QUALITY ASSURANCE INDICATOR

Non-Communicable Disease Control, Public Health Program

USER MANUAL
Quality of Diabetes Care at MOH Healthcare Facilities: Glycaemic Control

T A B L E   O F   C O N T E N T S

W O R K I N G   C O M M I T T E E

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Quality Of Diabetes Care At MOH Healthcare Facilities
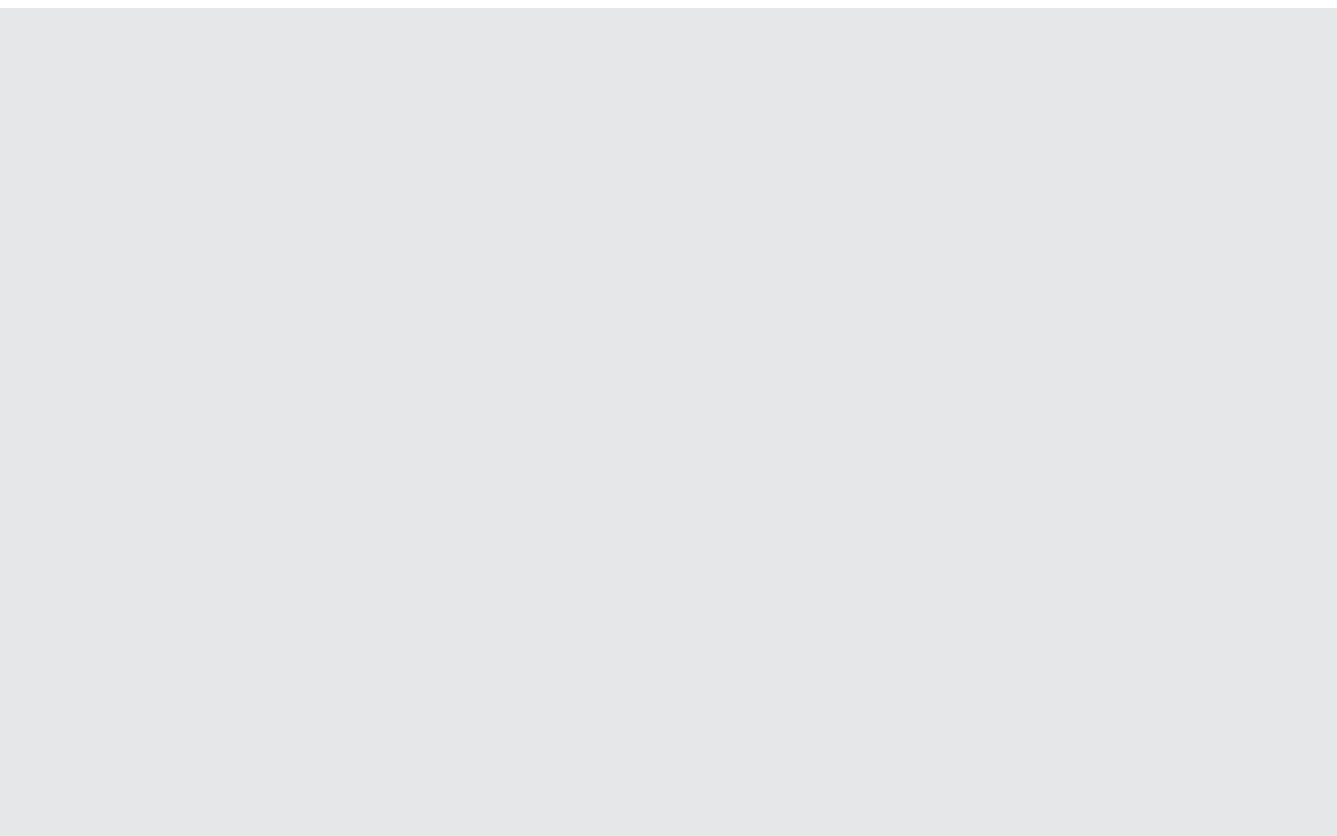
1.0 INTRODUCTION

Diabetes mellitus is a growing public health issue in Malaysia and causes serious disabling complications. The risks of developing these complications can be significantly reduced by optimal glycaemic control; there is substantial evidence that complications of diabetes can be delayed and quality of life for patients with diabetes can be improved through a combination of appropriate clinical management and self-care practices [1,2,3].

As a chronic, life-long debilitating disease, numerous factors influence glycaemic control. Behavioural modification is required from the patient, together with support from family members to help achieve glycaemic control by correct and conscientious self-management [4]. This consists of home blood glucose monitoring, appropriate insulin use, varying nutrition to daily needs and regular exercise. Medical practitioners should treat diabetes aggressively to target, manage other NCD risk factors and conduct frequent medical screening to detect diabetes-related complications early [5].

All of these require much effort, discipline, skill and knowledge from both patients and medical practitioners. Not surprisingly, a considerable number of patients never reaches optimal glycaemic control [6]; less than 15% has normal or near normal glycaemic control and about 25% has poor control [1,7]. Some of the barriers that impede delivery of high-quality diabetes care maybe patient oriented (e.g. financial limitations, transportation and access to healthcare), provider oriented (e.g. lack of knowledge of clinical guidelines, lack of patient contact time) and system oriented (e.g. lack of access to specialty care providers for referral) [8-13].

1.1 Rationale For Selection Of Indicator

The quality of medical care delivered to our diabetes patients at our healthcare facilities is a very important factor in determining glycaemic control among our diabetes patients nationwide as it was shown that about 75% of diabetes patients in Malaysia seek treatment at government healthcare facilities.

The need for a set of standard diabetes care measurements was based on the IHM 2006 study which showed that diabetes care throughout the country is suboptimal. The need for optimal glycaemic control is emphasized by results from the EPIC-Norfolk study, in which the risk of death from all causes (and from heart disease in particular), rose with increasing HbA_{1c} concentration at all levels [8].

1.2 Objective Of Indicator

The main objective of this indicator is to assess the quality of care of patients with diabetes in MOH healthcare facilities (health clinics), using HbA_{1c} level as the proxy. It is important that we improve the number of patients with diabetes to achieve the target glycaemic levels so as to reduce the risk of complications and improve their quality of life.

2.0 FORMULA OF THE INDICATOR

Proportion of diabetes
patients with $HbA_{1c} < 7.0\%$ $=$ $\dfrac{\text{Number of diabetes patients with } HbA_{1c} < 7.0\%}{\text{Total number of cases sampled}} \times 100\%$

2.1 Optimum Achievable Standard

The optimum achievable standard: **≥ 30%**

HbA_{1c} of 7.0% was chosen as the cut-off point for several reasons; firstly because the methodology assesses the diabetes populations receiving treatment rather than individual patients. But importantly, a more pragmatic reason for setting a lower and more achievable target within reach of most health clinics. In addition, the optimum achievable standard was chosen by expert consensus after reviewing several studies in other countries (9-13), while also taking into account present performance using information obtained from the current diabetes returns from MOH health clinics. Both of these cut-off values will be revised accordingly as standards of diabetes care improves over time.

3.0 DEFINITIONS OF TERMS

- **HbA_{1c}**
  Glycosylated haemoglobin A_{1c} (HbA_{1c}) is a laboratory test that shows the average level of blood glucose over the last 3 months. It is currently the best test available for a health care provider to determine whether a person's glucose level is well controlled.

- **MOH Healthcare Facilities**
  Refers to government primary care facilities (or health clinics) providing care to diabetes patients. The service may provided by Family Medicine specialists, medical officers, assistant medical officers & nurses, depending on the type, location, size and patient burden of the health clinic.

- **HbA_{1c} Monitoring**
  HbA_{1c} test is required for every diabetes patient managed in government healthcare facilities at least **once every six months.** However, with current resources, it is only feasibly done **once a year** in majority of health clinics. Patients with no HbA_{1c} results within the past one year from the date of QA data collection will be deemed **as diabetes poorly controlled** ($HbA_{1c} > 7.0\%$).

- **Total Number of Cases Sampled**
  The denominator is the **total number** of diabetes patients audited, not the number of patients with HbA_{1c} results available within the audit period.

4.0 CAUSE-EFFECT ANALYSIS

Poor Diabetes Control

Poor patient attitude
- Failure to recognise symptoms of complications
- Defaulting follow-up
- Poor self-care
- Preference of oral tablets to insulin

Inadequate clinical support facility
- Poor diabetes registry
- Lack of defaulter tracing & home visits
- Poor coverage of laboratory tests
- Lack of trained staff
- Poor counselling facilities

Poor patient knowledge
- Failure to understand the disease
- Failure to accept the disease
- Failure to accept the importance of treatment

Inadequate competency of health care worker
- Poor knowledge
- Not reinforcing compliance to treatment
- Failure to assess patient thoroughly
- Failure to deliver health education

5.0 IDEAL PROCESS OF CARE

Management of Type 2 Diabetes in a Primary Care Facility

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                    ┌─────────────────────┐
                    │    Registration     │
                    └─────────────────────┘
                              │
                              ▼
                    ┌─────────────────────┐
                    │   History Taking    │
                    └─────────────────────┘
                              │
                              ▼
                    ┌─────────────────────┐
                    │ Physical Examination│
                    └─────────────────────┘
                              │
                              ▼
                    ┌─────────────────────┐
                    │Laboratory Investigations│
                    └─────────────────────┘
                        │           │
                        ▼           ▼
            ┌──────────────┐   ┌──────────────┐
            │Counselling and│  │Pharmacological│
            │Health Education│ │ Intervention │
            └──────────────┘   └──────────────┘
                        │           │
                        ▼           ▼
                    ┌─────────────────────┐
                    │ Referral (If required)│
                    └─────────────────────┘
                              │
                              ▼
                    ┌─────────────────────┐
                    │      Follow-up      │
                    └─────────────────────┘
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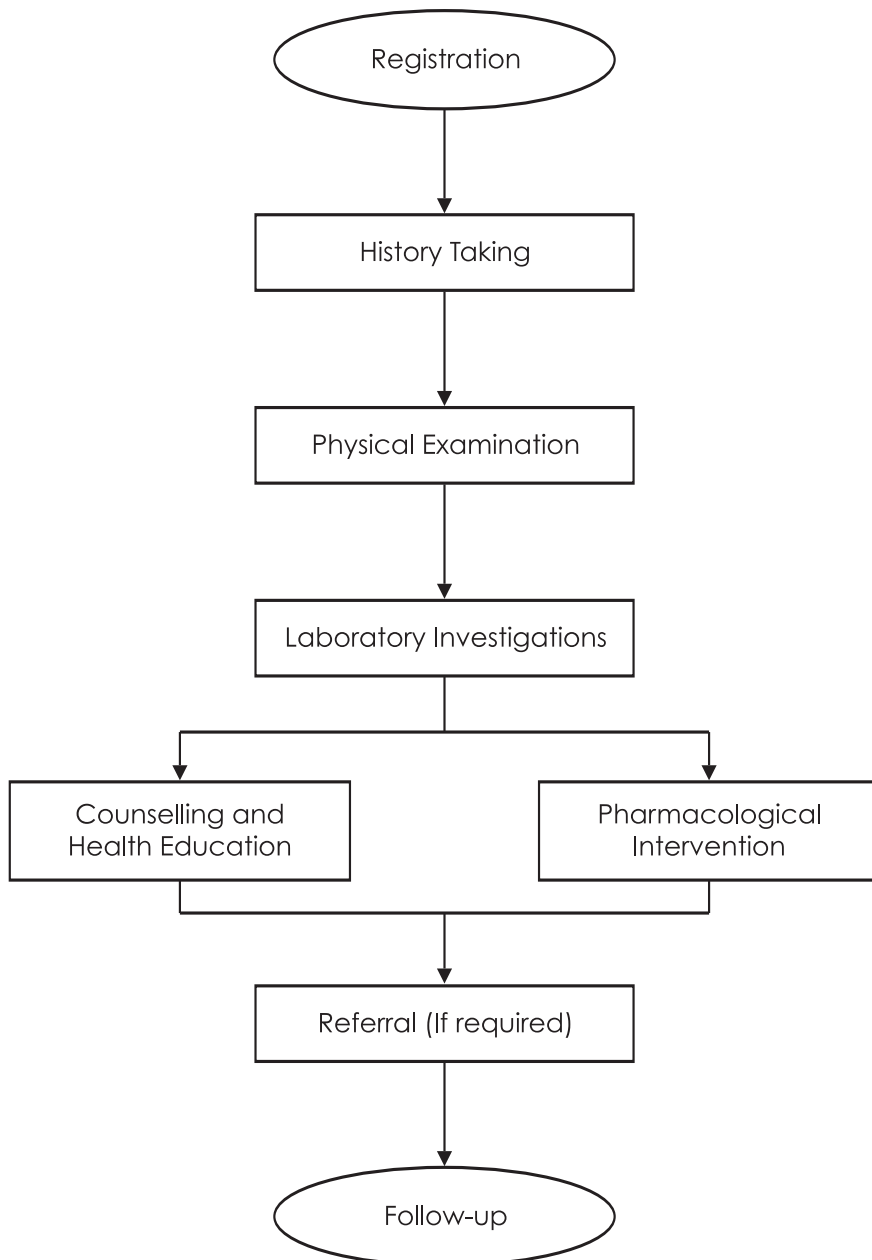
6.0 MODEL OF GOOD CARE

Step No.	Process of Care	Criteria	Standard
A.	**Baseline Data**		
1.	**Registry of Patients**	**All diabetic patients should be registered in diabetes registry in health clinic**	**100%**
B.	**Treatment**		
1.	Counselling & health education	Counselling & health education is given and reinforced by healthcare personnel **during each visit** Contents: • Diet • Exercise • Medication • Complications (acute and chronic) • Self-care/SBGM/foot care • Stop smoking • Problem solving skills • Psychosocial adaptation to diabetes All diabetic patients are educated regarding diabetes complication at least once a year	100% 100%
2.	Pharmacological intervention	All pharmacological intervention should follow criteria in CPG Either oral hypoglycaemic agents or insulin, or a combination of both	100%
C.	**Follow-up Process**		
1.	Assessment of glycaemic control	Either FBS or RBS or 2HPP, each visit HbA$_{1c}$, annually	100% 100%
2.	Recognition of complication	All examinations should be done 6 monthly • HbA$_{1c}$ • Urine albumin • Urine microalbumin (if urine albumin negative) • Sr. Creatinine All examinations should be done annually • ECG • Fundus Examination • Fasting Serum Lipid	100% 100%
3.	Referral to Medical Officer	All diabetic patients must be seen by FMS or MO at least once annually	100%
4.	Defaulter Management	All defaulter cases must be identified and trace or contacted within 2 weeks of appointment date given depending on the severity	100%

7.0 METHODOLOGY OF QA STUDY

7.1 Scope of Study

This QA study will be conducted at all Klinik Kesihatan (of all categories, either with Assistant Medical Officers (AMO), Medical Officers (MO) or Family Medicine Specialists (FMS) providing diabetes services) in each district in Malaysia, and is conducted once a year.

The QA coordinator for each district will be the most senior Family Medicine Specialist (FMS). Should any particular district do not have an FMS, the district Medical Officer of Health may elect the most senior Medical Officer as the district QA coordinator. The district QA coordinator is responsible in ensuring that the QA study is conducted in a timely manner, carried out as per protocol, leads any subsequent SIQ investigations, and ensures that the results are submitted before the stipulated dateline to the respective district health office.

7.2 Time of Study

This study is to be conducted once a year within the time period of **1 to 30 September** annually, following the completion of the Diabetes Clinical Audit.

7.3 Data Collection

This QA study utilises the Diabetes Clinical Audit methodology in sampling and collecting the necessary data on HbA$_{1c}$ levels (please refer to the **"Manual Pengguna, Audit Klinikal Diabetes di Fasiliti Kesihatan"**). Once the audit is completed at the health clinic, the results will be used for this QA study and this includes data obtained from ADCM*. Using the necessary data from the Diabetes Clinical Audit or ADCM*, the QA coordinator will complete form QA/DM/KK/2008 (see Appendix 1), to be submitted to their respective District Health Office, before **30 September**.

In the event of SIQ, the QA coordinator will conduct an SIQ investigation and subsequently submits the results of the SIQ investigation in form QA/SIQ/DM/KK/2008 (see Appendix 1), which is also submitted to the respective District Health Office before **30 September**.

At the District Health Office, the responsible officer will compile forms QA/DM/KK/2008 and QA/SIQ/DM/KK/2008, and after analysis, subsequently complete forms QA/DM/PKD/2008 and QA/SIQ/DM/PKD/2008 (see Appendix 1). The district's Medical Officer of Health will review these QA forms before submission to the State Health Department by **15 October**.

At the State Health Department (Public Health), the responsible officer (Primary Care) will compile forms QA/DM/PKD/2008 and QA/SIQ/DM/PKD/2008, and after analysis, subsequently complete forms QA/DM/JKN/2008 and

*ADCM : Audit of Diabetes Cares Management, Clinical Research Centre

QA/SIQ/DM/JKN/2008 (see Appendix 1). The Primary Care officer and the State Deputy Director of Health (Public Health) will review the returns, before submission to the Quality Improvement Unit, Department of Public Health, MOH, Putrajaya and the Family Health Development Division by **31 October**.

A summary of the process flow of the QA from the clinic to the HQ level is shown in Appendix 2.

7.4 SIQ Investigation

Using the indicator formula, the QA coordinator needs to determine whether an SIQ event has occurred or not. In the event of SIQ, the QA coordinator at each district is responsible for the SIQ investigation. The QA coordinator needs to convene a meeting, involving relevant healthcare personnel from the health clinics and the district health office, to investigate and identify the factors causing the SIQ. Please refer to the **SIQ Investigation Manual** for further details on the methodology of the SIQ investigation.

7.5 Remedial Measures

Based on the findings of the investigation, suitable remedial measures need to be formulated and a plan of action developed for implementation. Please refer to the following documents as references:
i.   Clinical Practice Guidelines for Type 2 Diabetes Mellitus in Malaysia
ii.   Garis Panduan Pengendalian Diabetes di Fasiliti Kesihatan

The remedial measures and recommendations will then be distributed to all clinics in that particular district so that lessons may be learned collectively.

7.6 Report Writing

The District MOH is responsible for the final SIQ report (form QA/DM/SIQ/PKD/2008) to be submitted from each district to the state health department. At the state health department, the Public Health Physician and Primary Care Officer, together with the Deputy Director (Public Health) are responsible for reviewing all reports received from each district and compiling these reports into form QA/SIQ/DM/JKN/2008 for final submission to the Family Health Development Division (Primary Care) and the Quality Improvement Unit, Department of Public Health, MOH, Putrajaya.

7.7 Follow-Up

The Family Medicine Specialists, District MOH, Primary Care Officer and the state's Public Health Physicians are responsible at their respective levels for monitoring the effectiveness of the remedial measures. This can be done by two ways; periodic auditing (using the Diabetes Clinical Audit mechanism or by directly observing the work process); and also by monitoring the results of subsequent QA cycles for the clinic and district.

If there is inadequate improvement in subsequent QA cycles, the investigation may need to be repeated and any remedial measures revised.

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appendix 1
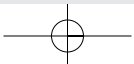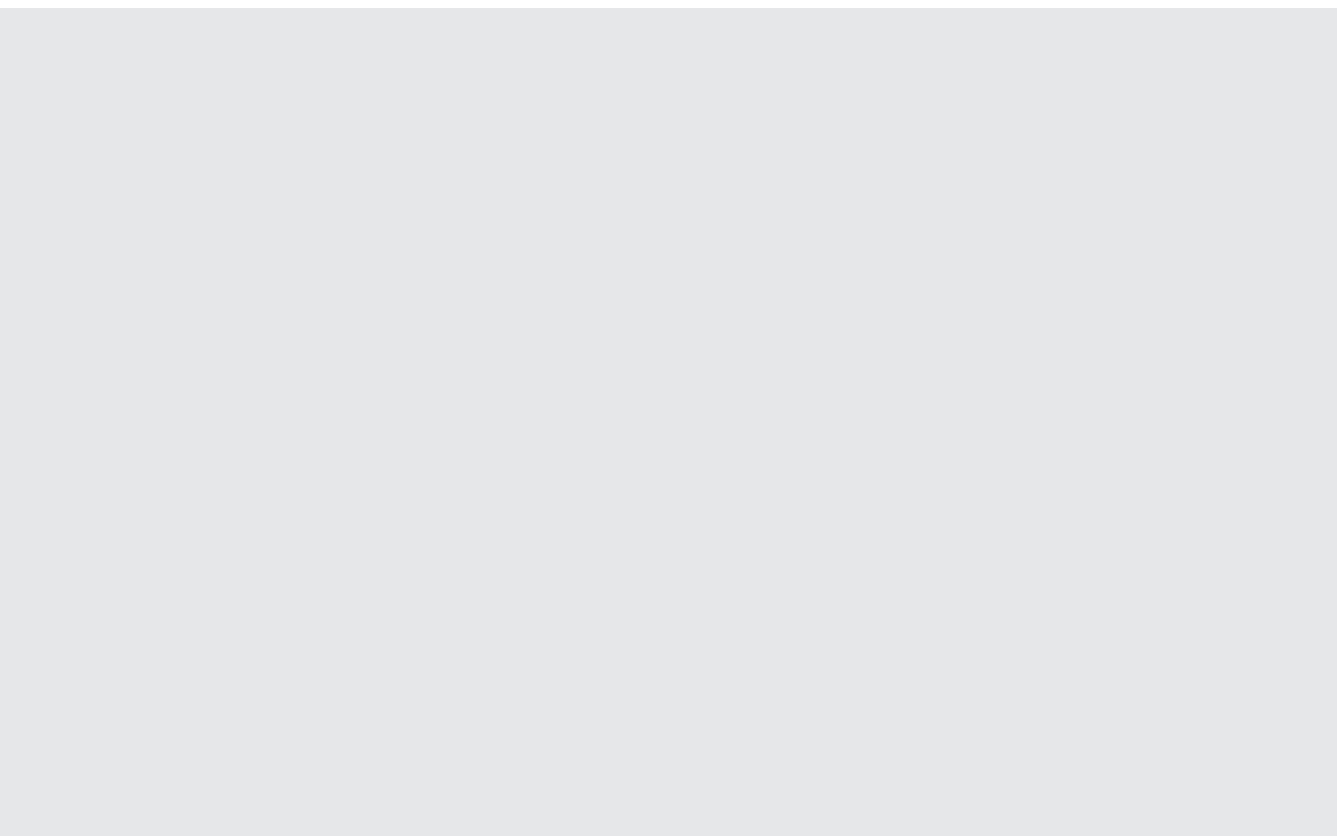
QA Indicator Achievement Report
Public Health Program

Activity: Disease Control (Non-Communicable)

Indicator: **Quality of Diabetes Care at MOH Healthcare Facilities**
(to be filled by District QA Coordinator)

Year:_____

State   :_____

District :_____

Clinic   :_____

Sample size	
No. of patients with $HbA_{1c} < 7.0\%$	
Proportion with $HbA_{1c} < 7.0\%$	%
SIQ (proportion <30%)	Yes / No

Signature   : _____ Date of report: _____

Name   : _____

Designation : _____

QA/SIQ/DM/KK/2008

QA Indicator SIQ Investigation Report

Activity: Disease Control (Non-Communicable)
Indicator: **Quality of Diabetes Care at MOH Healthcare Facilities**
(to be filled by District QA Coordinator)

State   : _____   Year: _____   Standard: **30%**

District : _____

Clinic   : _____   Standard Achieved: _____ %

No.	Weaknesses identified	Remedial measures		Note
		Action taken	Will be implemented	
1.				
2.				
3.				

Signature   : _____   Date of report: _____

Name   : _____

Designation : _____

QA/DM/PKD/2008

QA Indicator Achievement Report
Public Health Program

Activity: Disease Control (Non-Communicable)
Indicator: **Quality of Diabetes Care at MOH Healthcare Facilities**
(to be filled by District Medical Officer of Health)

Year:_____

State   : _____

District : _____

No.	Clinic	Sample size	No. of patients HbA$_{1c}$ < 7.0%	% of patients HbA$_{1c}$ < 7.0%	SIQ
1.					Yes / No
2.					Yes / No
3.					Yes / No
4.					Yes / No
5.					Yes / No
6.					Yes / No
7.					Yes / No
8.					Yes / No
9.					Yes / No
10.					Yes / No
	TOTAL				

Proportion with HbA$_{1c}$ < 7.0% for the district:_____%
SIQ (proportion < 30%) for the district: Yes / No

Signature   : _____   Date of report: _____

Name   : _____

Designation : _____

QA/SIQ/DM/PKD/2008

QA Indicator SIQ Investigation Report

Activity: Disease Control (Non-Communicable)
Indicator: **Quality of Diabetes Care at MOH Healthcare Facilities**
(to be filled by District Medical Officer of Health)

State : _____

District : _____

Year: _____

Standard: **30%**

Standard Achieved: _____ %

No.	Clinic with SIQ		Weaknesses identified	Remedial measures		Note
	Clinic	Standard achieved		Action taken	Will be implemented	
1.						
2.						
3.						

Signature   : _____

Name   : _____

Designation : _____

Date of report: _____

QA/DM/JKN/2008

QA Indicator Achievement Report
Public Health Program

Activity: Disease Control (Non-Communicable)
Indicator: **Quality of Diabetes Care at MOH Healthcare Facilities**
(to be filled by State Primary Care Officer)

Year:_____

State   : _____

No.	District	Sample size	No. of patients HbA$_{1c}$ < 7.0%	% of patients HbA$_{1c}$ < 7.0%	SIQ
1.					Yes / No
2.					Yes / No
3.					Yes / No
4.					Yes / No
5.					Yes / No
6.					Yes / No
7.					Yes / No
8.					Yes / No
9.					Yes / No
10.					Yes / No
	TOTAL				

Proportion with HbA$_{1c}$ < 7.0% for the district:_____%
SIQ (proportion < 30%) for the district: Yes / No

Signature   : _____   Date of report: _____

Name   : _____

Designation : _____

QA/SIQ/DM/JKN/2008

QA Indicator SIQ Investigation Report

Activity: Disease Control (Non-Communicable)
Indicator: **Quality of Diabetes Care at MOH Care Facilities**
(to be filled by State Primary Healthcare Officer)
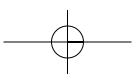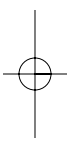
State : _____

Year: _____   Standard: **30%**

Standard Achieved: _____ %

No.	District with SIQ		Weaknesses identified	Remedial measures		Note
	District	Standard achieved		Action taken	Will be implemented	
1.						
2.						
3.						

Signature   : _____

Name   : _____

Designation : _____

Date of report: _____
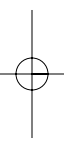
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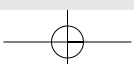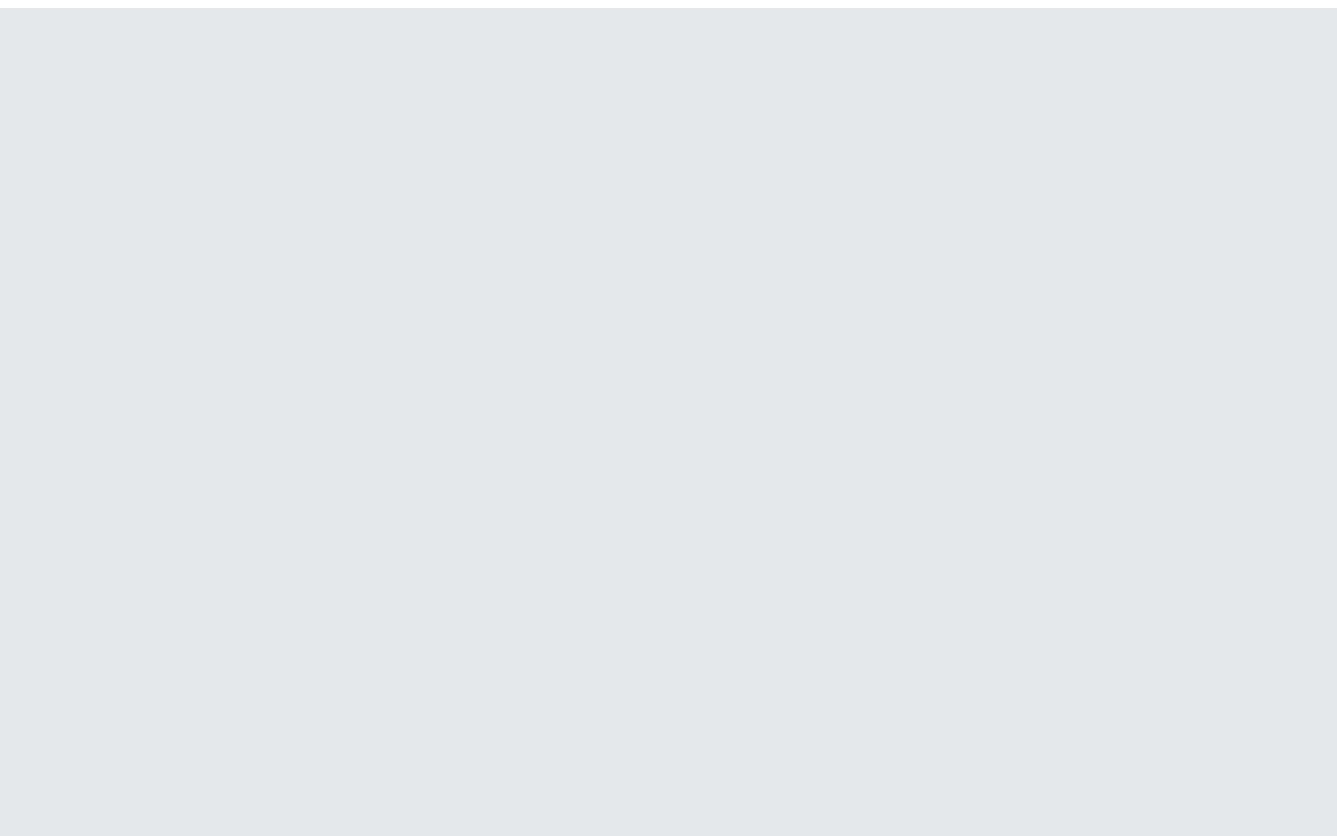
Summary of QA Flow Process

Level	Process	Person responsible
Clinic	[Data Collection] Completion of Diabetes Clinical Audit	Dateline: 30 August
	[Data entry & analysis] Complete form QA/DM/KK/2008; If SIQ, investigate and complete form QA/SIQ/DM/KK/2008	QA coordinator - FMS Investigation period: 1-30 September *Submission dateline:* 30 September
District	[Data compilation & analysis] Complete forms QA/DM/PKD/2008 & QA/SIQ/DM/PKD/2008	District Medical Officer of Health *Submission dateline:* 15 October
State	[Data compilation & analysis] Complete forms QA/DM/JKN/2008 & QA/SIQ/DM/JKN/2008	State Primary Care Officer *Submission dateline:* 31 October

Submit to Family Health Development Division (Primary Care), MOH, Putrajaya

Submit to MOH, Putrajaya (Quality Improvement Unit, Department of Public Health)