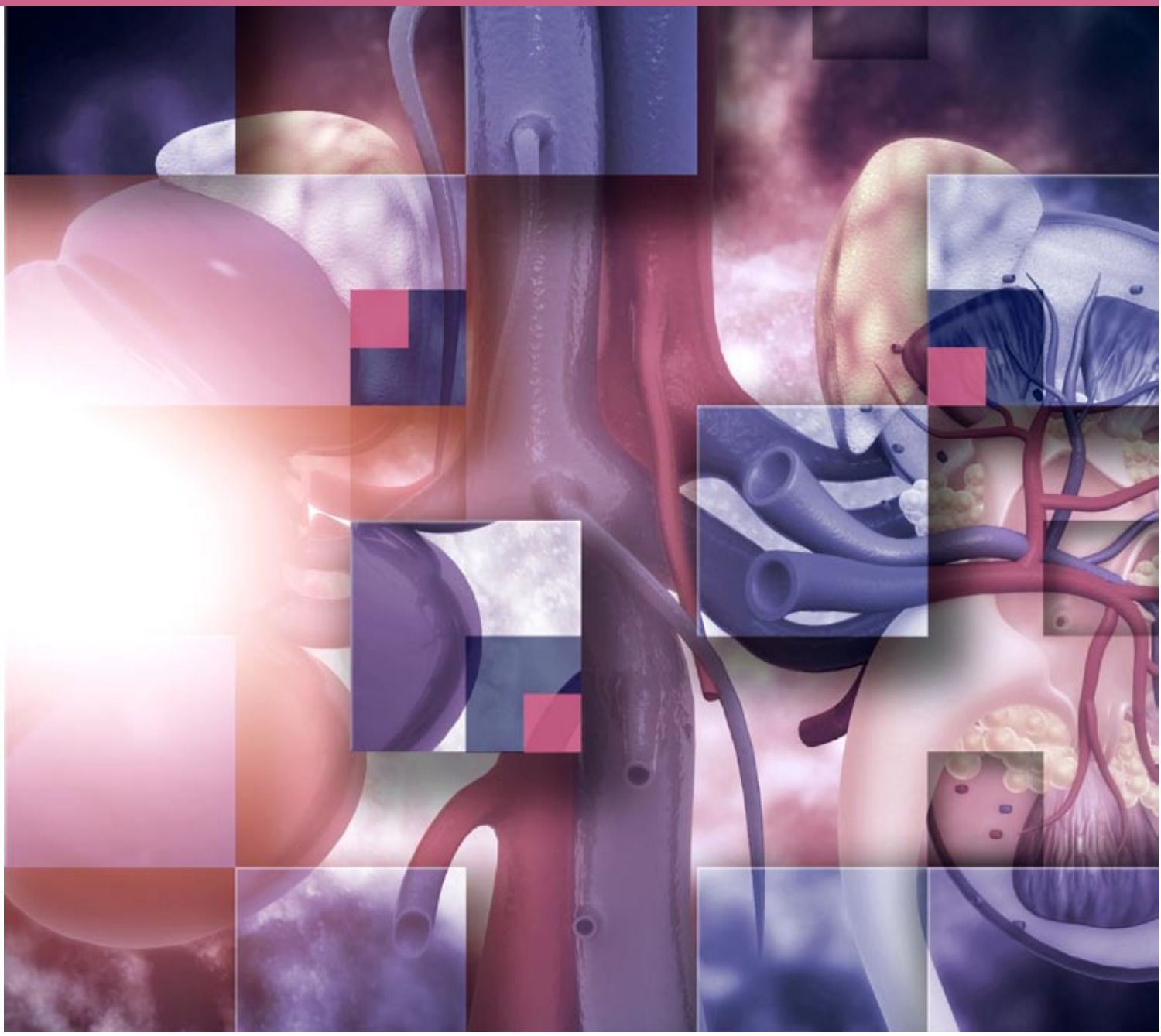
CLINICAL AUDIT

Monitoring **renal function** in patients with **diabetes**



Valid to July 2024

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This audit identifies patients with type 1 and type 2 diabetes and assesses the frequency and extent of their renal monitoring. As an optional extra patient ethnicity can be analysed to determine if there are disparities in renal monitoring.

Background

Diabetic kidney disease (DKD) is the leading cause of end-stage renal-disease in New Zealand. Approximately half of people in New Zealand receiving dialysis have diabetes as the cause of their kidney disease. DKD develops in approximately 30% of people with type 1 diabetes and 40% of people with type 2 diabetes.

A multifactorial approach is recommended to preserve renal function, prevent renal complications and reduce cardiovascular risk in all patients with diabetes, including those with established DKD. The most important factors in preserving renal function in people with diabetes are:

1. Regular monitoring of renal function
2. Optimising glycaemic control
3. Managing blood pressure

Patients with diabetes should have their renal function tested at least once a year as part of their annual diabetes review. Renal testing should include both:

- An albumin:creatinine ratio (ACR), from a first void urine sample if possible
- An estimated glomerular filtration rate (eGFR), which will be automatically generated when a serum creatinine is requested

More frequent testing, e.g. six-monthly, may be appropriate for people with multiple risk factors for DKD, e.g. Māori ethnicity, frequent use of NSAIDs and hypertension.

Māori and Pacific peoples with DKD often have more severe disease. Māori and Pacific peoples are more likely to have kidney disease with moderately to severely increased albuminuria than people of European ethnicity. People of Pacific ethnicity have a 12-fold higher, and Māori six-fold higher, rate of starting treatment for end-stage renal disease than people of European ethnicity. Among people starting dialysis, diabetes is the underlying cause of renal failure in 74% of patients of Pacific ethnicity, compared to 68% of Māori and 24% of Europeans.

Further information is available from: "Slowing progression of renal dysfunction in patients with diabetes", bpac^{nz}, June, 2019, **www.bpac.org.nz/2019/renal.aspx**

Plan

Summary

This audit identifies patients with type 1 and type 2 diabetes and records the frequency and type of renal monitoring that they are receiving. As an optional extra, the ethnicity of patients can also be recorded to determine if there are disparities in renal monitoring.

Audit standards

Ideally, all patients with diabetes will have their renal function tested at least once a year. Testing should include both a urinary ACR and serum creatinine from which an eGFR is generated.

Data

Eligible patients

All patients aged over 20 years with diabetes are eligible for inclusion in this audit. This cut-off was chosen because people with type 1 diabetes who are younger are less likely to be monitored in primary care and type 2 diabetes is uncommon in people aged under 20 years.

Identifying patients

You will need to have a system in place that allows you to identify eligible patients. Many practices will be able to identify patients by running a "query" through their PMS. The patient's notes are then reviewed to determine if an ACR and eGFR result has been recorded in the previous 12 months.

Sample size

A random sample size of 30 patients with diabetes is likely to be sufficient for the first stage of this audit. It is likely that the size of the sample will need to be increased if the option of analysing the ethnicity of patients is chosen, depending on the ethnic composition of the practice population.

Criteria for a positive outcome

A positive result is if a patient aged over 20 years with diabetes years has a documented result for an ACR and eGFR in their notes in the past 12 months.

Data analysis

Record whether each patient has had an ACR and an eGFR result entered in their notes in the previous 12 months. If a patient has not had an ACR and eGFR result entered in their notes during this time they should be flagged for review. After 30 records have been examined record the total number of patients that have a "Yes" in both the ACR and eGFR column. By dividing the number of patients with a "Yes" in both columns, i.e. ACR and eGFR, by the total number of patients, i.e. 30, the ratio of patients with diabetes who are receiving appropriate renal monitoring can be determined.

Optional extra – ethnic differences in renal monitoring

An optional extra is provided in this audit that allows practices to determine if there are ethnic disparities in the renal monitoring of people with diabetes. This is likely to require the size of the sample to be increased beyond 30 patients to enable meaningful comparisons. In a practice with a high proportion of Māori and Pacific patients a sample of 50 patients may be sufficient, however, others may need to sample all their patients with diabetes.

On the second data sheet, record whether both an ACR and eGFR test result has been entered in the patient's notes in the previous 12 months and record the ethnicity of each patient. In the bottom half of the data sheet, record the total number of patients for each ethnicity with both an ACR and eGFR result in the previous 12 months (AG) and record the total number of patients for each ethnicity (E). By dividing AG by E for each ethnicity the ratio of appropriate renal monitoring for each group can be determined. The monitoring ratios for each ethnicity can then be compared to see if there are ethnic disparities in renal monitoring for people with diabetes.

Identifying opportunities for Audit of Medical Practice

The first step to improving medical practice is to identify the criteria where gaps exist between expected and actual performance and then to decide how to change practice.

Once a set of priorities for change have been decided on, an action plan should be developed to implement any changes.

Taking action

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

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?

Overcoming barriers to promote change

- 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 wdealing with them in the practice setting
- Identify the barriers
- Develop a priority list
- Choose one or two achievable goals

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 developed previously at regular intervals. It may be helpful to review 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 the doctor completes the first part of the Audit of Medical Practice 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. Following the completion of the second cycle it is recommended that practices complete the remainder of the Audit of Medical Practice summary sheet.

The Royal New Zealand College of General Practitioners

Claiming credits for Continuing Professional Development (CPD)

This audit has been endorsed by the RNZCGP as an Audit of Medical Practice activity (previously known as Continuous Quality Improvement – CQI) for allocation of CPD credits; **10 credits** for a first cycle and **10 credits** for a second cycle. General practitioners taking part in this audit can claim credits in accordance with the current CPD programme.

To claim points go to the RNZCGP website: **www.rnzcgp.org.nz**

Record your completion of the audit on the **CPD Online Dashboard**, under the **Audit of Medical Practice section**. From the drop down menu select "**Approved practice/PHO audit**" and record the audit name.

General practitioners are encouraged to discuss the outcomes of the audit with their peer group or practice.

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
2. An Audit of Medical Practice (CQI activity) summary sheet (included as Appendix 1).

The Royal New Zealand College of General Practitioners
Te Whare Tohu Rata o Aotearoa
Endorsed CPD Activity

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www.bpac.org.nz/audits

Data sheet – cycle 1 Monitoring renal function in patients with diabetes

Patient with diabetes	ACR result in previous 12 months?	eGFR in previous 12 months?	Flagged for review?
Patient	**Yes/No**	**Yes/No**	✔
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
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29			
30			

Total with ACR *and* eGFR in previous 12 months: _____

Total number of patients: _____

× 100 = _____ **% of patients with diabetes who are receiving appropriate renal monitoring**

Please retain this sheet for your records to provide evidence of participation in this audit.

Data sheet – cycle 2 Monitoring renal function in patients with diabetes

Patient with diabetes	ACR result in previous 12 months?	eGFR in previous 12 months?	Flagged for review?
Patient	**Yes/No**	**Yes/No**	✔
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
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28			
29			
30			

Total with ACR *and* eGFR in previous 12 months: _____

Total number of patients: _____

× 100 = _____ **% of patients with diabetes who are receiving appropriate renal monitoring**

Please retain this sheet for your records to provide evidence of participation in this audit.

EXTRA

Optional data sheet – cycle 1

Monitoring renal function in patients with diabetes

Patient with diabetes	ACR and eGFR in previous 12 months?	Ethnicity			
Patient	Yes/No	European	Māori	Pacific	Asian
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
Totals					

Patient with diabetes	ACR and eGFR in previous 12 months?	Ethnicity			
Patient	Yes/No	European	Māori	Pacific	Asian
26					
27					
28					
29					
30					
21					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
Totals					

	Total with ACR *and* eGFR in previous 12 months (AG)	Total ethnicity (E)	Rate of appropriate monitoring, i.e. AG/E
European			
Māori			
Pacific			
Asian			

Please retain this sheet for your records to provide evidence of participation in this audit.

EXTRA

Optional data sheet – cycle 2

Monitoring renal function in patients with diabetes

Patient with diabetes	ACR and eGFR in previous 12 months?	Ethnicity			
Patient	Yes/No	European	Māori	Pacific	Asian
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
Totals					

Patient with diabetes	ACR and eGFR in previous 12 months?	Ethnicity			
Patient	Yes/No	European	Māori	Pacific	Asian
26					
27					
28					
29					
30					
21					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
Totals					

	Total with ACR and eGFR in previous 12 months (AG)	Total ethnicity (E)	Rate of appropriate monitoring, i.e. AG/E
European			
Māori			
Pacific			
Asian			

Please retain this sheet for your records to provide evidence of participation in this audit.

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APPENDIX 1

SUMMARY SHEET
Audit of medical practice (CQI activity)

Topic:
Monitoring renal function in patients with diabetes

Date:

Activity designed by (name of organisation, if relevant):
Bpac^{nz}

Doctor's name:

Results discussed with peer group or colleagues?
☐ Yes ☐ No

Date:

FIRST CYCLE

DATA: Date of data collection:

CHECK: Describe any areas targeted for improvement as a result of analysing the data collected. (If the findings have any implications for health equity, please include this.)

ACTION: Describe how these improvements will be implemented.

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

AUGUST 2016

SECOND CYCLE

DATA: Date of data collection:

CHECK: Describe any areas targeted for improvement as a result of analysing the data collected. (If the findings have any implications for health equity, please include this.)

ACTION: Describe how these improvements will be implemented.

MONITOR: Describe how well the process is working.

COMMENTS:

AUGUST 2016