

# POLICY OPTIONS

## Integrating best practice and filling knowledge gaps in remote Aboriginal diabetes detection and care: Improving case detection and service delivery

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### Policy context

#### Sensible diabetes screening in primary health care (PHC)

Type 2 diabetes mellitus (T2DM) and associated complications are a significant health problem facing Aboriginal and Torres Strait Islander people in Australia. The early identification of diabetes provides an opportunity to institute effective preventive approaches shown to reduce the subsequent development or progression of complications of diabetes (e.g. kidney disease). However, diabetes remains undiagnosed in up to 50% of people. A new way of screening for diabetes that utilises point-of-care (POC) glycated haemoglobin A1 (HbA<sub>1c</sub>) testing was introduced in the Kimberley region of north Western Australia in 2015. This pilot project was developed to provide preliminary data and establish systems to be used for a larger project on sustainably improving detection of diabetes. It consisted of

- > Providing in-services to clinicians on the new Kimberley diabetes screening algorithm
- > Determining barriers and enablers to implementing the new screening algorithm
- > Evaluating screening for diabetes using HbA<sub>1c</sub> tests.

#### Systems approach to T2DM management and continuous quality improvement (CQI)

There is little long-term evidence of the effectiveness of diabetes care in real world PHC settings. Despite a decade of activity and financial investment in CQI in Aboriginal Community Controlled Health Services (ACCHSs), anticipated improvements in quality of care and patient outcomes have not been achieved, and CQI is still not embedded in routine practice. We have demonstrated that Kimberley ACCHSs can successfully provide high quality diabetes care using local CQI processes over 10 years, with the potential to expand this experience across multiple sites. This pilot project was developed to provide preliminary data and establish systems to be used for a larger project on sustainably improving provision of high quality care to people with diabetes. It consisted of

- > Providing in-services to clinicians and managers about the findings of the “Kimberley Diabetes Study”
- > Determining what changes occurred since this study took place and how the recommendations from this study could be implemented
- > Conducting a clinical systems and software/data quality needs assessment.

## Policy options

We have demonstrated some successes with implementing the new Kimberley diabetes screening algorithm. KAMS has also started building the foundation on which the development of sustainable chronic disease programs will be based. This in turn should lead to improvements in health outcomes for Aboriginal peoples attending Kimberley Aboriginal Medical Services (KAMS) clinics. This pilot project demonstrates that

- > implementation is a complex, at times fragmented, ongoing process that requires detailed planning
- > High staff turnover and the institutional amnesia and delays that will occur as a consequence of this need to be factored into the planning process
- > Implementation takes time and effort, and requires a multidimensional and multidisciplinary approach that involves extensive consultation with health care providers and patients
- > This pilot project has also highlighted the importance of monitoring each part of the implementation process and also the well-known, but not always implemented principle, that CQI processes need to be built into the implementation of new programs
  - Together with the evaluation of existing programs, the evaluation of implementation of new programs needs to be adequately resourced
  - A fully funded chronic disease coordinator position would be a good starting point for health services to be able demonstrate that systems can deliver high quality care.

Through this implementation process we have identified several issues that still need to be addressed including

- > Understanding what the HbA<sub>1c</sub> measurements mean when diagnosing T2DM (to both patients and providers), and acting on these results appropriately and in a timely manner
- > Encouraging POC analyser use and that data is recorded accurately
- > Simplifying POC HbA<sub>1c</sub> training and quality assurance systems, and ensuring this occurs
- > Obtaining an MBS rebate for POC HbA<sub>1c</sub> tests for screening for diabetes.

Any new program will need to address issues such as

- > High staff turnover
- > Recurrent training of new and existing staff
- > Integrating the program into health services and ensuring that staff are supporting a high quality program, and evaluating the program.

Further research includes

- > Continuing to document the implementation of both the new screening algorithm and the recommendations from the “Kimberley Diabetes Study”.
- > Conducting a cost-effectiveness study into using POC HbA<sub>1c</sub> tests as the first step of the screening process to support a submission to Medicare for an MBS rebate.
- > Determining the diabetes screening rate after the issues raised during this pilot study have been addressed.
- > Determining the true burden of T2DM and how long it takes for progression from normal to prediabetes to diabetes and at what age this happens.
- > Conducting further rounds of the regional systems approach to diabetes management and CQI used in the “Kimberley Diabetes Study” and determining if this leads to improved care and outcomes.

## Key findings

We found significant increases (1.8 to 2.6 fold) in screening for T2DM using HbA<sub>1c</sub> tests in all age groups from the year before the Kimberley diabetes screening algorithm was introduced (2014) to the year after this change (2015). Implementing the new screening algorithm requires several system level changes, some of which have been addressed during this pilot project. These included developing a new screening algorithm that is easy for clinicians to follow; adding the ability to record POC and laboratory HbA<sub>1c</sub> measurements in the old and new international units as separate fields in the KAMS electronic records system (MMEx); and purchasing new equipment and training clinicians to use them.

During 2014-2015 40% of regular KAMS patients who were not on a diabetes care plan were screened for diabetes using HbA<sub>1c</sub> tests. Despite each clinic audited having at least one staff member trained and accredited to use POC analysers, estimated use (18% of HbA<sub>1c</sub> tests recorded during the audit) was lower than expected.

The data from this pilot study gives an indication on the incidence of prediabetes and diabetes in five remote Kimberley communities (Table 1). However due to the limitations identified during this project (e.g., some measurements recorded in the wrong MMEx field; low level of screening of patients 15-25 years of age; delays in assigning diabetes care plans) caution needs to be used when interpreting these results.

Table 1

<b>Incidence of prediabetes and diabetes in the patient population who were screened with HbA<sub>1c</sub> in 2014-2015 by age category</b>	
Total no. of patients with prediabetes	<b>210</b>
> 15-24 years old at 1 <sup>st</sup> January 2014	23 of 132 screened (8.4%)
> 25-39 years old at 1 <sup>st</sup> January 2014	85 of 264 screened (32%)
> ≥ 40 years old at 1 <sup>st</sup> January 2014	102 of 247 screened (41%)
Total no. of patients with diabetes	<b>92</b>
> 15-24 years old at 1 <sup>st</sup> January 2014	7 of 132 screened (5.3%)
> 25-39 years old at 1 <sup>st</sup> January 2014	48 of 264 screened (18%)
> ≥ 40 years old at 1 <sup>st</sup> January 2014	37 of 247 screened (15%)

There were delays to T2DM care plans being assigned. Only 64 (70%) of the 92 patients who had diagnostic measurements were assigned a diabetes care plan during 2014-2015. The median time for assignment was 47 (IQR 7-218) days.

While the rate of screening for diabetes using HbA<sub>1c</sub> tests doubled in 2015 compared to 2014, there are still several issues that need to be addressed including increasing the usage of POC HbA<sub>1c</sub> analysers; making MMEx easier to input and extract data from; and timely assignment of care plans.

The clinical systems and software/data quality needs assessment for providing high quality diabetes care also identified several areas that needed to be addressed by KAMS. These include supporting local Aboriginal Health Workers, developing a new model of care, and improvements to CQI processes.

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