# National Quality Use of Medicines Indicators for Australian Hospitals:
## Data Collection Tool User Guide

2014

# Contents

# 1. Introduction

The National Quality Use of Medicines Indicators for Australian Hospitals[1] (National QUM Indicators) provides a set of process indicators developed for use by health professionals and Australian hospitals. They have been designed to support the measurement of judicious, appropriate, safe and effective use of medicines for quality improvement purposes.

A set of data collection tools have been produced to support the use of the National QUM Indicators. These tools can be downloaded from **www.nswtag.org.au** and **www.safetyandquality.gov.au**. This document provides guidance on the use and technical aspects of these data collection tools.

Information on sampling, methods of data collection, analysis and presentation of results, can be found in the *Using the National Quality Use of Medicines Indicators for Australian Hospitals* section of the National QUM Indicators manual.

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1.  Australian Commission on Safety and Quality in Health Care and NSW Therapeutic Advisory Group Inc. (2014), *National Quality Use of Medicines Indicators for Australian Hospitals*. ACSQHC, Sydney

# 2. Using the data collection tools

## 2.1 Description of the data collection tools

The data collection tools have been developed in Excel 2010®. There is a separate data collection tool for each National QUM Indicator.

Each tool is comprised of three worksheets titled *data*, *summary* and *indicator*. See Figure 1.

- The **data** worksheet provides a data entry point for raw data, hospital information and demographics.
- The **summary** worksheet contains the summary of the collated results.
- The **indicator** worksheet provides a preview of the indicator. Double clicking on this worksheet brings up the complete indicator.

**Figure 1: Screenshot displaying worksheet tabs**

| Hospital name: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Number of beds in the hospital: | | | Date of audit: | | | | |
| | | | | | | | |
| | Questions | | | | | | |
| | 1 | 1A | 2 | 3 | 4 | 5 | 6 |
| Patient audit number | Is the Best Possible Medication History (BPMH) documented? | Where is the BPMH documented? | Was more than one source of medicines information used to confirm the BPMH? | Was the BPMH checked against prescribed inpatient therapy and, where required, reasons for discrepencies documented? | Age of patient | Ward or team | Comments |
| | *Yes, No* | *NIMC, Medical notes, Medication reconciliation form (e.g. MMP), Nursing notes, Other* | *Yes, No, N/A* | *Yes, No, N/A* | *Number* | *Free text* | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |

Data fields that are essential for indicator calculation have been locked to protect the integrity and functionality of the data collection tools.

Each tool can be used for initial (baseline) and any subsequent audits. (See section 2.4 for more information.)

## 2.2  Locating the data collection tools

The data collection tools are available from the NSW Therapeutic Advisory Group's website **www.nswtag.org.au**, and the Australian Commission on Safety and Quality in Health Care's website **www.safetyandquality.gov.au**. There is a data collection tool for each indicator. Indicators and tools are listed in sequential order under the relevant practice area: Antithrombotic therapy, Antibiotic therapy, Medication ordering, Pain management, Continuity of care, Hospital-wide medication management policies and Acute mental health care.

## 2.3  Downloading the data collection tools

The data collection tools can be downloaded by clicking on the relevant data collection tool. The tools can be downloaded onto a laptop computer for direct data entry into the *data* worksheet or onto a desktop computer. See Section 2.5 for further details about data collection and entry.

## 2.4  Saving the data collection tools

For the purpose of collecting data, the data collection tool(s) should be saved on a local hard drive as Microsoft Excel® Macro-Enabled Worksheets. When opening and saving the tool(s), the user must select the option 'Enable Content' located at the top of the worksheet. This will ensure the tool has full functionality. See Figure 2.

### 2.4.1  Managing data collection tools locally

There are two options available to manage new audits locally:

1.  Downloading the required data collection tool from the website each time a new audit is started.
2.  Creating a local master copy.

A master copy of the (unused) data collection tool can be saved to a local hard drive using an appropriate file name e.g. *Master copy QUM Indicator [number]_[Date]*. This master may then be copied, resaved and renamed for each audit.

**Figure 2:  Screen shot displaying 'Enable Content' functionality**

## 2.5  Data collection and entry using the data worksheet

### 2.5.1  Methods for data entry

The best method for entering data into the *data* worksheet will depend on the specific QUM indicator being measured. For those indicators where data is collected retrospectively, the data may be entered directly into the Excel® spreadsheet. For example, when data is collected from discharge summaries for indicators 1.6, 5.1, 5.2, 5.3 and 5.8.

For other indicators it may be easier to print out the data collection tool and use the printed version to record the data by hand. This information can then be transferred into the electronic *data* worksheet at a later stage. This method is likely to be most useful when:

- more than one person is collecting data;
- more than one source of information is used;
- when data is collected prospectively, as part of routine tasks e.g. review of medication charts.

**Printing out the data worksheet**

The following settings should be chosen when printing the *data* worksheet:

- Print Active Sheets
- Landscape Orientation
- Fit all Columns on One Page

It is good practice to ensure the name and contact details of the data collector are recorded at the top of the printed *data* worksheet in case further information or clarification of the data is required.

### 2.5.2  Entering data into the electronic data worksheet

The following applies when entering data into the electronic *data* worksheet or transferring information from the printed *data* worksheet to the electronic *data* worksheet.

**Hospital and other information including audit date**

This information should be entered in the boxes as indicated.

**Essential and contextual information**

In addition to the essential data required for calculating the overall result for the indicator, many of the data collection tools include additional data fields. Their purpose is to provide contextual information to support reporting and use of the data and results, see example in Box 1 and Figure 3.

**Box 1:  Example of essential and contextual data fields**

**Example:**  QUM Indicator 3.1: *Percentage of patients whose current medicines are documented and reconciled at admission.*

**Essential data fields**

- Is the Best Possible Medication History (BPMH) documented?
- Was more than one source of medicines information used to confirm the BPMH?
- Was the BPMH checked against prescribed inpatient therapy and, where required, reasons for discrepancies documented?

**Contextual data fields**

- Where is the BPMH documented?

The contextual data field may assist with interpreting the indicator result and targeting specific areas for quality improvement.

**Figure 3:  Screen shot of a data collection tool displaying essential and contextual data fields and pre-defined drop down lists**

| | Questions | | | |
|---|---|---|---|---|
| | 1 | 1A | 2 | 3 |
| **Patient audit number** | **Is the Best Possible Medication History (BPMH) documented?** | **Where is the BPMH documented?** | **Was more than one source of medicines information used to confirm the BPMH?** | **Was the BPMH checked against prescribed inpatient therapy and, where required, reasons for discrepencies documented?** |
| | *Yes, No* | *NIMC, Medical notes, Medication reconciliation form (e.g. MMP), Nursing notes, Other* | *Yes, No, N/A* | *Yes, No, N/A* |
| 1 | Yes | NIMC | No | Yes |
| 2 | Yes | Medical notes | Yes | Yes |
| 3 | No | N/A | N/A | N/A |
| 4 | Yes | Nursing notes | No | ⬍ s |
| 5 | | | | |
| 6 | | | | |

## Additional information

Where relevant, there are additional data fields for recording the age of the patient, ward or team, and comments. An example is shown in Figure 4.

The comments column may be used at the discretion of the auditor, for example, to make a note for further follow-up or to provide extra contextual information. It is recommended that this information is kept to a minimum as review of large amounts of free text is difficult particularly when it is not standardised or defined. The nature of the information to be collected and the way it is to be entered should be defined prior to commencing the audit.

**Figure 4: Screen shot of a data collection tool displaying use of the columns for additional information**

| | Questions | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 1A | 2 | 3 | 4 | 5 | 6 |
| Patient audit number | Is the Best Possible Medication History (BPMH) documented? | Where is the BPMH documented? | Was more than one source of medicines information used to confirm the BPMH? | Was the BPMH checked against prescribed inpatient therapy and, where required, reasons for discrepencies documented? | Age of patient | Ward or team | Comments |
| | Yes, No | NIMC, Medical notes, Medication reconciliation form (e.g. MMP), Nursing notes, Other | Yes, No, N/A | Yes, No, N/A | Number | Free text | |
| 1 | Yes | NIMC | No | Yes | 18 | medical | pt interview and own meds |
| 2 | Yes | Medical notes | Yes | Yes | 65 | surgical | checked with carer |
| 3 | No | N/A | N/A | N/A | 90 | obstetrics | |
| 4 | Yes | Nursing notes | No | Yes | 67 | surgical | own meds |
| 5 | | | | | | | |

## Age information

The unit for age is years. For children aged less than 1 year of age, data should be entered either as a decimal fraction (e.g. 6 months of age as 0.5) or as a fraction (6/12). If age is entered as a fraction it must have an equals sign preceding it e.g. =6/12. Excel® will convert the figure into decimals, the format required for calculations in the *summary* worksheet (see Figure 5). If more details of a patient's age are required, Excel® can be used to calculate ages using a simple formula. For example, if the age of a 2 year and 2 month old child is entered as =2+2/12, Excel® will convert this data to the decimal figure 2.17.

**Figure 5: Example showing the entry of age data for a child less than one year old.**

| | 4 | | | | 4 | |
|---|---|---|---|---|---|---|
| h the tive dose | Age of patient | Ward or T | | h the tive dose | Age of patient | Ward or T |
| | Number | Free text | | | Number | Free text |
| | 10 | | | | 10 | |
| | =6/12 | | | | 0.5 | |
| | | | | | | |

**Pre-defined data options**

Many of the data fields have pre-defined drop down lists for data entry (see Figure 6). In general, these options are protected and cannot be amended. For some tools, modifications may be made to certain data fields by changing the options available in the drop down lists. Refer to 2.6.2 *Tailoring options in drop down lists* for further information.

**Figure 6: Screen shot of a data collection tool displaying pre-defined drop down lists**

| | Questions | | | |
|---|---|---|---|---|
| | **1** | **1A** | **2** | **3** |
| **Patient audit number** | **Is the Best Possible Medication History (BPMH) documented?** | **Where is the BPMH documented?** | **Was more than one source of medicines information used to confirm the BPMH?** | **Was the BPMH checked against prescribed inpatient therapy and, where required, reasons for discrepencies?** |
| | *Yes, No* | *NIMC, Medical notes, Medication reconciliation form* | *Yes, No, N/A* | *Yes, No, N/A* |
| 1 | Yes | NIMC | No | Yes |
| 2 | Yes | Medical notes | s | Yes |
| 3 | No | NIMC / Medical notes / Medication reconciliation form / Nursing notes / Other (use Comments column) | A | N/A |
| 4 | Yes | | | |
| 5 | | | | |
| 6 | | | | |

When using a printed *data* worksheet, record the relevant pre-defined options on the worksheet. This will assist with data entry into the *electronic* worksheet.

## Pre-defined answers

For some essential questions, the entry of data will generate a pre-defined answer in subsequent data fields. In these cases there is only one possible answer and the fields are populated automatically. See Box 2 and Figure 7 for examples.

**Box 2:  Example of automatic population of data fields using pre-defined answers**

**Example:**  QUM Indicator 2.5: *Percentage of patients presenting with community acquired pneumonia that are prescribed guideline concordant antibiotic therapy.*

**Question 1:**  Is there documentation that a validated objective score of pneumonia severity was used? If the response is No, the following 4 data fields will automatically populate with N/A (not applicable).

**Figure 7:  Example displaying automatic population with N/A**

| | Questions | | | | |
|---|---|---|---|---|---|
| | **1A** | **1B** | **2** | **3** | **4** |
| Patient audit number | Is there documentation that a validated objective measure of pneumonia severity was used? | If Q1 is 'Yes', which validated scoring tool was used? | What was the patient's level of CAP severity? *Severity incorporates score from tool (if used) and clinical judgement* | Was antibiotic therapy concordant with guideline recommendations? | If Q3 is 'No', what was the reason for non-concordance? |
| | *Yes, No, N/A (if paediatric)* | *Free text* | *Mild, Moderate, Severe, if no severity assigned, auditor should determine level of severity then answer Question 3* | *Yes, No* | *Wrong antibiotics, Missing antibiotics, wrong region (tropical/non-tropical) Microbiology recommendation, Additional risk factors not considered, Other* |
| 1 | No | N/A | N/A | N/A | N/A |
| 2 | Paed therefore N/A | N/A | N/A | | |
| 3 | Yes | | | | |
| 4 | | | | | |

## 2.6 Interpretation of the summary worksheet

### 2.6.1 The indicator result

The first line of results in the *summary* worksheet, after the demographic information, displays the overall indicator result. In some cases there may also be a secondary result displayed. Where contextual data has been collected this will be presented in summary form in tables underneath the result(s).

Results are presented as absolute numbers and percentages. See Figure 8.

**Figure 8: Example displaying the indicator results in the summary worksheet**

| | | | |
|---|---|---|---|
| **Hospital name:** | Metro | |
| **Number of beds in the hospital:** | 430 | |
| | | |
| | | |
| Total Number of Patients Audited | Data point | Patients with acute coronary syndrome that are prescribed appropriate medications at discharge |
| 35 | Number | 13 |
| | Percentage | 37% |
| | | |

### 2.6.2 Tailoring options in drop down lists

A number of the data collection tools allow the auditor to tailor options in the drop down lists within the *data* worksheet. This functionality is managed in the *summary* worksheet. See Box 3 and Figure 9 for examples.

Figure 9 shows how options can be managed within the *summary* worksheet using the 'Edit Options' functionality in the left hand column.

**Box 3: Example of QUM Indicator 2.2 which allows tailored options for drop down lists**

**Example:** QUM Indicator 2.2: *Percentage of prescriptions for restricted antibiotics that are concordant with drug and therapeutic committee approved criteria*.

The first question on the data collection tool asks the name of the restricted antibiotic prescribed. The auditor selects the antibiotic from a pre-defined list of restricted antibiotics. The content of this list is managed via a table on the *summary* worksheet. Antibiotics may be added or removed from this list to reflect local policy.

**Figure 9: Screen shot of options for QUM Indicator 2.2 in the summary worksheet**

| | | | Indicator 2.2: Prescriptions for restricted antibiotics that are concordant with DTC approved criteria | |
|---|---|---|---|---|
| **4** | **Hospital name:** | | | |
| **5** | **Number of beds in the hospital:** | | **Audit date:** | |
| **6** | | | | |
| **7** | | | | |
| **8** | Total Number of Prescriptions Audited | Criteria | Indicator 2.2: Prescriptions for restricted antibiotics that are concordant with DTC approved criteria | |
| **9** | 0 | Number | 0 | |
| **10** | | Percentage | | |
| **11** | | | | |
| **12** | | | | |
| **13** | **Summary of each data point** | | | |
| **14** | | Data point | The restricted antibiotic was prescribed in accordance with DTC approved criteria | Use of the antibiotic was individually approved by microbiology/infectious diseases department |
| **15** | | Number of antibiotics | 0 | 0 |
| **16** | | Percentage | | |
| **17** | | | | |
| **18** | | | | |

| | Restricted antibiotic list *Note this list can be added to by each site* | Number of times antibiotic was prescribed in the patients audited | Percentage of total antibiotics audited |
|---|---|---|---|
| 19 | | | |
| 20 | Azithromycin | 0 | |
| 21 | Aztreonam | 0 | |
| 22 | Cefepime | 0 | |
| 23 | Cefotaxime | 0 | |
| 24 | Ceftazidime | 0 | |
| 25 | Ceftriaxone | 0 | |
| 26 | Ciprofloxacin | 0 | |
| 27 | Clarithromycin | 0 | |
| 28 | Doripenem | 0 | |
| 29 | Ertapenem | 0 | |
| 30 | Erythromycin | 0 | |
| 31 | Imipenem | 0 | |
| 32 | Meropenem | 0 | |
| 33 | Moxifloxacin | 0 | |
| 34 | Quinupristin with dalfopristin | 0 | |
| 35 | Rifampicin | 0 | |
| 36 | Sodium fusidate | 0 | |
| 37 | Telcoplanin | 0 | |

If any changes are made to the list in the *summary* worksheet the options are automatically updated and displayed within the *data* worksheet, as shown in Figure 10, and the data collection tool is ready to use.

**Figure 10:  Screen shot of the drop down list for QUM Indicator 2.2 in data worksheet**



### 2.6.3  Display of additional data

If patient age has been collected in the *data* worksheet, the *summary* worksheet will display:

- average patient age in years;
- age range i.e. youngest and oldest age (in years); and
- number of patients aged 16 years or younger.

Data collected in the fields labelled 'Ward or team' and 'Comments' are not summarised in the *summary* worksheet.

## 2.7  The indicator worksheet

Users should refer to the full published indicator information when using the National QUM Indicators. The preview available on the *indicator* worksheet does not include complete references or tables of supporting information. The complete indicator can be viewed by double clicking on the preview.

*Disclaimer*

*The data collection tools have undergone limited testing prior to publication. Any technical issues and/or suggestions for improvement should be emailed to nswtag@stvincents.com.au.*