

CLINICAL AUDIT

Initiating Insulin

in Patients with Type 2 Diabetes



Focus

This focus of this audit is patients with type 2 diabetes on oral anti-diabetic medications who have poor glycaemic control.

This audit is designed to help you:

- Identify the HbA_{1c} level at which these patients have been initiated on insulin and check how this level compares to best practice
- Check that treatment for these patients is being escalated appropriately
- Develop a plan for addressing any gaps in your current practice

Background

The challenge of achieving optimal blood glucose control in people with type 2 diabetes is something faced on a daily basis by many GPs. The progressive effects of diabetes on beta cell function and insulin resistance mean that oral anti-diabetic medications become less effective with time.¹ Best management of type 2 diabetes therefore inevitably results in consideration of the use of insulin.

Insulin should be considered in all people with type 2 diabetes who have unsatisfactory glycaemic control, despite lifestyle support and maximal oral hypoglycaemic agents. For a patient with significant hyperglycaemia who is already on maximal oral agents, the move to insulin should be immediate. The presence of diabetic complications and personal patient preference may also influence the decision to initiate insulin.

There is evidence that insulin is under used in people with type 2 diabetes

There is evidence that insulin is under used in people with type 2 diabetes.^{2,3} Studies show that for most people with type 2 diabetes, a target HbA_{1c} level of 7% is not achieved, HbA_{1c} levels are higher than recommended by most guidelines for extended periods of time (at least 12 months) and changes to treatment may not occur until mean HbA_{1c} is 9% or more.^{1,3} Even after intensification of treatment, there is evidence that the HbA_{1c} remains above the target level for at least another six months because insulin doses are not titrated as frequently as required.¹

It is difficult to set an HbA_{1c} level where insulin should always be initiated as it will vary from patient to patient. One problem that GPs have is knowing when to escalate treatment and there is a tendency to leave people with type 2 diabetes with high HbA_{1c} levels for long periods of time. This occurs both with initiation and titration of oral therapy and with initiation of insulin. Insulin should be viewed as just another step in the treatment ladder and the most important thing is that action is taken if the HbA_{1c} level is unacceptable for a particular patient.

One suggested method to help achieve target HbA_{1c} levels is to set a trigger point for escalation of therapy. It may be useful to agree, at a practice level, on an HbA_{1c} level where action should be taken. Ideally there then should be an agreed trigger point, negotiated on an individual patient basis, recorded in the notes. An HbA_{1c} of 7% may be the aim, however realistically this is likely to be unachievable. An HbA_{1c} level of 8% may be a good starting point. This level may vary depending on your practice demographics.

References

1. Calvert MJ, McManus RJ, Freemantle N. Management of type 2 diabetes with multiple oral hypoglycaemic agents or insulin in primary care: retrospective cohort study. *Br J Gen Pract.* 2007;57:455-60.
2. Riddle MC. The underuse of insulin therapy in North America. *Diabetes Metab Res Rev.* 2002;18:s42-s29.
3. Jones S, Benroubi M, Castell C et al. Characteristics of patients with type 2 diabetes mellitus initiating insulin therapy: baseline data from the INSTIGATE study. *Curr Med Res Opin.* 2009;25(3):691-700.

Plan

Part 1: Auditing the current 'trigger point' for the initiation of insulin in patients with type 2 diabetes in your practice

Identify patients to audit

1. Using the query builder in your Practice Management System (PMS), identify patients with type 2 diabetes who are already on insulin.

Work out your 'current trigger point' for initiating insulin

2. From the patient's notes record the HbA_{1c} level at which treatment with insulin was initiated. (Use the data sheet to record your data).

Identify any gaps in your practice

3. Based on current evidence, identify a HbA_{1c} level at which patients with type 2 diabetes in your practice should be initiated on insulin, this is your target 'trigger point'.
4. Using data from Step 2 above, calculate the average HbA_{1c} at which treatment with insulin was initiated. What is the gap between this and your target 'trigger point'?

Part 2: Auditing the escalation of treatment for patients with type 2 diabetes in your practice

Identify patients to audit

1. Using the query builder in your PMS, identify 20 patients with type 2 diabetes on metformin.

Identify any gaps in your practice

2. Identify patients from your sample with an HbA_{1c} greater than or equal to 8%.
3. Using the patient's notes, establish whether the patient's dose of metformin has been titrated to the maximum tolerated dose. (Use the data sheet in Appendix One to record your data)
4. Use this data to:
 - a. Calculate the proportion of these patients that are not on a maximum tolerated metformin dose.
 - b. Calculate the proportion of these patients that have an HbA_{1c} greater than or equal to your target 'trigger point' for initiating insulin from part one above.

Patients identified in step four above represent the gap between 'ideal' practice and your current practice. These patients should be reviewed with a view to escalating treatment or initiating insulin.

Data sheet – cycle 1

Part 1: 'Trigger point' for the initiation of insulin in patients with type 2 diabetes

Patient number	HbA _{1c} at which insulin was initiated
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Current trigger point (average of above)	
Target trigger point	
Gap	

Part 2: Escalation of treatment for patients with type 2 diabetes

Patient number	Not on maximum tolerated metformin dose.	HbA _{1c} above target trigger point
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
%		

Data sheet – cycle 2

Part 1: 'Trigger point' for the initiation of insulin in patients with type 2 diabetes

Patient number	HbA _{1c} at which insulin was initiated
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Current trigger point (average of above)	
Target trigger point	
Gap	

Part 2: Escalation of treatment for patients with type 2 diabetes

Patient number	Not on maximum tolerated metformin dose.	HbA _{1c} above target trigger point
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
%		

Identifying opportunities for CQI

Taking action

The first step in taking action is to identify the criteria where gaps exist between expected and actual performance and decide on priorities for change.

Once priority areas for change have been decided on, an action plan should be developed to implement any changes.

The plan should assign responsibility for various tasks to specific members of the practice team and should include a timeline.

It is important to include the whole practice team in the decision-making and planning process.

It may be useful to consider the following points when developing a plan for action (RNZCGP 2002).

1. Problem solving process

- What is the problem or underlying problem(s).
- Change it to an aim.
- What are the solutions or options?
- What are the barriers?
- How can you overcome them?

2. Overcoming barriers

- Identifying barriers can provide a basis for change.
- What is achievable – find out what the external pressures on the practice are and discuss ways of dealing with them in the practice setting.
- Identify the barriers.
- Develop a priority list.
- Choose one or two achievable goals.

3. Effective interventions.

- No single strategy or intervention is more effective than another, and sometimes a variety of methods are needed to bring about lasting change.
- Interventions should be directed at existing barriers or problems, knowledge, skills and attitudes, as well as performance and behaviour.

Review

Monitoring change and progress

It is important to review the action plan against a timeline at regular intervals with the practice team. It may be helpful to discuss the following questions:

- Is the process working?
- Are the goals for improvement being achieved?
- Are the goals still appropriate?
- Do you need to develop new tools to achieve the goals you have set?

Following the completion of the first cycle, it is recommended that practices complete the first part of the CQI activity summary sheet (Appendix 1).

Undertaking a second cycle

In addition to regular reviews of progress with the practice team a second audit cycle should be completed in order to quantify progress on closing the gaps in performance. It is recommended that the second cycle be completed within 12 months of completing the first cycle. The second cycle should begin at the data collection stage. General Practitioners claiming credits towards MOPS will be required to complete the summary sheet (Appendix 1).

Those undertaking this audit but not claiming credits towards MOPS are strongly recommended to complete the summary sheet as it will provide them with a succinct review of the audit process.

Claiming MOPS credits

This audit has been endorsed by the RNZCGP as a CQI Activity for allocation of MOPS credits. General practitioners taking part in this audit can claim credits in accordance with the current MOPS programme. This status will remain in place until June 2012.

To claim MOPS points, you can indicate completion of the audit on the annual claim sheet, or alternatively you can go to the RNZCGP website, and claim your points at “MOPS online” at www.rnzcgp.org.nz

As the RNZCGP frequently audit claims you should retain the following documentation, in order to provide adequate evidence of participation in this audit:

1. A summary of the data collected
or
2. A certificate of participation, if this is an organisational activity. This is available from bpac if required.
and
3. A Continuous Quality Improvement (CQI) Activity summary sheet (included as Appendix 1).

Appendix 1: RNZCGP Summary Sheet – CQI Activity

DOCTORS NAME

The activity was designed by (please tick appropriate box):

RNZCGP

Organisation e.g. IPA/PHO/BPAC (name of organisation)

[bpac^{nz}](http://bpac.nz)

Individual (self)

TOPIC

Initiating Insulin in Patients with Type 2 Diabetes

Describe why you chose this topic (relevance, needs assessment etc):

FIRST CYCLE

1. DATA

Information collected

Date of data collection:

Please attach:

- A summary of data collected **or**
- If this is an organisation activity, attach a certificate of participation.

2. CHECK

Describe any areas targeted for improvement as a result of the data collected.

3. ACTION

Describe how these improvements will be implemented.

4. MONITOR

Describe how well the change process is working. When will you undertake a second cycle?

SECOND CYCLE

1. DATA	Information collected
Date of data collection:	
Please attach:	
<ul style="list-style-type: none">▪ A summary of data collected or▪ If this is an organisation activity, attach a certificate of participation.	
2. CHECK	Describe any areas targeted for improvement as a result of the data collected.
3. ACTION	Describe how these improvements will be implemented.
4. MONITOR	Describe how well the change process is working.
COMMENTS	

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