

Australian National Diabetes Audit Protocol

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Table of Contents:

Acknowledgement	2
Synopsis	3
1. Diabetes Care in Australia.....	4
2. The Dataset.....	6
3. ANDA Software/Database	6
4. ANDA Coordination	7
5. ANDA Methodology.....	7
5.1 Survey period	7
5.2 Ethics	7
5.3 Survey population	7
5.4 Data Verification and Validation	8
5.5 Data analysis/reporting.....	8
6. Funding	8
7. Milestones	9
8. References	9

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Synopsis

The Australian National Diabetes Audit (ANDA) is a well-established, important biennial, quality activity facilitated by the National Association of Diabetes Centres (NADC), in services providing care for people with diabetes across Australia in all States and Territories. Participating diabetes centres, endocrinologists and other diabetes health care professionals receive an individualised report of their patient data to compare with other diabetes centres.

In addition to the primary output audit report received by participating centres, the pooled national report is an important source of cross-sectional data on the clinical status and outcomes of individuals attending services providing diabetes care across the country.

There are two ANDA audits that alternate each year:

- ANDA-AQCA (Australian Quality Clinical Audit). This audit focuses on clinical indicators known to impact on the care of the person with diabetes.
- ANDA-AQSMA (Australian Quality Self-Management Audit). This audit is more focused on self-management and diabetes distress and collects data related to diabetes education, self-care practices and quality of life.

1. Diabetes Care in Australia

The National Association of Diabetes Centres (NADC) established in 1994 is a national collective of diabetes centres brought together by a common desire to see improvement in the standard of diabetes care in Australia. With a focus on proactive maintenance of good health and prevention of complications, NADC diabetes centres aim to provide integrated care and to bridge the gap between the acute care hospital system, and the long-term chronic care provided by primary care and community-based services.

Supported by the Australian Diabetes Society (ADS), the NADC facilitates the ANDA initiative as part of monitoring and improving quality of care after considering the outcomes of the Diabetes Control and Complications Trial (DCCT)¹, and the United Kingdom Prospective Diabetes Study (UKPDS)²⁻⁵. The DCCT found that maintenance of good glycaemic control significantly reduces diabetes related complications in patients with type 1 diabetes, while the UKPDS showed that maintenance of good glycaemic and blood pressure control reduced the long-term complications of type 2 diabetes. Both strategies require a multidisciplinary team approach including specialist care to achieve better outcomes for people with diabetes.

Consequently, the NADC was created to establish and promote effective health care practice and, ultimately, to achieve better outcomes for people with diabetes. In particular, key strategies were identified including the development of standards of care and quality review initiatives, information provision, and training and support for health professionals in specialist multidisciplinary settings.

Overview of NADC member centres

The NADC promotes mechanisms for improving the standard of care available to people with or at risk of diabetes through services providing diabetes care.

Are there differences between the diabetes centres that participate in ANDA?

There are 6 membership levels of NADC:

1. Centres of Excellence

Recognised diabetes centres that have demonstrated excellence in education, research, service delivery, practice/policy development and education. These centres must be tertiary level facilities.

2. Tertiary Diabetes Centres

NADC centres that have the full range of diabetes service providers including endocrinologists, diabetes nurse educators, dietitians and podiatrists on staff (full time) and who have demonstrated a high standard of care through service delivery and organisational capacity and have been accredited by the NADC.

3. Secondary Care Diabetes Services

These services have a range of full and/or part-time diabetes staff but often do not have an endocrinologist as part of their usual team. They may be working toward accreditation as a Tertiary Care Diabetes Service.

4. Primary Care Diabetes Services

These centres have part-time staff and work closely with the local general practitioners to provide care for people with diabetes.

5. Pharmacy Diabetes Services

These centres have staff that have received training and/or have expertise in diabetes and work closely with the local general practitioners and allied health staff to provide additional care and services for people with diabetes.

NADC Pharmacy Diabetes Service membership is offered to groups of professional healthcare workers who have an active involvement in diabetes care provided in the pharmacy context, and are committed to the goals and objectives of the NADC and to monitoring the outcomes of their service, but do not have the full complement of services or resources of a larger diabetes service.

6. Network Members

The NADC Network membership is offered to Primary Health Networks (PHNs) and Primary Care Partnerships (PCPs) around Australia. PHNs and PCPs work directly with general practitioners, other primary health care providers, secondary care providers and hospitals, to facilitate improved outcomes for patients. PHNs and PCPs are committed to providing efficient and effective primary health care, with objectives that align closely with those of the NADC.

Who will access the various Diabetes Services?

Most patients referred to Tertiary Care Diabetes Services, including Centres of Excellence, are referred by their general practitioners so that they may receive specialist assessment and treatment. Given this role, it is probable that people attending Tertiary Care Diabetes Services will be those whose diabetes is less likely to be managed well. In considering the outcomes of this data collection, it is important to remember that whilst Tertiary Care Diabetes Services will provide assessment and treatment, ongoing responsibility for management of diabetes remains with the person with diabetes and their general practitioner.

Development of ANDA Quality Clinical Indicators

There has been long standing worldwide interest in developing suitable diabetes datasets and methods of data collection to capture appropriate diabetes outcomes for quality improvement. As a result, collection, analysis and reporting of standardised diabetes datasets is now widely practiced. The European Association for the Study of Diabetes (EASD) Study Group DO IT (Dibabetes care Optimisation through Information Technology)⁶ undertook much work aimed at improving the quality of diabetes care through the appropriate use of information technology, including promoting the collection, analysis and reporting of the DiabCare dataset⁷⁻⁸ for audit and benchmarking purposes. From this has come the DiabCare Q-Net initiative⁹.

A similar initiative, the NSW Diabetes Outcomes Workshop (NDOW), was undertaken in Australia in September 1993 with funding from the NSW Health Department¹⁰⁻¹¹. Forty five stakeholders including diabetes health professionals, Health Department officials and consumers met for a one day workshop and agreed on a dataset of 59 health outcome data elements that covered demographic, acute and chronic complications and self-care practice areas of diabetes care. These items became known as the NDOW dataset, and subsequently these data items have become widely promulgated for collection (using standardised definitions) across Australia.

In 1997 the Australian Diabetes Society (ADS) Council accepted a recommendation to adopt the NDOW dataset as its Diabetes Outcomes dataset, and formed a sub-committee (now named the National Diabetes Data Working Group (NDDWG)). This sub-committee managed the dataset and promoted quality diabetes care in Australia, through the National Dibabetes Outcomes Quality Review Initiative, (NDOQRIN)). The NDDWG has taken a subset of the NDOW dataset and has promoted its collection as a minimum dataset (for quality diabetes care) in a variety of clinical practice settings.

After diabetes was named the 5th National Health Priority Area in 1996¹², work followed to improve diabetes care in Australia including the commissioning of the National Diabetes Strategy to update and replace the National Action Plan. One aspect reviewed was the need for local data on which appropriate planning could be carried out and assessment of the effect of initiatives could be undertaken. Consequently, several initiatives indicated the need for reliable data in Australia (including diabetes indicators work), as noted in the National Health Priority Areas Report: Diabetes Mellitus

1998¹². However, data on clinical aspects of diabetes, including outcomes data, were deficient in Australia as highlighted in The National Diabetes Strategy and Implementation Plan report¹³.

The NDDWG continued to promulgate the NDOQRIN dataset, and in 2002 was successful in having it accepted as the first clinical dataset to be included in the National Health Data Dictionary and Knowledgebase, Version 12. This dataset has since been enhanced, and is now online as part of the AIHW – Metadata Online Registry ('METeOR') as the Diabetes (clinical) Data Set Specification¹⁴.

2. The Dataset

The NDOQRIN diabetes dataset has considerable compatibility with similar international datasets¹⁵⁻¹⁷. The NDOQRIN dataset was enhanced and used as the basis of this national initiative, aimed at improving diabetes care through a structured approach to patient management¹⁸. This was achieved by linking the minimum dataset to the NSW Clinical Management Guidelines for Diabetes¹⁹, with subsequent enhancements to the dataset over the years. This minimum dataset is suitable for use in primary care (where it is known as the 'Recommended GP Subset of the NDOQRIN Dataset'), specialist practice and diabetes centre settings. Enhancements and deletion/addition of data fields have occurred over the years with feedback from participating centres on collections.

Currently the dataset remains a one page scannable form with required written data kept to a minimum, most fields being yes/no or other choice options. The data definitions provide definitions for each data field, including all valid field types.

The data dictionary has been updated and is made available to all sites.

3. ANDA Software/Database

An application of Teleform© scannable/faxable software has been integrated with a Microsoft SQL Server 2010 running under a Windows 7 operating system²⁰⁻²¹. The Teleform© Designer module allows paper forms to be designed and printed. Once completed by sites, forms can be mailed to the ANDA Secretariat at the Alfred Centre, 5th Floor, 99 Commercial Road, Melbourne 3004.

The Teleform© Reader module assesses each form and either accepts the form (transferring data to an intermediate Access© data file), or suspends the form for verification of one or more data items that the Reader software cannot confidently identify. The Teleform© Verifier module allows an on screen version of the scanned image to be viewed, and corrections made where necessary. Once such corrections are made and accepted, data from these forms are also transferred to the database. Data in this file are then appended to the permanent database file. Concurrent Operating System and Software Versions are Windows 7, Access 2003 & Teleform V10.9.

Reports have been developed on a user-friendly interface to enable data reporting. This includes data verification reports to ensure complete and valid data capture.

Any data extracted from practitioner or site in-house databases will be transferred via a secure file transfer protocol (SFTP) for collation and analysis alongside scanned form data. Data will be stored in the central ANDA Database, a Microsoft Access© database held in password protected files on computers stored in a locked room at the School of Public Health and Preventive Medicine, Monash University.

Alternatively, participating sites may enter data directly into REDCap (Research Electronic Data Capture)²², a secure web application, stored on a secure Monash University server. Assigned staff members will be allocated a unique username to access the database. After data entry completion, sites will need to download a pdf version for every patient, print and file at local site.

4. ANDA Coordination

ANDA coordination and conduct will be overseen by ANDA Secretariat and operational group based at the Division of Metabolism, Ageing and Genomics, School of Public Health and Preventive Medicine, Monash University in partnership with Monash Health.

5. ANDA Methodology

ANDA will consist of the following steps:

1. Initial call for expressions of interest from diabetes centres (potential sites).
2. Formal invitations to participate and site acceptances (participating sites).
3. Allocation of unique site codes by the ANDA Secretariat in a double blind manner and distribution of data collection forms.
4. Data collection by participating sites.
5. Data entry, cleaning, collation and validation (including missing data query resolution).
6. Data analysis and reporting.

The ANDA Secretariat will invite diabetes centres (all levels of NADC membership) and specialist endocrinologists in private practice to participate in the ANDA collection.

All contact and correspondence with participating centres/specialist endocrinologists will only occur through the ANDA Secretariat.

The ANDA Secretariat will provide participating centres and specialist endocrinologists with their unique site code and hold the only copy of this code.

Sites that have participated in past surveys will use their previously allocated unique site code. Sites that have not participated in past surveys will be allocated a new unique site code.

The central data management/analysis unit will generate 'Master Copies' of the forms uniquely numbered for each site. The forms will then be provided to the ANDA Secretariat who will upload them onto Basecamp Classic, a project management and collaboration system, in a secure file transfer web folder which has been set up for each individual site. Each participating site will be instructed to make copies (as many as required) of their unique form for use in the survey.

All sites will receive a "Guide to completing ANDA Forms" with instructions on how the forms should be completed and the data field definitions.

5.1 Survey period

Centres will conduct the survey over 4 consecutive weeks (May or June).

Note: For centres not able to collect data on more than 30 participants, the survey can be extended for another four weeks [May and June].

5.2 Ethics

This project has received Human Research Ethics Low Risk approval from the Monash Health Human Research Ethics Committee. However, the onus is on each centre to seek advice regarding local ethics requirements.

5.3 Survey population

All consecutive patients attending the centre/service over the 4-week survey interval (recommended 100 patients per site).

Sites will be advised to complete a data collection form for each patient attending the centre. All completed forms will be copied by the sites and stored locally in a secure place. The original forms will

then be sent to the ANDA Secretariat at the Alfred Centre, 5th Floor, 99 Commercial Road, Melbourne 3004. The ANDA Secretariat will check and collate the original forms and deliver them to the data management centre for processing.

Sites with computerised databases will have the alternative option of extracting the appropriate data in an electronic and de-identified form and providing it directly to the ANDA Secretariat through a secure web based data transfer process.

5.4 Data Verification and Validation

As in previous years every effort will be made to ensure data completeness and correctness, with specific “validation reports” generated for each site.

These validation reports will contain lists of missing or potentially invalid data, as well as possible duplicate individual entries and will be forwarded to the sites by the ANDA Secretariat. Sites will then have 4 weeks to respond to these validation reports.

Once returned to the ANDA Secretariat, they will be forwarded to the data management centre where any additional or corrected data items will be entered/corrected respectively, in the pooled database, prior to final data analysis.

Where duplicates are identified, these will be reviewed and the first entered record retained, supplemented by any additional data in the second record that was missing in the original. The second entered record will then be deleted.

5.5 Data analysis/reporting

In analysing the data, as in past surveys, the previous specified data assumptions, decisions and data manipulations will be observed. Data analysis and reporting will include:

AQCA & AQSM A Pooled data report

- Pooled data
- Data frequency counts
- Missing data
- Descriptive report (data tables and graphs)
- Comparative statistics by year of collection (AQCA only)

AQCA & AQSM A Individual Site data report

- Site report at a glance
- National benchmarking report
- Historical comparison report
- Descriptive report (data tables and graphs)
- Data compared against Clinical Management Guidelines for Diabetes (AQCA only)

5.6 Post survey/reporting feedback

Participating sites will be asked to complete two questionnaires:

- At completion of the data collection phase to assess the project overall – July
- After receipt of the reports to assess the adequacy of the individual site reports - January

6. Funding

The Australian Government Department of Health has funded the conduct of ANDA from 2013-2021.

7. Milestones

The major project milestones are summarised below:

ANDA-AQCA Milestones
Revise ANDA Dataset - February
Initial call for expressions of interest - March
Formal invitations received, collation of site acceptances - April
Allocation of site codes - April
Generation and distribution of data collection forms - April
Data collection – May - June
Study assessment: Post Data Collection Questionnaire
Data received from sites with in-house databases – June - July
Data entry and validation - July - September
Missing Data reports forwarded to sites - July - September
Integration of returned missing data - September
Final Data Analysis – October - November
Draft Pooled Data Report - December
Final Site Data Analysis Reports forwarded to sites - January
Final Pooled Data Report - January
Study assessment: Site Report Assessment Questionnaire

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