



# General Practice Medication Reconciliation 2018-19

*Every patient, every time*



*Adapted with permission*



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# Section 1: Introduction

## 1.1 Background

A key aim of Safety in Practice is to reduce the harm experienced from medication use. Adverse drug events (ADEs) are major causes of patient morbidity and mortality and a source of significant cost for both patients and organisations.<sup>1,2</sup> Preventing these remains a top patient safety priority, not only in hospitals but also across the continuum of care for patients.<sup>3</sup>

It is well recognised in the literature that points of transition – admission, transfer and discharge are times of risk for medication errors<sup>4</sup>. The Institute of Medicine reports that more than 40% of medication errors result from inadequate reconciliation in handovers during admission, transfer and discharge of patients, of which 20% were believed to result in harm.<sup>5</sup> Patients with one or more medicines missing from their discharge information are 2.3 times more likely to be readmitted to hospital than those with correct information on discharge<sup>6</sup>.

“Medicines reconciliation is the process of collecting, comparing, and communicating the ‘most accurate’ list of medicines that a patient is taking, together with details of any allergies and/or adverse drug reactions (ADRs), with the outcome of providing correct medicines for a given time period”<sup>1</sup>.

Many organisations have demonstrated that implementing medication reconciliation at all transitions of care is an effective strategy for preventing ADE.<sup>7</sup>

‘Implementing Medicines New Zealand 2015-2020’ emphasises that healthcare providers will need to work together to ensure medicine reconciliation happens consistently at each transition and involves the patient. Safety in Practice is working to facilitate improved communication in this area through combining the learning and sharing experiences of both General Practices and Pharmacies in 2018/19. Both have modules looking at different aspects of the medication reconciliation process.

## 1.2 Aim

**“All discharge summaries received will be reviewed, with both medication reconciled and actions completed, within seven calendar days”**

## 1.3 Equity

Reducing inequalities in outcomes between Maori and other high needs groups compared to the general population is a priority at all levels of the health system, including Auckland and Waitemata DHB's.<sup>8</sup> Although overall rate of amenable mortality in NZ is declining, disparities between ethnicities remain, with Maori having rates 2.7 times higher and Pacific people rates 2.4 times higher than non-Maori, non-Pacific population<sup>9</sup>. Long term conditions like diabetes, cancers, cardiovascular disease, respiratory disease, chronic kidney disease, musculoskeletal and other conditions have the most significant impact on this, accounting for 88% of health loss.<sup>9</sup> Patients with these conditions are more likely to be prescribed a greater number of medications, with associated risks of medication interactions and ADEs. They are also more likely to be admitted to hospital with the associated risks of medication changes and ADEs at these transition points of care, particularly discharge back to the community.

While Safety in Practice is not a programme specifically focused on equity issues, it is well recognised that for those groups who are already experiencing poorer health outcomes, the very reasons that contribute to this also could make them more at risk of errors, oversights, miscommunications and receiving care that is less able to meet their needs. Working on processes to improve patient safety overall would be expected to have particular benefit for reducing risk for these groups, which would contribute to reducing inequity.

Practices can focus their work to look at specific higher risk groups using an equity lens.

Some examples might be:

- Selecting discharge summaries only for particular groups and then selecting the sample of 10 patients randomly from these. Dr Info and Mohio both allow either selection by Maori, or by high needs, or ordering them according to ethnicity.
- Specifically seeking input from patients from these groups on their experience of the practice's Medication Reconciliation systems, and how they might be improved from the patient interaction point of view.

## 1.4 Measures & rationale

**Measure 1:** Has medication reconciliation (as defined above) occurred within seven CALENDAR days of the Electronic Discharge Summary (EDS) being received?

### Rationale

- Transition points in care are recognized as being a focus of risk when medications may have been altered.
- Reconciling any changes in medications has been shown to reduce the rates of ADE and patient harm.

### Sources

Institute of Health Improvement. 2017. *Medication reconciliation to prevent adverse drug events*. Available at: <http://www.ihi.org/Topics/ADEsMedicationReconciliation/Pages/default.aspx>

**Measure 2:** Has the patient's regular medication list been updated?

### Rationale

- The first prescription from General Practice following a discharge from hospital is associated with a higher rate of errors and potential harm. It is therefore important that medication changes are recorded in a clear way as soon as possible after discharge, so that old medications which should have been stopped are not continued, incorrect doses are not inadvertently prescribed or medications that have been started in hospital are not continued.
- Patients with one or more medicine missing from their discharge information are 2.3 times more likely to be readmitted to hospital than those with correct information on discharge.

### Sources

Stowasser DA, Stowasser M, Collins DM. 2002. A randomised controlled trial of medication liaison services - acceptance and use by health professionals. *Journal of Pharmacy Practice and Research* 32: 133-40.

**Measure 3:** Is it documented that any significant medication changes have been discussed with the patient or their representative within seven CALENDAR days of receipt?

### Rationale

- Patients do not always understand and remember instructions and information when they are or have been in hospital – a time when they are usually at their most unwell.
- Ensuring implementation and understanding of medication changes is a crucial part of the medication reconciliation process.
- Complicating factors such as receiving blister packs and having supplies of medication in the home may result in changes not being implemented by patients in the way that might appear on the discharge summary.

### Sources

As above

# Section 2: Instructions

## 2.1 Collect your baseline data



### 2.1.1 Identify patients

On the day of the data collection each month, run the query related to your module, available to download from <http://www.safetyinpractice.co.nz> in the Resources section.

### Tips for queries in Medtech32

**MedTech-32 Query Builder**

Query Name: **Discharge summary WDHB**

Column	Condition
Patient - Enrolment Status Code	Equal to Confirmed Enrolment (C)
In Box - Date Received	Between Mon 17 Feb 2014 00:00:00 and Wed 02 Mar 2014 00:00:00
In Box - Subject	Contains WDHB

Ensure accurate date

Ensure correct DHB

Build query in order as specified above (for advanced users only)

Select:

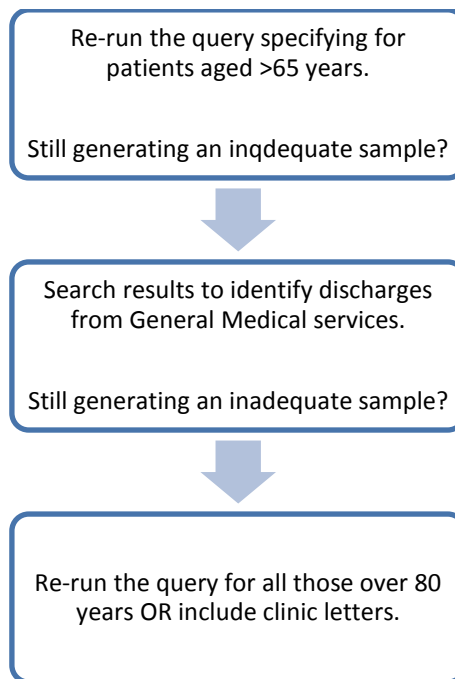
- Patient - NHI No
- In Box - Date Received
- In Box - Subject
- In Box - Provider Code
- In Box - Audit - Date/Time - First Added

Output data in order specified above

Buttons: Query Store, Run Query, Run SMS Query, View SQL

ID: TLS10

If running this query does not generate a sample that allows you to assess your medication reconciliation process (e.g. most discharge summaries are from the emergency department or for children and requiring minimal change to medications) then follow the diagram below:



**Tip:** It is important to ensure you follow exactly the same process each month.



## 2.1.2 Randomise

From the list generated in step 2.1.1 it is important to select a **random sample of 10 patients to audit**.

### For sample sizes up to 10

1. Audit all 10 patients.

### For sample sizes of 11 - 28

1. Select a random number between 1 and 10 by picking pieces of paper out of a hat.
2. If you select an odd number audit every other patient starting at 1 e.g. 1st, 3rd, 5th, 7<sup>th</sup> etc.  
If you select an even number audit every other patient starting with the second patient e.g. 2nd, 4th, 6th, 8<sup>th</sup> etc.

### For sample sizes 29+

1. Select a random number between 1 and 10 by picking pieces of paper out of a hat.
2. Audit every other patient starting at this number e.g. if 6 is drawn audit the 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup> patient etc.

## 2.1.3 Audit

Review each of your 10 selected records against the following criteria. You can use the Paper Form provided on the resources section of our website 1 to keep track or simply enter records directly onto the audit spread sheet.

### 2.1.3.1 Measures & guidance

**Measure 1:** Has medication reconciliation (as defined below) occurred within seven CALENDAR days of the EDS being received?

**Guidance**

Medicines reconciliation is defined by the HQSC as:

*“The process of collecting, comparing, and communicating the ‘most accurate’ list of medicines that a patient is taking... with the outcome of providing correct medicines for a given time period”<sup>1</sup>*

Select YES if medicines reconciliation as defined by HQSC has occurred within seven calendar days of the EDS being received by the practice.

Select NO if medication reconciliation has not occurred within seven calendar days of the EDS being received by the practice.

**Measure 2:** Has the patient's regular medication list been updated?

**Guidance**

Select YES for all discharges with changes required that were documented in the patient's clinical record.

Select NO for all discharges with changes required that were not documented in the patient's clinical record.

Select N/A for all discharges where there are no changes to the medications.

**Measure 3:** Is it documented that any significant medication changes have been discussed with the patient or their representative within seven CALENDAR days of receipt?

**Guidance**

Using the PMS, identify if it is documented that any significant changes to the medications were discussed with the patient or their representative.

Select YES for all discharges with changes discussed with the patient or their representative documented.

Select NO for all discharges with changes discussed with the patient or their representative not documented.

Select N/A for all discharges that have no changes to the medications.

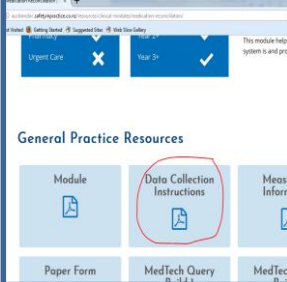
**Overall compliance**

**Guidance**

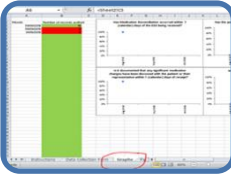
If EACH of the above measures have been completed correctly so score a YES, or were not relevant to that discharge summary so had some scores of N/A, then the spread-sheet will automatically update the overall compliance to being YES.

## 2.1.4 Complete the spread sheet

**Tip:** Your first set of data is relating to the month of August so this is due on September 10<sup>th</sup>. For this data set record August in the first column.

	<table border="1"> <tr> <th>Review Date: please type date beside each individual record for current month</th> <th>Has Medication Reconciliation occurred within 7 (calendar) days of the EDS being received?</th> <th>Has the patient's regular medication list been updated?</th> </tr> <tr> <td>01/08/2018</td> <td></td> <td></td> </tr> </table>	Review Date: please type date beside each individual record for current month	Has Medication Reconciliation occurred within 7 (calendar) days of the EDS being received?	Has the patient's regular medication list been updated?	01/08/2018			<table border="1"> <tr> <th>Review Date: please type date beside each individual record for current month</th> <th>Has Medication Reconciliation occurred within 7 (calendar) days of the EDS being received?</th> <th>Has the patient's regular medication list been updated?</th> </tr> <tr> <td>01/08/2018</td> <td>y</td> <td>n</td> </tr> </table>	Review Date: please type date beside each individual record for current month	Has Medication Reconciliation occurred within 7 (calendar) days of the EDS being received?	Has the patient's regular medication list been updated?	01/08/2018	y	n	<table border="1"> <tr> <th>Has it been documented that any significant medication changes have been discussed with the patient or their representative within 7 (calendar) days of receipt?</th> <th>Overall Compliance</th> </tr> <tr> <td></td> <td></td> </tr> <tr><td></td><td>n</td></tr> <tr><td></td><td>n</td></tr> <tr><td></td><td>n</td></tr> <tr><td></td><td>n</td></tr> <tr><td></td><td>n</td></tr> </table>	Has it been documented that any significant medication changes have been discussed with the patient or their representative within 7 (calendar) days of receipt?	Overall Compliance				n		n		n		n		n
Review Date: please type date beside each individual record for current month	Has Medication Reconciliation occurred within 7 (calendar) days of the EDS being received?	Has the patient's regular medication list been updated?																											
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<p>Download the spread sheet for your module in the Resources section of <a href="http://www.safetyinpractice.co.nz">www.safetyinpractice.co.nz</a></p>	<p>Record the month <b>the data relates to</b> in a DD/MM/YY format left column. For your first data set collected in September this is 1/8/18,</p>	<p>Mark y, n or n/a against for each measure and each patient according to your findings in the previous section.</p>	<p>The final measure "Overall compliance" will auto-populate.</p>																										

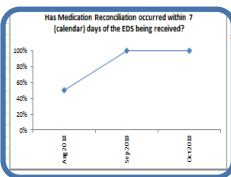
**Tip:** Please don't audit more than 10 patient for a given month or add or remove rows from the spread sheet as this will disrupt the formulas and cause the graphs to break.



Graphs will be automatically generated in the next tab in the spreadsheet.

Referral type (from service) Each individual provided for current month	Has Medication Reconciliation occurred within 7 (calendar) days of the EDs being received?	Has the patient medication been reconciled?
01/08/2018	n	n
01/08/2018	n	n
01/08/2018	n	n
01/08/2018	n	n
01/08/2018	n	n
01/08/2018	n	n
01/08/2018	y	y
01/08/2018	y	y
01/08/2018	y	y
01/08/2018	y	y

Next month add your data to the same spreadsheet.



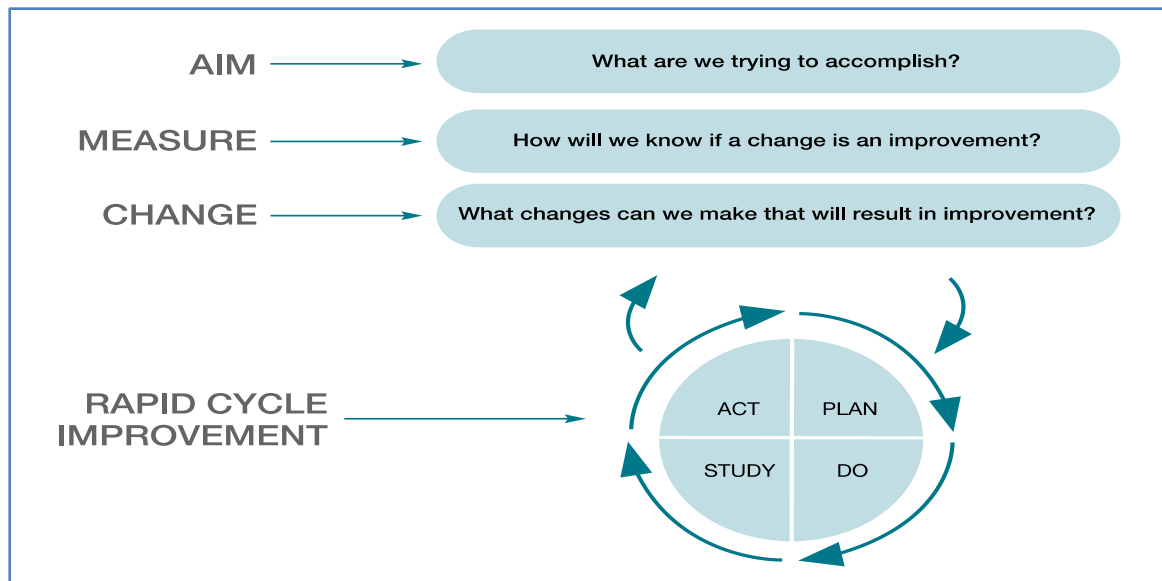
This means you can track your progress over time.

## 2.1.5 Submit

Submit your data on the 10<sup>th</sup> of each month to [audit@safetyinpractice.co.nz](mailto:audit@safetyinpractice.co.nz)

**Tip:** Please ensure all data sent to Safety in Practice is anonymized

## Creating Change – Getting started



Before you start your plan phase:

- Bring together your team – these people will work with you to plan and carry out the test of change
- Select the process you wish to change

As a team answer the 3 questions above:

1. What are we trying to accomplish? (write an objective for this PDSA cycle)
2. How will we know if a change is an improvement?
3. What changes can we make that will result in improvement?

## 2.2 Plan

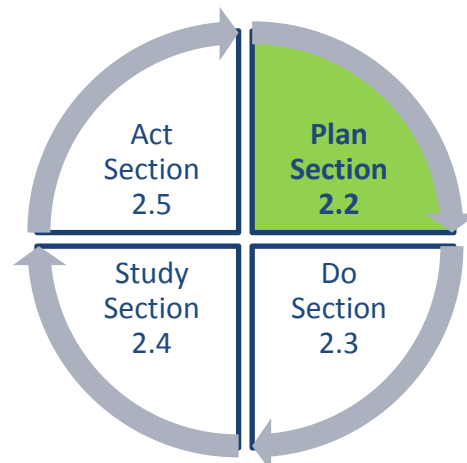
Plan how the changes will happen – ask yourselves and write down the following:

- What will we do?
- Who will carry out the plan?
- When will it take place?
- Where will it happen
- What data and information will we collect – i.e. what will help us determine if the change is an improvement?
- Do we need training or materials?

Make predictions – what do you think will happen when you test the change and why?

Ask yourself:

- What do we hope to learn by



testing the change?

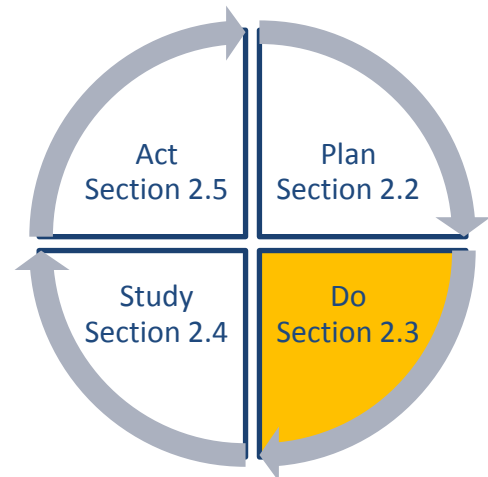
- What will happen when we test the change?
- How will the change be carried out?

## 2.2.1 Change ideas

<b>General</b>	<ul style="list-style-type: none"> <li>• Patient satisfaction survey</li> <li>• Liaise with pharmacy about medication reconciliation changes</li> </ul>
<b>Clinical processes</b>	<ul style="list-style-type: none"> <li>• Block out dedicated clinician time for discharge summary review</li> <li>• Up-skilling of nurses to do medication reconciliation</li> <li>• Blocking out administration time for nurses to do medication reconciliation follow-up</li> <li>• Administration time for nurses to do medication reconciliation follow-up</li> <li>• Triaging of discharge summaries for who most appropriate person to do the medication reconciliation</li> <li>• Audit medication reconciliation at monthly clinical/practice meetings</li> </ul>
<b>Recording in PMS</b>	<ul style="list-style-type: none"> <li>• Set up and use Medtech "Medication Status" categories to identify when new medications started, doses have been altered or medicines have been stopped (see Resources section). This function automatically records that change made in daily record and prints change onto script if printed that day</li> </ul> <p>Alternatively some practices prefer to use READ codes to identify when medication reconciliation has taken place. For example:</p> <ul style="list-style-type: none"> <li>• #8B318 - Medicines Reconciliation</li> <li>• #8B316 - Medication Changed</li> <li>• #8B3A1 - Medication Increased</li> <li>• #8B3A2 - Medication Decreased</li> <li>• #8B313 - Medication Commenced</li> <li>• #8B3A3 - New Medication Commenced</li> <li>• #8B3R - Drug Therapy Discontinued</li> <li>• #8B396 - Treatment Stopped – alternative therapy undertaken</li> <li>• #67IM - Advice to GP to Change Patient Medication</li> <li>• #8B3S0 Patient has been contacted</li> </ul>
<b>Discussion of changes with patient</b>	<ul style="list-style-type: none"> <li>• Clinician doing the reconciliation decides the most appropriate method of going over the changes with the patient (or their representative) e.g. phone the patient, get them to come in to see nurse and go over changes, get them to make doctor's appointment for review, utilise pharmacists if available to assist with this process.</li> <li>• Utilise other staff members to contact the patient and set up the reviews</li> <li>• Send 'low risk' patients a letter or text confirming changes.</li> </ul>

## 2.3 Do

- Prepare to test; gather resources
- Try out your change idea – it's usually best to try it out on a small sample or area of your practice. Starting on a small scale might mean 1 or 2 patients – that way if it doesn't work it's easier to remove the step or process
- While you are testing keep track of what happens in real time – don't wait to write it up



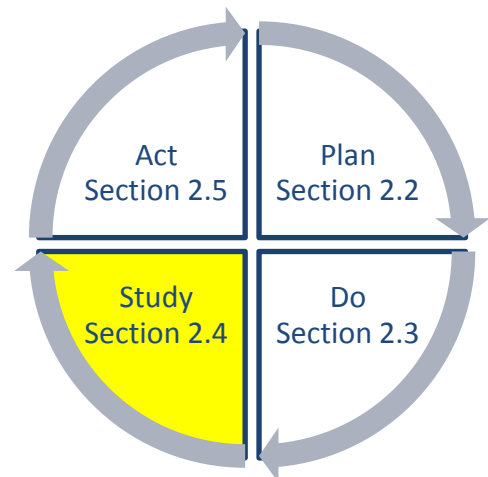
## 2.4 Study

Complete the analysis of the data.

Ask yourself:

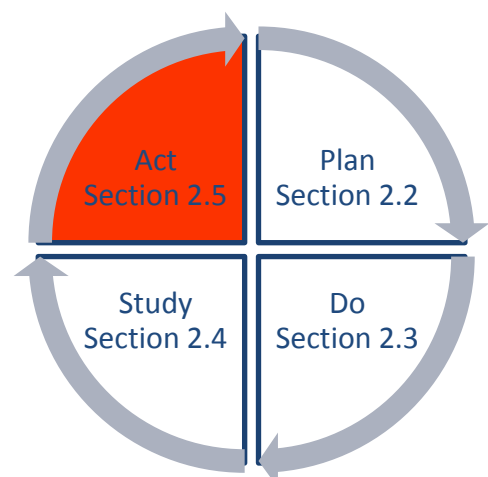
- What has changed
- Who was affected
- Are the effects positive or negative
- Are they worth keeping or removing, adapting or developing

Compare the data to your predictions.



## 2.5 Act

- Summarise and reflect on what was learned.
- Refine the change based on what was learned.
- Are you going to adopt the change, adapt and retest, or abandon?
- Prepare a plan for your next PDSA cycle – back to step 2.2 Plan for your next cycle!



## Previous teams' experiences

Benefits	Challenges
<ul style="list-style-type: none"> <li>• Reduced phone calls from pharmacy.</li> <li>• Confidence within the team that patient's medications are up to date.</li> <li>• Less complicated follow up consultations if work is done upfront.</li> <li>• Nurses feel more confident when patient's call through.</li> <li>• Patients feedback is positive.</li> <li>• Improved concordance.</li> <li>• Good staff buy in to process.</li> <li>• Admin staff find delegating discharge summaries easier.</li> <li>• Using medication reconciliation status for daily prescribing.</li> </ul>	<ul style="list-style-type: none"> <li>• Time commitment required – no easier way out.</li> <li>• Cost to practice for clinician time.</li> <li>• Cost to patients if they need to come in for follow up.</li> <li>• Some discharge summaries lack clarity.</li> <li>• Varying prescribing and discharging clinician styles.</li> <li>• Delay in getting summary from hospital.</li> <li>• Frequent reinforcement needed to effect change.</li> <li>• Identification of near misses</li> <li>• Took time to effect change.</li> <li>• Defining what is a clinically significant drug change.</li> </ul>

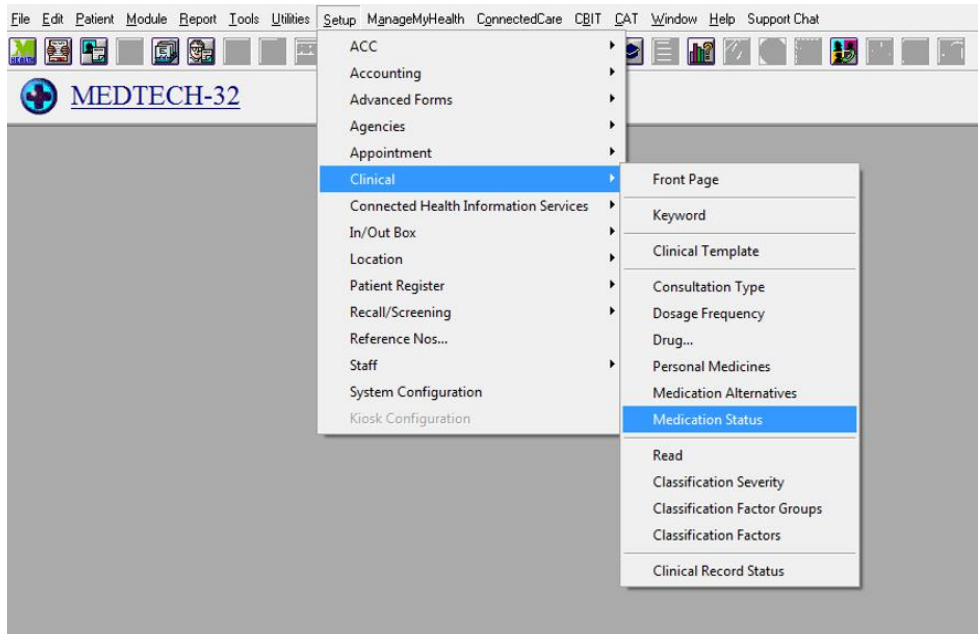


## Section 3: Resources

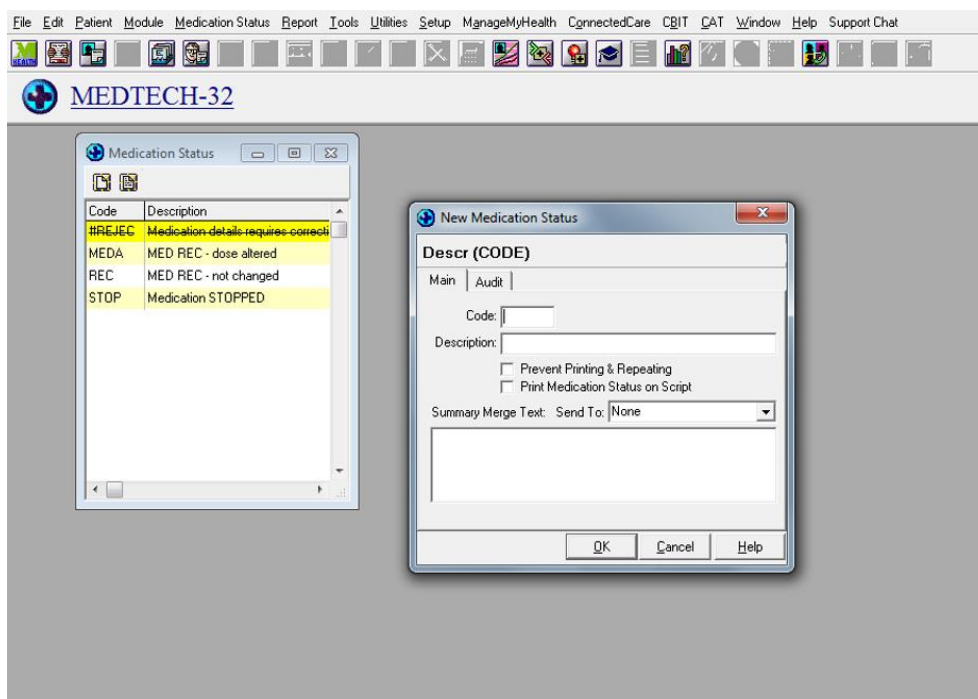
## 3.1 Additional Resources

### Instructions for setting up Medication Status categories in Medtech 32

- Setup – Clinical – Medication Status

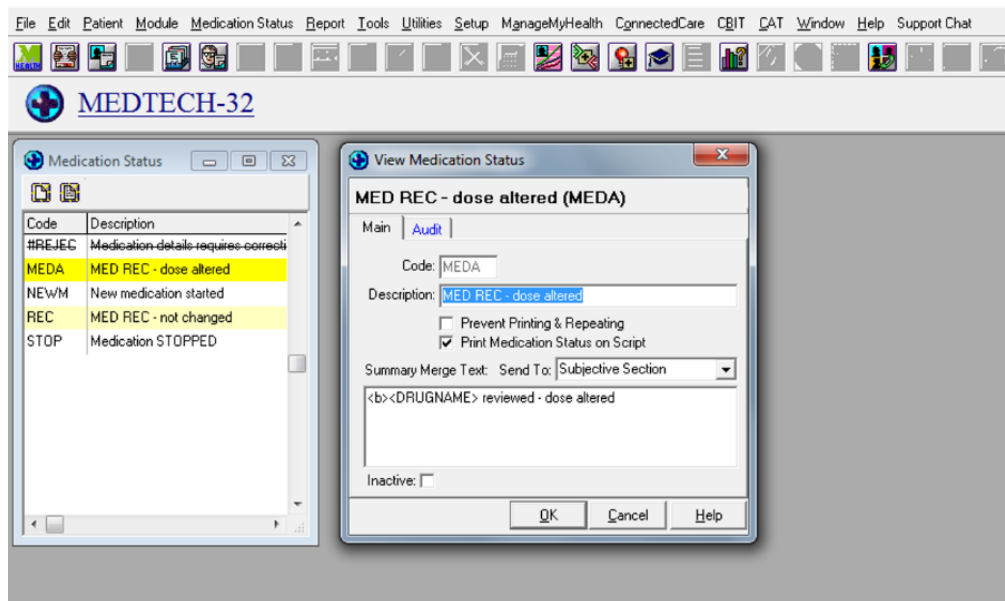


- Add new medication status click on top L hand corner



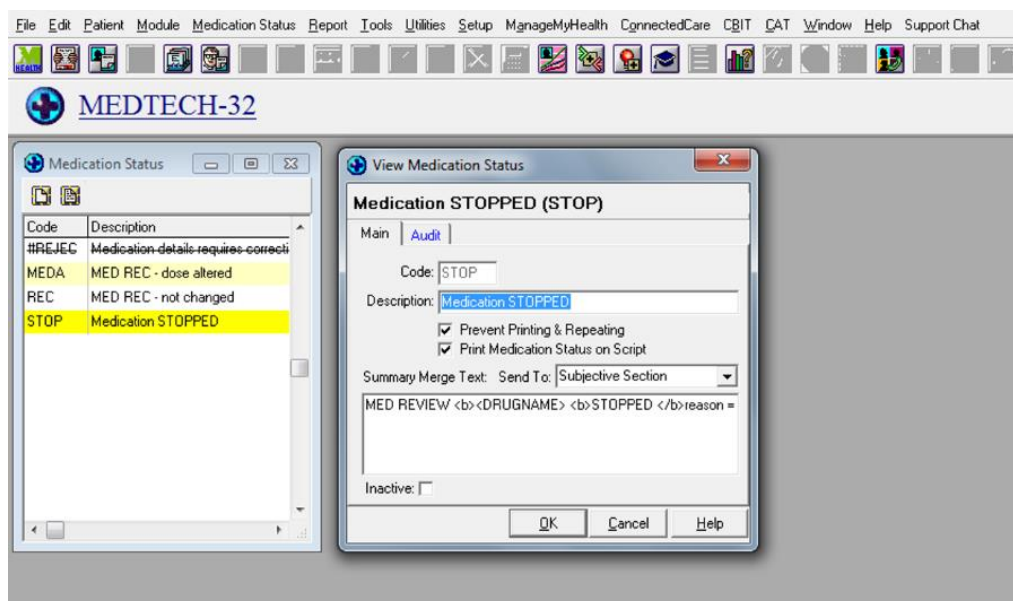
#### Options:

- Medications reconciled dose altered



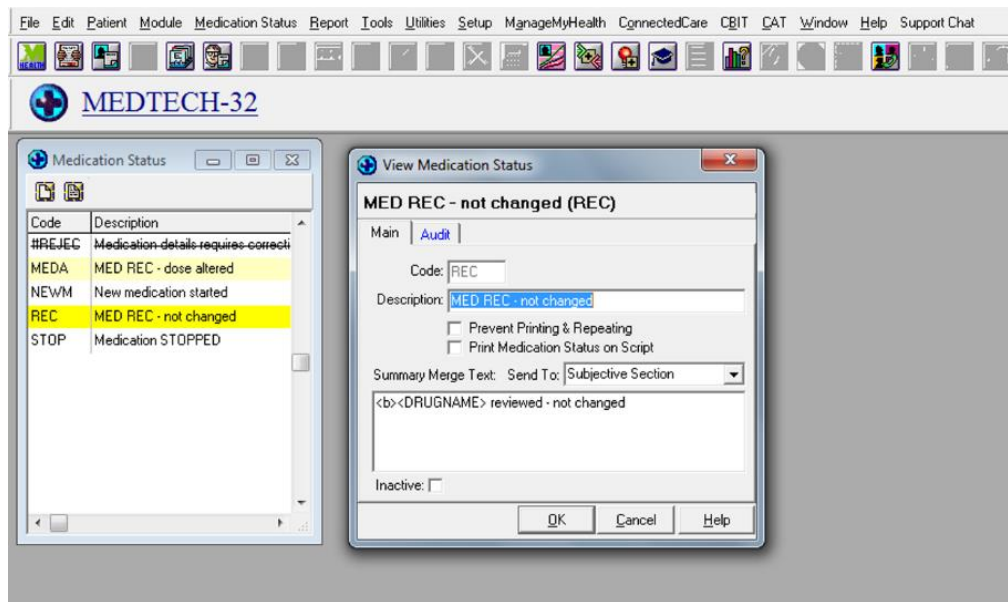
Ticking the box Print Medication Status on script means that when this medication is printed that day it will also have a note on the actual prescription – which can be useful for the pharmacy to know.

- Medications STOPPED



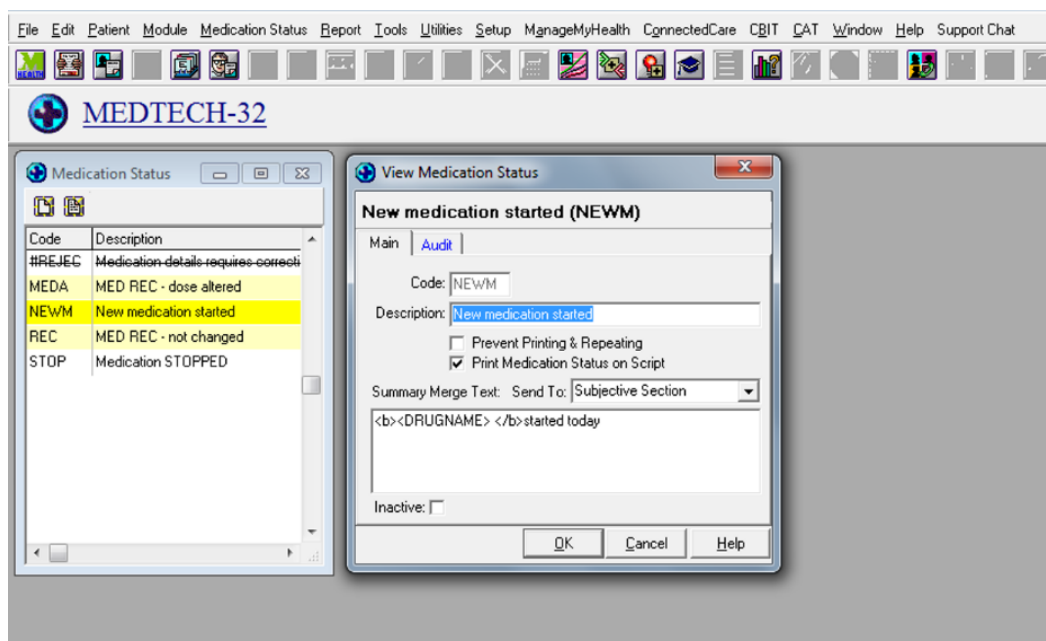
When a medication is stopped it is useful to tick the box “prevent Printing and Repeating”. If this is ticked then that medication will not be able to be printed again. If it is re-started then it will need to be re-prescribed. This helps to avoid the inadvertently repeating a medication which has been stopped. This example also provides space for identifying in the notes (see below) the reason the medication was stopped.

- Medications reconciled not changed



This selection might be used if there are only a couple of individual medicines. If a number of medications have been reconciled but none have changed then an alternative option would be to create a Key Word which can indicate in the daily record that medications have all been reconciled that day.

- New medication started



Notes:

- In any of the above, optional text can be added automatically to the daily record by writing in the Summary Merge Text section and selecting the part of the notes (Subjective or Objective) that this will be recorded.
- Hovering over the free text area then R clicking allows insertion of the <DRUGNAME> option which automatically merges the drug that has been selected. The codes that sit BEFORE the

text e.g. <b> identifies the subsequent text to be in this case written in **bold**. Other options can be selected from the options that show when you hover over it.

- The example outlined for medication STOPPED here has allowed space for writing in the reason for this
- Here is an example of how this might look when each option is automatically printed into the subjective section of the notes

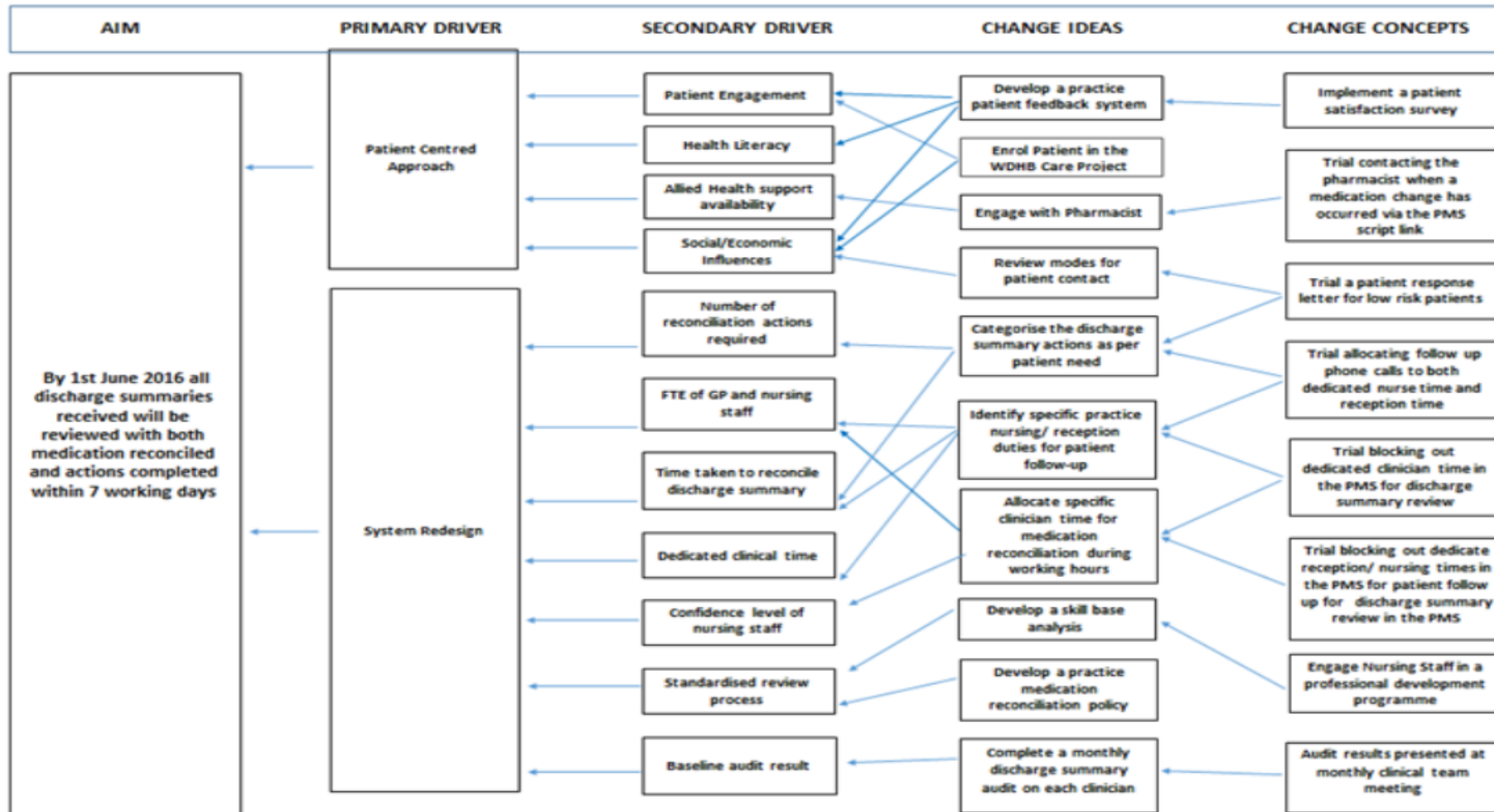
NB these are just examples and there are lots of options that you can create for your practice situation!

## 3.2 MOPs & Cornerstone

The Medication Reconciliation Audit is endorsed by the RNZCGP for Maintenance of Professional Standards (see website).

The audits and PDSA cycles can be used for Cornerstone as a Quality Improvement activity.

### 3.3 Theory of improvement



### 3.5 Glossary

ACE-inhibitor	Angiotensin converting enzyme inhibitor such as lisinopril. An anti-hypertensive medication.
ADE	Adverse Drug Event
ADHB	Auckland District Health Board
ALT	Alanine aminotransferase, a marker of liver function.
AST	Aspartate aminotransferase, a marker of liver function.
ARB	Angiotensin receptor blocker such as candesartan. An anti-hypertensive.
Bundle	Each of the areas identified as presenting the highest risk to patients within the community have been developed into modules. Each module is structured to include a change package and a bundle.
CARM	Centre for Adverse Reaction Monitoring New Zealand
CoX-2 inhibitors	A form of NSAID that, unlike e.g. ibuprofen, only works on the CoX-2 enzyme.
CPAMS	Community Pharmacy Anticoagulation Monitoring Service
CKD	Chronic kidney disease
Change package	A collection of change ideas known to produce a desired outcome in a process or system.
Cytotoxic	A drug that is toxic to living cells.
Dr Info	A clinical information platform used by general practices. Data is extracted and analysed from practices PMS'.
DMARDs	Disease modifying anti-rheumatic drugs. These medications are used in autoimmune diseases such as rheumatoid arthritis.
EDS	Electronic Discharge Summary
eGFR	Estimated glomerular filtration rate, renal function test
FBC	Full blood count
GI	Gastro-intestinal
IHI	Institute of Health Improvement
INR	International Normalised Ratio. This is a marker of coagulability in the blood used to guide warfarin dosage.
H2 antagonists	Gastro-intestinal protective medication
HQSC	Health Quality & Safety Commission of New Zealand
LFTs	Liver function tests
Medication Reconciliation	The process of collecting, comparing, and communicating the 'most accurate' list of medicines that a patient is taking, together with details of any allergies and/or adverse drug reactions (ADRs), with the outcome of providing correct medicines for a given time period
Module	A structured way of improving the processes around patient care: a small, straightforward set of evidence-based practices, generally three to five, that, when performed collectively and reliably, have been proven to improve outcomes.
Mohio	A clinical information platform used by general practices. Data is extracted and analysed from practices PMS'.

NSAIDs	Non-steroidal anti-inflammatory drugs used for pain and inflammation. Examples include ibuprofen, naproxen and diclofenac.
Opioids	Strong pain medications such as codeine, morphine and fentanyl.
OTC	Over the counter
PPI	Proton pump inhibitor such as omeprazole. These medicines reduce stomach acid.
PMS	Patient management system e.g. MedTech, MyPractice, ToniQ
PHO	Primary health Organisation e.g Auckland, Alliance Health Plus, Comprehensive Care, East Health Trust, Total Healthcare, National Hauora Coalition, Procure
TFTs	Thyroid function tests
RNZCGP	Royal New Zealand College of General Practitioners
WBC	White blood cells. Used as a marker of infection and immune system functioning.
WDHB	Waitemata District Health Board
SIP	Safety in Practice



## 3.5 References

1. Health Quality & Safety Commission, 2010. Medicine Reconciliation Standards, Version 3. Wellington: Health Quality & Safety Commission. Available at: [www.hqsc.govt.nz/assets/Medication-Safety/Med-Rec-PR/Medication\\_Rec\\_Standard\\_v3.pdf](http://www.hqsc.govt.nz/assets/Medication-Safety/Med-Rec-PR/Medication_Rec_Standard_v3.pdf)
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