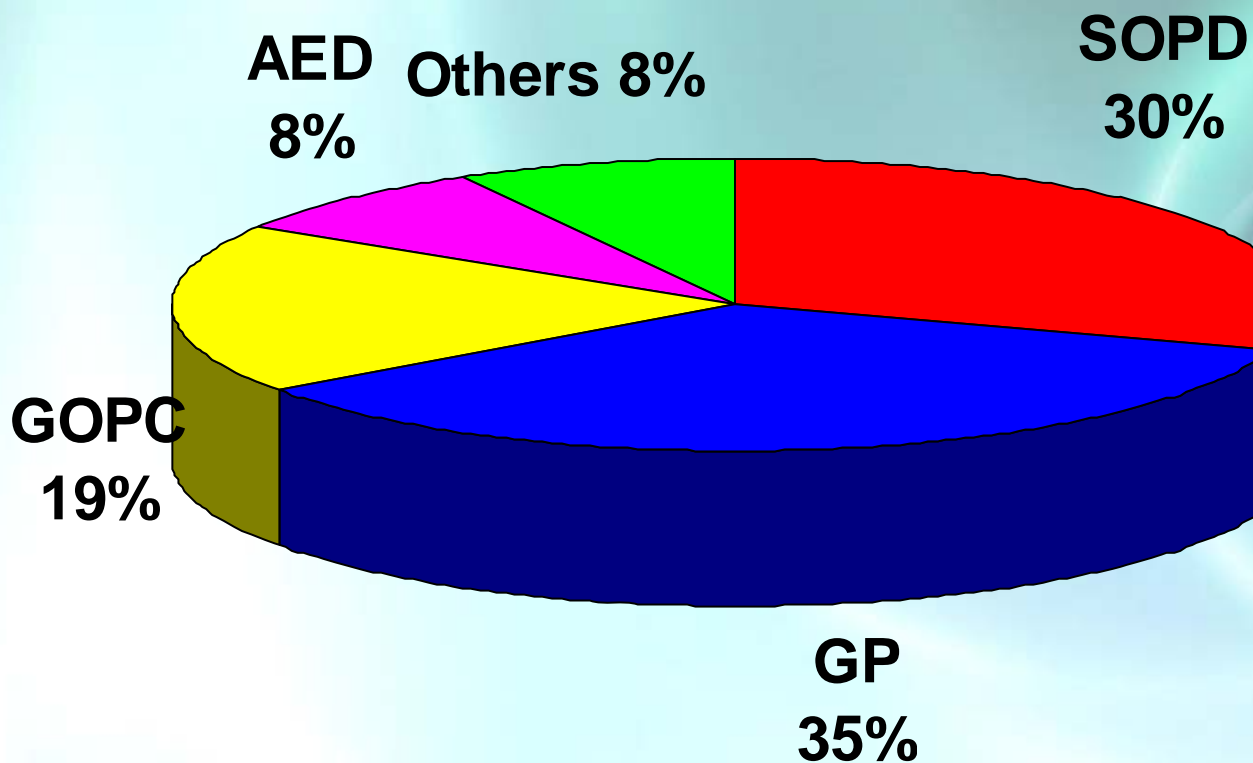
Number of Patients discharged: **810**

Age range 21 – 85 (mean age 51)





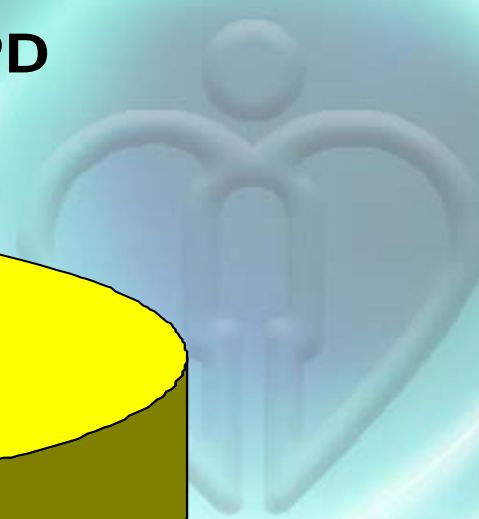
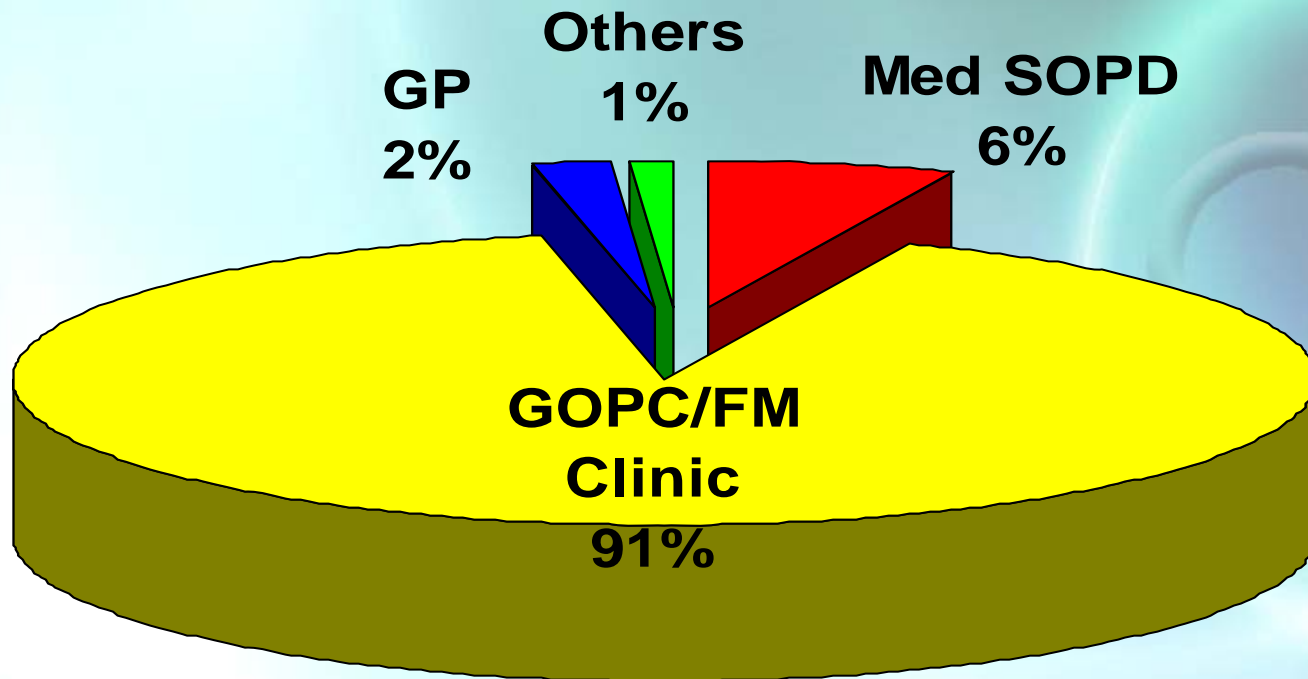
Source of Patients





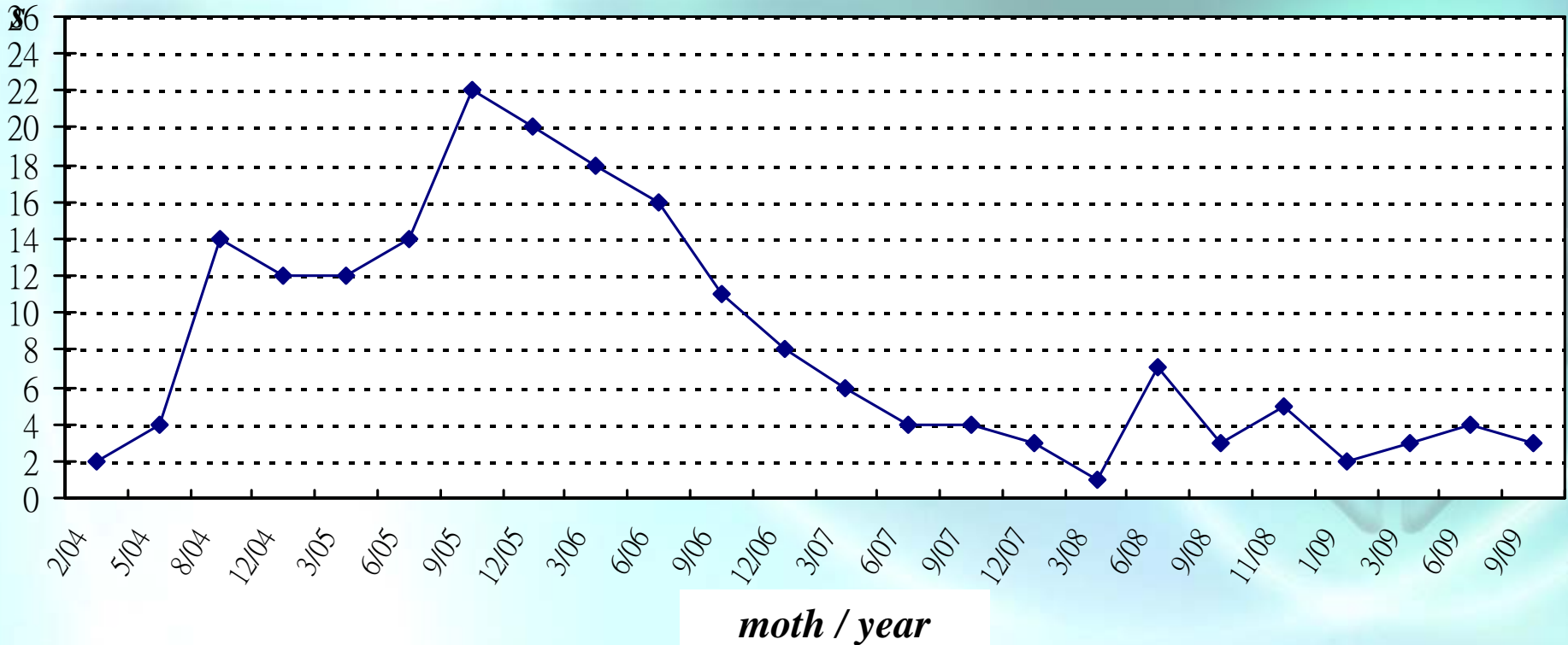
Star Care

Discharge Destination (Total 810 patients)



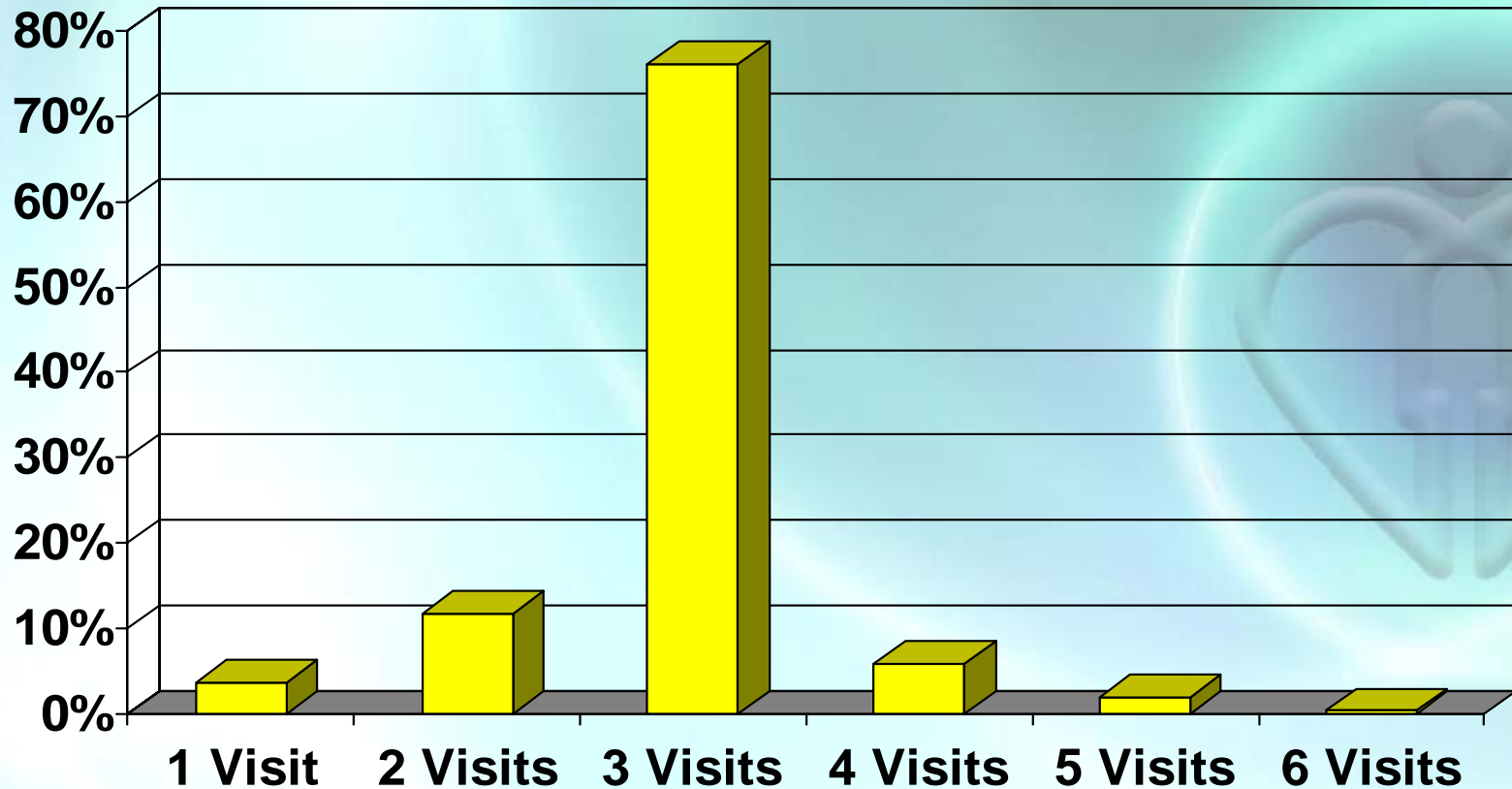
Waiting time of POH FM-DM Clinic (2/04 -3/09)

week



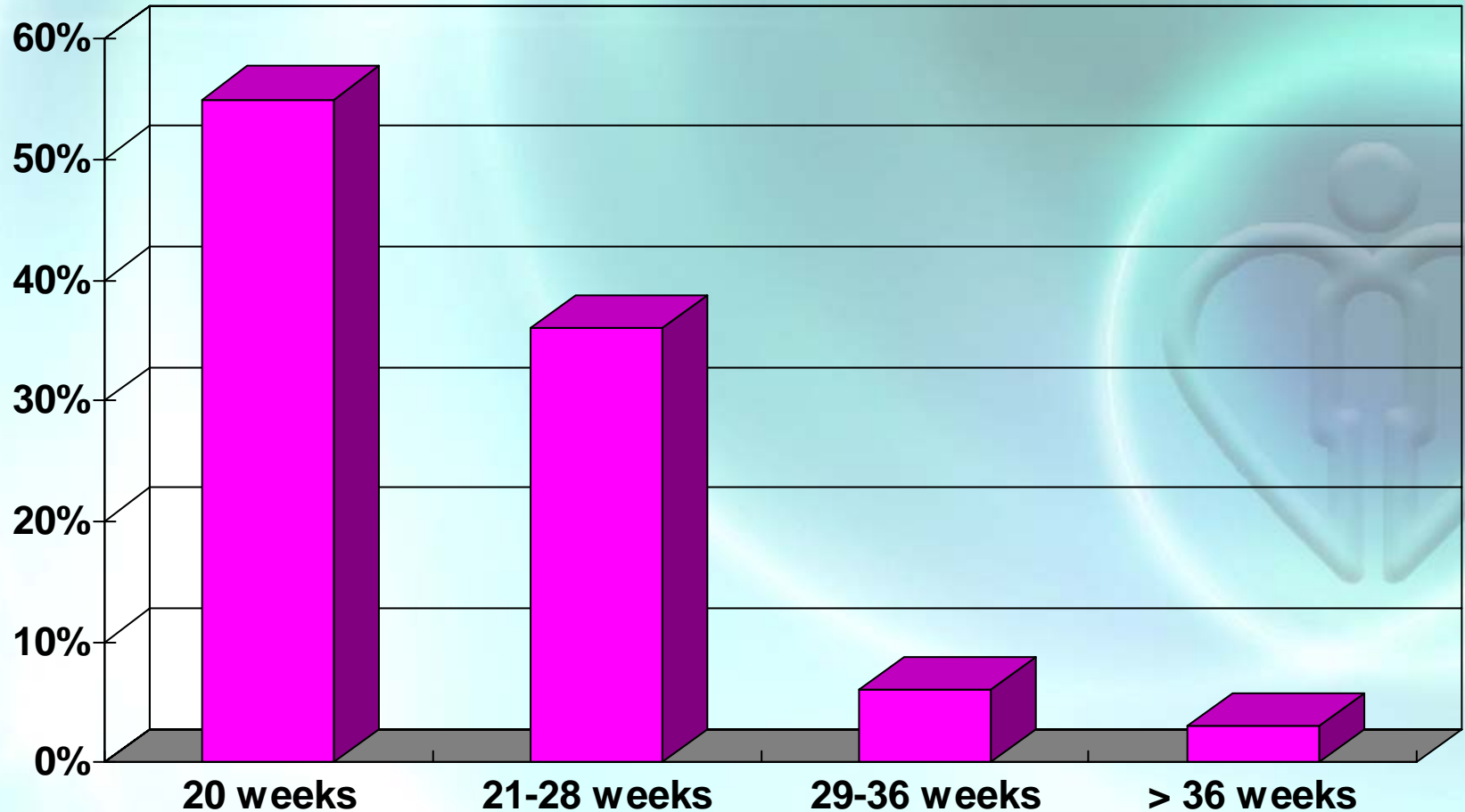
<Comparing to M&G Waiting Time: 28 weeks or more>

Number of Medical Consultations Upon Discharge



Patient Stay (in Weeks) in FMDM Clinic

(Average is 20 weeks)





Patient outcomes

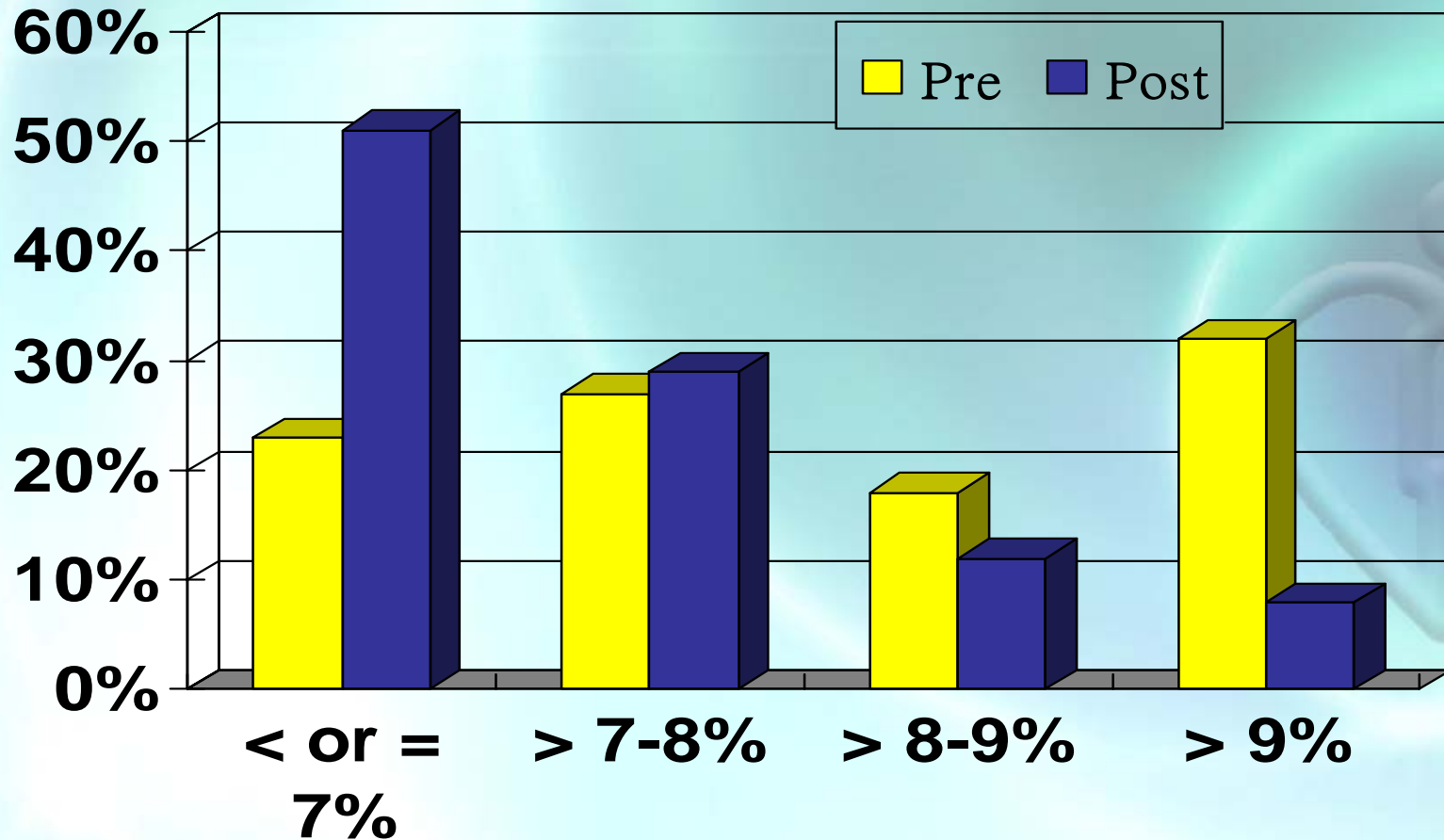
- 99% of patients enrolled had attended the diabetes complication screening,
- 92% attended the DM nurse education
- 94% attended dietetic class



Biochemical Markers (Pre) & (Post)

	Mean (Pre)	Mean (Post)	p value
HbA1c (%)	8.5	7.2	0.000
Systolic BP (mmHg)	131.8	128.6	0.000
Diastolic BP (mmHg)	75.6	73.6	0.000
Body Mass Index	26.0	25.3	0.000
Total Cholesterol (mmol/L)	5.3	5.1	0.000
LDL (mmol/L)	3.1	2.9	0.000
HDL (mmol/L)	1.3	1.3	0.154
TG (mmol/L)	2.2	2.0	0.000

Comparing HbA1c Baseline (Pre) & After IPCP Program (Post)



HbA1c Level



Summary

- 956 patients had been enrolled and 810 (85%) patients had been discharged from the program
- 92% of them were able to be discharged within 3 visits
- Majority was referred from private practitioners(35%) and SOPDs(30%).
- Upon discharge, 90% were discharged back to primary care physicians (GOPCs/FMSC) and only 6% patients needed further management in Medical SOPD/DM Clinic
- Waiting time for FMDM clinic was kept well below 8 weeks since 2006.
- Attendance rate maintained at > 93%
- There were clinically and statistically significant improvement on HbA1c, blood pressure control, body mass index and other biochemical markers.

Conclusion & Way Forward

- The objective of FMDM service (IPCP-DM program) had been met
- The five years result provides evidence to support that structured diabetes care model can achieve both quality care and cost effective care.
- The key to success relate to the collaborations, communications and synergy of the strengths from different expertise.
- There is great potential to apply similar approach for more difficult or poor controlled diabetic patients in future.



Acknowledgement

- Dr Y Y Ho (Endocrinologist)
- DM Nurses and Supporting Staff in POH DM Center
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- Department Heads of M&G, FM, Dietician and Physiotherapy



Thank You!

