

# SAFE AND QUALITY USE OF MEDICINES NATIONAL STRATEGY 2005

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## Executive Summary

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Medication errors occur in all health care systems. They occur too frequently and many are preventable. Health systems worldwide are putting effort into strategies to make medicine use safer. Many side effects or adverse reactions to medicines are predictable and can be avoided or minimised by careful prescribing and use. Other adverse reactions are unpredictable and, therefore unavoidable.

Safety is one part of the quality use of medicines. To achieve the quality use of medicines people must be provided with safe, effective and appropriate treatment and have the knowledge and skills to use medicines both to their best effect and safely.

The District Health Boards New Zealand (DHBNZ) Chief Executives Group established the Safe Use of Medicines (SUM) Group in April 2003 as a collaborative venture between the District Health Board's. This group organised the Medication Safety and Quality Use of Medicines in New Zealand Workshop in May 2004 both to inform people about the projects the group were working on and to determine the way forward for the group. The delegates at the workshop provided a clear mandate to the group to include quality use of medicines in its focus. The group as a result became the DHBNZ Safe and Quality Use of Medicines Group (SQM).

This safe and quality use of medicines strategy covers activities in both primary and secondary care. It has been designed to provide both a national framework and the national co-ordination of activities to improve medicine related outcomes and to encourage consistency and effectiveness of, and participation in safe and quality use of medicines activities whilst reducing duplication of effort.

Key features of the Safe and Quality Use of Medicines strategy are:

1. Identification of national Safe and Quality Use of Medicines activities to be co-ordinated by the DHBNZ SQM
2. Prioritisation of these national Safe and Quality Use of Medicines activities identified in the strategy document to be co-ordinated by DHBNZ SQM
3. Promotion of a safety culture within the health sector and wider community
4. Encouragement and support for more widespread involvement of all DHB's in safe and quality use of medicines initiatives
5. Identification of quality use of medicines initiatives at a local level so that these can be evaluated and shared nationally
6. Maximisation of outcomes, minimisation of risks and improvement in safety associated with medication use

A co-ordinated approach to the safe and quality use of medicines in New Zealand is expected to take a number of years to become established. In addition, there are the challenges associated with building support for the concept from DHB hospitals, private hospitals, Primary Health Organisations and both primary and secondary care practitioners. The strategy will highlight issues of resource, technology etc that will take considerable time and input from agencies other than DHBNZ SQM to address

## **1 Medicines Safety**

In the last five years, the United States Institute of Medicine's landmark report<sup>1</sup> "To Err is Human" and studies in the United States<sup>2</sup>, United Kingdom<sup>3</sup> and Australia<sup>4</sup> have highlighted the magnitude of adverse events that exist in healthcare. Such adverse events occur in all health care systems, including New Zealand<sup>5</sup>. Furthermore it is clear that safety will not be significantly improved by just "working" the current system harder.

The challenge is to make systemic change and improvement to the way care is fundamentally delivered. It also requires us to take an approach which recognises that humans will always be prone to risk of error and better designed systems and effective technology are necessarily a part of the solution.

Medicine safety is an important area by virtue of the fact that medicines are one of the commonest therapeutic interventions used in the healthcare system. The sheer scale of medicine's usage means that any major reduction or prevention of adverse drug events holds the prospect of a substantially safer health system for everyone.

Significant progress is currently being made by the United Kingdom, Australia and the United States, in particular through the articulation of an overarching national strategy, implementation plans and safety initiatives.

This strategy paper describes the nature of adverse drug events, defines the safe and quality use of medicines, outlines a case for national leadership and coordination and sets forth an agenda on a number of different strategies to take New Zealand toward an environment of safer and better quality use of medicines.

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<sup>1</sup> Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human: building a safer health system. Washington, DC: National Academy Press; 1999

<sup>2</sup> Leape L, Bates DW, Cullen DJ, Cooper J, Demonaco HJ et al. Systems analysis of adverse drug events. JAMA 1995; 274: 35-43

<sup>3</sup> Vincent C, Neale G, Woloshynowych M. Adverse events in British hospitals: preliminary retrospective record review. BMJ 2001; 322: 517

<sup>4</sup> Wilson R, Runciman WB, Gibberd RW, Harrison BT, Newby L et al. The quality in Australian health care study. Med J Austr 1995; 163: 458-471

<sup>5</sup> Davis P, Lay -Yee R, Briant R, Schug S, Scott A et al Adverse Events in New Zealand Public Hospital: principal findings from a national survey. Occasional Paper No 3. Wellington: Ministry of Health; 2001. Available online. URL: <http://www.moh.govt.nz/publications/adverseevents>

## **2 Adverse Drug Events: Definitions, Incidence and Causes**

### **2.1 Background**

It is important to define and distinguish adverse drug events, adverse drug reactions and medication errors.

An adverse drug reaction has been defined by the World Health Organisation as:

*“Any response to a drug which is noxious, unintended and occurs at doses normally used for prophylaxis, diagnosis or therapy”.*

Typically adverse drug reactions can be either those which can be predicted from knowledge of a drug’s effects on the body or those which are unusual, unpredictable reactions that occur in particular individuals.

The US National Coordinating Council for Medication Error Reporting and Prevention has defined medication error as:

*“A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of a health professional, patient or consumer.”*

Most medication errors do not result in any significant harm to people. However because of the usage of medicines, even a small proportion of harmful medication errors represent a significant community burden.

As can be seen from the definitions, adverse drug events may result from a medication error (and therefore are potentially preventable) or as a consequence of normal and appropriate clinical therapy.

The focus of this strategy paper is explicitly on the safe, effective and quality use of medicines. This strategy primarily targets medication error and the reduction and prevention of error in order to reduce the potential for harm to people. A secondary consequence of pursuing a quality use of medicines approach may also help to reduce the likely burden from adverse drug reactions.

### **2.2 Definition of Safe, Effective and Appropriate Use of Medicines**

This paper defines the safe, effective and appropriate use of medicines as follows:

1. Ensuring the best possible outcomes for consumers from their medicines by monitoring outcomes, minimising misuse, over-use and under-use and ensuring compliance
2. Solving and preventing medicine related problems

3. Use of evidence based, best practice information to select the best medicine or other treatment option
4. Considered prescribing that takes into account the individual, the clinical condition, efficacy, risks, benefits, dosage, length of treatment, co-morbidities and other treatment options
5. Consideration of treatment cost-effectiveness, from the perspectives of the individual, community and health system as a whole

### **2.3 Incidence and Causes**

There are a number of studies which have looked at the incidence of reported medication errors including near misses. Voluntary medication error reporting makes it difficult to be certain about the actual incidence and it is impossible to discern trends. From the literature it appears that approximately 1% of people admitted to hospital may suffer from a significant medication error and up to 5-7% of other admissions may suffer from medication errors which result in minor, moderate or no harm.

In the community there is much less known about the nature and incidence of medication error.

The causes of medication error are many. They are caused by an interaction between human and system factors which collectively result in harm or undesirable outcomes for people.

James Reason is a prominent researcher who has focussed on a systems view of error. He uses a “Swiss Cheese” model<sup>6</sup> to illustrate the way in which active failures and latent conditions can influence whether mistakes and lapses ultimately result in harm. In many cases errors can be prevented by systemic checks and safeguards which pick up an error that has happened before harm is caused. Examples of this include; removing or redesigning hazardous situations, system alerts for staff, preventing completion of hazardous actions especially through the use of technology and minimising the harmful consequences of error once it has occurred.

There are many parallels in this systems approach to the approaches used in other industries such as aviation safety and road traffic safety.

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<sup>6</sup> Reason J. Managing the risks of organisational accidents. Ashgate. Aldershot. 1997

## **3 Approach**

### **3.1 Background**

There have been a number of initiatives within New Zealand to establish a national response to the issues of safe and quality use of medicines.

In 2001 the Hospital Pharmaceutical Advisory Committee (HPAC), which included representatives of District Health Boards was established to advise PHARMAC on the National Hospital Pharmaceutical Strategy. This group in tandem with PHARMAC, recognised the need for a national strategy and approach to this whole issue. By 2003, a draft strategy had been developed to outline a possible way forward.

During 2003 District Health Boards working collaboratively through DHBNZ also identified the need for a common approach to improving “the safe use of medicines”. A multi-disciplinary committee of DHB representatives from eight DHBs convened a working party along with representatives of the Ministry of Health (MOH) and PHARMAC. Because of the closeness of the two approaches both groups decided to subsume ongoing work under the single “Safe Use of Medicines” banner. Terms of reference focussed initially on identifying what was happening nationally, choosing high risk medicines to focus on, canvassing possible technology solutions and establishing a network of interested people. There was a conscious decision at this stage not to produce a national strategy because of the desire to concentrate on “doing rather than planning”.

### **3.2 Current Situation**

A key national forum was held in May 2004 to bring together interested people nationally and gain agreement on how New Zealand should progress the safe and quality use of medicines issue. A number of Australian commentators presented current work and progress from Australia. Key findings and conclusions are contained in Appendix 1. In summary there was strong support for an organised national approach. The need for a clear and concise national strategy was articulated along with a mechanism to provide advice at Ministerial level. Other areas identified included the need for a common approach to information technology, wider use of technology, more consistent training, action on high risk medicines and situations, work in the primary care field, better networking, and increased research and evaluation.

By the end of 2004 only three DHBs (Capital and Coast, Auckland and Waitemata) had dedicated full time staff working on quality or safe use of medicines. However in most, if not all DHBs there are staff working for part of their time on a multitude of safety and quality related medication activities.

A variety of activities and initiatives are currently offered within DHBs particularly within hospitals. Some hospitals undertake a significant amount of drug utilisation review (DUR) work or guideline development and implementation, while others have little resource to do so. Some primary care organizations also undertake DUR work and guideline development but again this is not universal. Some hospitals have their own formulary and process for maintaining that formulary. The level of clinical pharmacy ward services provided and the degree to which pharmacy services are involved in discharge procedures is also variable. Drug information centres are in place in some areas and in some cases provide smaller regional support services and assistance to the community sector. Data collection systems, internal processes (such as established medical committees etc) and staffing levels may be factors in the apparent differences between hospitals in this regard.

Thus existing safe and quality use of medicine activities may include, but are not limited to:

1. Drug utilisation review
2. Development of guidelines, formularies and pharmaceutical policies
3. Medication event (“incident”) reporting/management
4. Adverse drug reaction reporting/management
5. Medication disposal/management of discontinued medicines
6. Drug information services
7. Compliance aids
8. Quality assurance in relation to prescribing practice
9. Community/hospital transition management
10. Repeat prescribing in primary care
11. Consumer/practitioner education methods (e.g. peer review, feedback, self-audit etc) and material (e.g. bulletins, Consumer Medicine Information etc).
12. Quality assurance in relation to dispensing, distribution and administration of medicines in hospitals and in the community.
13. Clinical pharmacy services/medication review services.
14. Critical appraisal of medical literature.

As one can see there are many activities that one could do, part of the challenge is to use the very limited resources in an effective manner. In summary, a sensible approach could be summarised by the following general themes:

1. Identification of what initiatives are currently occurring in both primary and secondary care and in which locations.
2. Gathering evidence of effective interventions.
3. Trialing implementation of effective interventions.
4. Evaluation of implementation trials.
5. Facilitating and extending the implementation of successful interventions to other areas.
6. Evaluation of overall health or safety outcomes achieved.

### **3.3 Safe and Quality Use of Medicines Group (SQM)**

As well as outlining a national strategy, this paper also summarises the current status of the DHBNZ “Safe and Quality Use of Medicines” group.

One of the important attributes of the group is its diverse multi-disciplinary membership. Members come from the disciplines of pharmacy, nursing, management, public health, internal medicine, general practice and pharmacology. In addition further general practice and consumer input is being sought. The membership of the group is shown in Appendix 2

Ideally all stakeholders, developers, manufacturers, regulators, marketers, distributors, funders, prescribers, dispensers, administrators of medicines and consumers would be represented, however the practicalities of this would result in a large unwieldy group. Therefore it is expected that consultation with and co-opting of interested parties would occur as needed along with a wider network and regional and national fora as appropriate.

The SQM group is supported by an annual project funding from DHBNZ of \$30,000 along with additional help from PHARMAC and MOH on specific needs such as the national workshop.

## **4 Strategy Goals and Objectives**

These goals and objectives build upon the Quality Use of Medicines strategy document outlined in 2003 by PHARMAC and the DHB Hospital Pharmaceutical Advisory Committee. The Safe and Quality Use of Medicines group has modified them to take account of the work over the intervening period and the feedback from the national forum.

The key focus of the Strategy is leadership and co-ordination for the benefit of consumers.

**Aim: To achieve safer, more effective and more appropriate use of medicines so that health outcomes from the use of medicines are improved for the community as a whole**

### **Objectives:**

1. To promote a culture of safety within the health sector and wider community that supports leadership and coordination of safe and quality use of medicine's initiatives within all parts of the health sector
2. To encourage and support more widespread involvement of all DHBs' in "Safe and Quality Use of Medicines" initiatives through the establishment and support of active networks, dissemination of information and ideas, and shared learning and review
3. To maximise outcomes, minimise risks and improve safety associated with medication use by establishing, reviewing and improving practice standards for all aspects of prescribing, dispensing and administration
4. To identify high risk medicines and high risk situations, including those disease states targeted for special input in primary care eg cardiovascular disease, diabetes and asthma. To identify options and advocate for and implement solutions to minimise these risks
5. To improve the effectiveness and consistency of infrastructure such as systems, processes, technology, information systems used by DHBs' in association with medication use
6. To improve health outcomes for patients who are treated in primary care and DHB hospitals acknowledging that the interface between these areas requires particular emphasis
7. To promote a culture of enquiry that fosters audit, monitoring and evaluation, and research into the areas of "Safe and Quality Use of Medicine"
8. To involve and engage consumers about the safe and appropriate use of medicines and to increase consumer awareness in relation to the level of medication errors in New Zealand

## **5 Leadership and National Coordination**

**To promote a culture of safety within the health sector and wider community that supports leadership and coordination of safe and quality use of medicines initiatives within all parts of the health sector.**

The overarching goal of any safe and quality use of medicines strategy should be to create a supportive culture of safety in which improvement and innovation can occur and ultimately improved outcomes for the community as a whole.

The most important behaviours that will enable a culture of safety around medicines are leadership behaviours. Leadership behaviours such as:

**Generating insight – to recognise that safe and quality use of medicines is an important issue which will require a systemic approach, that many current errors are preventable, and that an improvement and innovation oriented approach can lead to improved health outcomes.**

**Providing focus – to recognise that out of the many activities and initiatives which are possible, it will be sensible to prioritise what is attempted and to gain agreement on these priorities for action**

**Mobilising organisations and groups to align their activities behind these priorities and support them (See Appendix 3)**

**Committing to action – investing resources in the form of time, money and commitment to achieve progress and to a continuous cycle of learning and improvement**

At the moment a number of organisations have a responsibility to work on the development of initiatives to promote safe and quality use of medicines. The MOH also has a general policy role which includes the “Improving Quality” strategy but no specific policy work in this area. One of the key recommendations from the national forum was the need for a formal channel of advice from the sector to the Minister of Health.

The Minister and Ministry of Health need to be informed and engaged in the safe and quality use of medicines. The group should produce an annual report and an annual plan to inform the Minister and Ministry of their objectives and outcomes.

Work to identify, prioritise and network existing safe and quality use of medicine initiatives is an important ongoing activity for the group and the sector.

Inevitably the process of networking and co-ordination will throw up issues where it may make sense to pursue national consistency in some areas such as the format of drug charts, the approach to electronic prescribing, and the training of health professionals. Clearly this will depend on the buy-in and participation of a majority of those actively working in this area and the strength of the network between them.

Specific objectives of this goal include:

1. Extend the National SQM Committee to include consumer and primary care perspectives
2. Seek to provide advice and recommendations to the Minister of Health
3. Show leadership to support the development of a culture where safe and quality use of medicine activity can thrive
4. Determine and agree priorities on a regular basis
5. Development of “toolkits” of educational material, reference literature, evaluation instruments, organisation of visits from experts, etc for high priority areas.

## **6 DHB Participation in Medication Safety**

**To encourage and support more widespread involvement of all DHBs' in "Safe and Quality Use of Medicines" initiatives through the establishment and support of active networks, dissemination of information and ideas, and shared learning and review.**

As we have outlined many DHBs are undertaking initiatives around the quality use and safe use of medicines. However in many cases this information is not necessarily shared between DHBs or is known only within specific professional silos.

Any cohesive approach needs to involve a wide multidisciplinary approach with open sharing and exchange of innovative ideas, learning and evaluation.

Specific objectives of this goal include:

1. Develop an active network of people working on safe and quality use of medicines through a variety of communication avenues including meetings, discussion, publications and newsletters
2. Benchmarking and review of existing activities that will help draw attention to areas where activity is less than expected and the reasons for this
3. A functional web site which contains up to date national information on initiatives and people working in this area to allow those proposing new programmes to check if there are similar initiatives already underway that are related or if similar work has already been accomplished. Provide links on this website to other relevant organisations working in these areas to promote the sharing of resources, exchange of ideas and access to information

## **7 Best Practice Prescribing, Dispensing and Administration**

**To maximise outcomes, minimise risks and improve safety associated with medication use by establishing, reviewing and improving practice standards for all aspects of prescribing, dispensing and administration.**

Typically the medication process is seen as the three steps of prescribing, dispensing and administration.

Prescribing errors can be due to many reasons including incomplete knowledge of either the drug, drug - drug interactions, the patient's clinical condition, lack of knowledge of previous adverse reactions or allergies to a particular drug, illegible instructions, calculation errors or confusing the drug name or standard dosage regime. In many cases these errors can be exacerbated by fatigue, stress, crisis and poor communication.

Dispensing errors can occur in similar ways to prescribing errors where there is confusion about the instructions given, compounding errors, similar presentation or packaging of drugs, or similar sounding names. Again the probability of error can be exacerbated by fatigue, stress, crisis or poor checking procedures.

Accurate administration depends on both the prescribing and dispensing steps or it can itself introduce further errors into the process through similar presentation, packaging or similar sounding drugs.

The ideal scenario is a situation where all the professionals involved in medicines therapy work together to integrate the various stages in prescribing, dispensing and administering medicines.

Standards for medication management processes for secondary care are in place in New Zealand and are common in other countries and include standards for the following six areas:

1. medication selection and procurement
2. storage
3. ordering and prescribing
4. preparing and dispensing
5. administration
6. monitoring

Specific objectives of this goal include:

1. Identifying individuals or groups who can provide:
  - Development of clearly articulated and disseminated national guidance for prescribing, dispensing and administration that can be regularly and formally monitored
  - Identify current training programmes around the medication management process and identify areas that are common for all disciplines. Develop a consistent regional or national multidisciplinary training programme for

staff involved in the medication management process at both the undergraduate and postgraduate level

- Delivery of appropriate training for all staff involved in the handling of medication linked to the requirements of the Health Practitioner Competence Assurance Act
2. Clear treatment plans shared with all appropriate professionals involved in the patient's care
  3. Involving patients/consumers and their carers in their medication treatment plans
  4. In the future similar medication management standards should be introduced for primary care
  5. Examine how current professional practice standards and expected competencies are working to support the safe and quality use of medicines and identify any issues
  6. Link any standards related to prescribing, dispensing and administration of medicines that are identified with the current New Zealand Healthcare Standards and accreditation processes

## **8 High Risk Medicines and High Risk Situations**

**To highlight the risks and suggest changes to systems and processes used in primary and secondary care associated with these medicines and situations.**

The group identified six high risk medicines based on their cumulative experience of safety issues with particular medications and the literature on reported medication errors.

These initial six medicines were concentrated potassium injection, warfarin, heparin, insulin, diltiazem and morphine. Further to these six medicines, an additional two have been added, namely intravenous infusions and cytotoxics.

Several high risk areas in which patients are commonly taking medications have also been identified including paediatrics, theatre and the fragile elderly.

In some cases the risk from the way these medicines are either available or used indicated a need for the group to alert the health sector. A standard format and protocol has been developed to provide these alerts.

Where appropriate these alerts have been sent to all CEOs of DHBs and/or CEOs or senior managers of PHOs with an expectation that Pharmacy and Therapeutics Committees, Chief Clinical Advisers, quality staff and primary care practitioners would be informed.

Specific objectives of this goal include:

1. Assess the following high risk medicines – potassium, warfarin, heparin, insulin, diltiazem, morphine, cytotoxics and intravenous infusions, make recommendations to improve the safe and quality use of these medicines and provide alerts or information where appropriate to the health sector
2. For alerts on high risk medicines develop appropriate distribution lists for the alerts, identify individuals responsible for both the dissemination and response to the alerts within a DHB and a time frame for a response to an individual alert
3. Assess the following high risk areas in which patients are commonly taking medications - paediatrics, theatre and the fragile elderly and make recommendations to improve the safe and quality use of these medicines and provide alerts or information where appropriate to the health sector

## **9 Systems, Processes, Technology and Information Systems**

**To improve the effectiveness and consistency of infrastructure such as systems, processes, technology, information systems used by DHBs' in association with medication use.**

There are considerable improvements to be made among all DHBs in the way in which we investigate, use and evaluate systems and technology to improve outcomes. There is a clear need to link with other organisations dealing with similar issues across the sector.

Utilising technology and information technology where appropriate to support the safe prescribing, dispensing and administration of medicines is obviously desirable but there are many issues around the assessment of costs, benefits, and implementation. In general this is a development area in which DHBs can benefit immensely from sharing their experiences with each other so that trials and pilots in one DHB can inform, shorten development curves and save costs in other DHBs. We need to learn from the way we have previously implemented information systems in this country so that we minimise any waste of resources.

There are a number of broad areas of future development that may bring significant benefit.

The electronic medication record (EMR) and electronic prescribing offer considerable hope but are generally still in development mode around the world. There are benefits to linking the EMR with e-prescribing & electronic admission/discharge information from existing patient management systems. However an EMR needs to be fully integrated and viewable by all appropriate health professionals and patients to achieve the most value. Given the costs, it is important that New Zealand approaches this area from a nationally cohesive perspective rather than in an ad-hoc way.

Technology offers a wide variety of possible safety avenues including automated distribution systems, bar coding and recording systems, and smart infusion pumps.

Organised systems and processes have already been introduced in varying fashion in most DHBs. Typically these include the use of guidelines, advisory notices, standing orders, protocols, alerts and other associated information connected to these. The issues raised around these systems typically include: clinical autonomy, accessibility, updating, additional advice, training, assessment of competency, audit and availability of independent health professional and consumer information.

Specific objectives of this goal include:

1. Develop and implement a national medicines chart and other related medicine charts e.g. insulin chart to ensure consistency in prescribing all medicines

2. Work towards a common national electronic medication record which captures a full and accurate medication history including allergies, and alternative and “over the counter” (OTC) therapies ultimately
3. Establish the pharmacy and electronic prescribing systems currently available and in use nationally and develop standards for what is required of such systems in conjunction with other organisations working in this area
4. Ensure there is a nationally cohesive approach to the evaluation and possible implementation of electronic prescribing systems. Such systems need to be integrated with other systems such as electronic medication record and other clinical data systems
5. Work towards all medication being barcoded based on an internationally recognised coding system that would allow tracking of a medication from manufacture, through distribution to actual administration to a patient
6. Explore whether New Zealand should have a national formulary based upon preferred medicines listing and how this should incorporate a national evaluation process for new high cost medicines.
7. Establish the current level of drug information provision and promote the provision of a drug information service that has consistent standards nationally
8. Improve consumer information so that there is more consistent and easily available material (printed and electronic) in both primary and secondary care with a priority on high risk medicines and consumer education on preventing medication mistakes
9. Extend the availability of unbiased and independent drug information services to all health professionals in New Zealand, in particular to primary health care practitioners
10. Promote education on the safe and quality use of medicines
11. Identify areas in the education of health professionals on medication that are deficient and work towards improving these
12. Outline desirable clinical pharmacy service levels for DHBs with guidance and peer benchmarks for pharmacist staffing and the level of DHB services such as beds
13. Work with all DHBs to make the use of infusion pumps, smart pumps and other forms of prepared IV administration more consistent and standardised
14. Work with all DHBs to investigate and make use of automated medicine distribution systems wherever possible

## **10 Primary Care and the Primary-Secondary Interface**

**To improve health outcomes for patients who are treated in primary care and DHB services acknowledging that the interface between these areas requires particular emphasis.**

In primary health care there has been a considerable amount of work in the areas of pharmacy facilitation, drug utilisation review, budget holding for pharmaceuticals, and electronic capture of medication records in general practice patient management systems.

There continue to be a number of areas outstanding that would benefit from further development. In particular there is often a difference between the medication records held by general practice, community pharmacy, the patient (and the hospital) with no obvious way of reconciling this difference through a systems approach. In general there is little if any incident monitoring apart from the national adverse events system which tends to record only the most significant events. There are also still wide variations in drug usage which do not appear to necessarily have any evidence basis for the difference. In a number of areas such as cardiovascular disease as many as 60% of identified people with a high absolute risk of a cardiovascular event (>15% 5 yr risk) may not receive optimum pharmaceutical treatment based on current national guidelines.

The interface between hospital care and primary care is another significant transition point which leads to medication errors. Continuity of pharmaceutical care when patients are admitted to/discharged from hospitals is important. Studies in New Zealand indicate each transition point can generate errors of around 25%.

Hospital initiated prescribing of pharmaceuticals that are not listed on the Pharmaceutical Schedule but which are intended for continued use after discharge is also an area which could be improved.

Specific objectives of this goal include:

### Primary Health Care Objectives

1. Consider whether there should be an medication error incident or sentinel reporting system in primary care
2. Work towards a common electronic medication record needs to include all key stakeholders of primary and community health care

### Community/Hospital Interface Objectives

1. Prepare submissions for consideration by the Ministry of Health and/or its clinical advisors regarding safety issues in relation to those medications currently listed in sections B and H of the Pharmaceutical Schedule
2. Provide input to PHARMAC and Medsafe on safety and quality issues regarding the listing or de-listing and registration of pharmaceuticals
3. Identify barriers to better co-ordination of care at the community/hospital interface
4. Review initiatives that have previously been attempted both within New Zealand and overseas in relation to admission/discharge procedures. Pilot and evaluate similar initiatives
5. Work towards accurate transmission of admission and discharge information across the hospital community interface
6. Work towards a standardised discharge summary format, preferably electronic
7. Explore the use of electronic discharge summaries for health care providers other than general practitioners, including community pharmacists

## **11 Audit, evaluation, monitoring, research**

**To promote a culture of enquiry that fosters clinical audit, monitoring and evaluation, and research into the areas of “Safe and Quality Use of Medicine”.**

There is wide range of existing activity among DHBs, PHOs, other NGOs, universities and tertiary institutions, and the pharmaceutical industry. It is very difficult to easily understand the range and depth of this activity because a significant amount is not formally published in academic journals or in health sector or industry publications.

Specific objectives of this goal include:

1. Ensure regular clinical audit and monitoring and evaluation activity within all DHBs
2. Publication and dissemination of audit, evaluation and monitoring through the network
3. Establishing a national register of Drug Utilisation Review projects
4. Sponsorship and support for local drug utilisation evaluation particularly in smaller centres through networking and collaboration
5. Providing co-ordination and communication of existing and ongoing research nationally through a national database
6. Sponsorship and support for research and evaluation of specific medication error reduction initiatives
7. Provision of toolkits for evaluation of outcomes from SQM activities so that future investment in these initiatives can be justified in quantitative terms
8. Focussed surveys on a regular basis looking at infrastructure development, service levels and sentinel events

## **12 Consumer awareness**

**To involve and engage consumers about the safe and appropriate use of medicines and to increase consumer awareness in relation to the level of medication error in New Zealand.**

Consumers are key partners in undertaking and implementing initiatives to achieve the safe and quality use of medicines. Developing consumer awareness of the issues surrounding the safe and quality use of medicines is an integral part of a quality use of medicines strategy.

Specific objectives of this goal include:

1. Provision of consumer information on the safe use of medicines
2. Encourage patient self management of their condition and medicines

## Glossary of terms

### Medication error

A medication error may be defined as any error that occurs in the medication process. Medication errors often do not result in harm.

### Adverse drug event

An adverse drug event (ADE) may be defined as ‘any injury due to a medication.’ This injury may be due to the wrong dose of a medication (over or under dose), the wrong medication being given, or given to the wrong person, or the medication being given by the wrong route (e.g. intrathecal instead of intravenous).

Adverse Drug Reactions are a subset of ADEs.

### Adverse drug reaction (ADR)

Any response to a drug which is noxious, unintended and occurs at doses normally used for prophylaxis, diagnosis or therapy.” Reference WHO<sup>7</sup>

### Medication/medicine

A product is a medicine if it has a pharmacological effect and it is used in humans primarily for a therapeutic purpose

### Quality use of medicines

The safe, effective and appropriate use of medicines

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<sup>7</sup> Safety of Medicines: A guide to detecting and reporting adverse drug reactions. World Health Organisation; Geneva 2002. Available online. URL:

[http://www.who.int/medicines/library/qsm/who-edm-qsm-2002-2/esd\\_safety.pdf](http://www.who.int/medicines/library/qsm/who-edm-qsm-2002-2/esd_safety.pdf)

## **Appendix 1**

# **Medication Safety and the Quality Use of Medicines Conference**

**6/7 May 2004 in Wellington**

## **Report from Dwayne Crombie - Chair**

### **Quality Use of Medicines Workshops Summary**

**Definition:** *When medicines are the right option, use them wisely and safely"*

1. Learn from the experience of others eg Australia, UK
2. Quality use of medicines (QUM) group/committee to develop from Safe Use of Medicines group to formulate QUM strategy/policy (build on what already exists) and make recommendations to the government and other key stakeholders
3. Use consumers to help drive the political process
4. Demonstrate some useful outcomes to show added value eg patient safety or improved health outcomes
5. Need ministerial endorsement for national framework to proceed
6. National body to lead and co-ordinate QUM in New Zealand with participation from consumers/patients, health professionals, government and industry
7. Investment/funding required whether from government or DHB's but could become self funding from savings in the long term eg Australia

### **Additional points**

- A lot of research and development happening at local level but it is currently uncoordinated and there is no communication network to allow ideas to be shared between DHB's
- National body should enable individuals to develop ideas at a local level and then share the idea nationally
- Sharing of education, training and information between DHB's for both health professionals and consumers would benefit all

- Information technology that allows interface across primary and secondary care and between all health professions based on NHI number needed

### **High Risk Medicines**

Variety of ways a “high risk” medicine can be defined and use of that term alone might not be the best way to communicate a drugs priority level.

In addition to the 6 medicines already targeted consider: amiodarone, intravenous sedation, clozapine, sibutramine, hypnotics, new medicines, emergency medicines and any medicine with a narrow therapeutic index.

### **Proposed solutions to “high risk” medicines:**

- identify the priority risk
- education (both patients and health professionals)
- effective standardised monitoring
- standardised protocols/processes
- look at other issues(eg regulatory affairs)

Any alerts produced need effective monitoring with standardised public alerts, consumer involvement, national protocols and industry involvement.

### **Prescribing**

- Doctor, pharmacist and nurse education needs to involve teaching based on a real chart, real patient, problem solving approach
- Medical education needs to teach the prescribing process
- Education also needs to establish different attitudes in graduates
- Standardised drug charts, protocols and therapies would help
- Consideration should be given to when prescribing is undertaken so that it is done when there is adequate time and access to appropriate information
- Electronic version with automatic updates of PHARMAC Schedule would help with what is currently funded, what needs special authority etc
- Provide education on currently available electronic facilities

### **Information Technology**

- Compatible electronic systems to be available across primary/secondary care with appropriate funding, education and change management input
- Sponsor and maintain a national drug file
- Recording of medication errors to allow a national database

### **Drug Information**

- Need a nationally co-ordinated, independent DI policy/service available to both health professionals and consumers which could be proactive (ie provide new drug information, education etc) rather than just reactive
- Either national or 2 -4 regional providers with local hospital, community or IPA/PHO pharmacists answering usual day to day enquiries
- Consider a national formulary

### **Interface Issues**

- Needs multidisciplinary approach, targets high risk patients because of limited resources
- Computer generated prescriptions and discharge summaries
- Nationally agreed electronic discharge summary
- Patient empowerment
- Multidisciplinary audit committees

### **Dispensing/administration**

- Standardised drug chart with double checking
- Consider dispensing and administration environment eg constant interruptions
- Have information on policies/protocols(some national) available at point of care
- Audit cycle
- Education and training issues
- Use of automated systems eg dispensing/distribution system(Pyxis), robotic dispensing, infusion pump technology

## **Appendix 2**

### **Membership of the DHBNZ Safe and Quality Use of Medicines Group**

Dwayne Crombie, Chair, CEO, Waitemata District Health Board  
Beth Loe, Project Manager, based at Waitemata District Health Board  
Peter Black, Specialist Physician and Clinical Pharmacologist, Auckland District Health Board  
Gillian Bohm, Principal Advisor Quality Improvement & Audit, Ministry of Health  
Marilyn Crawley, Pharmacy Manager, Waitemata District Health Board  
Vicky Culling, Consumer Member  
Grant Howard, Intensivist, Waikato District Health Board  
Avril Lee, Integration Pharmacist, HealthWest PHO/Waitemata District Health Board  
Tim Maling, Clinical Associate Professor in Internal Medicine and Clinical Pharmacology, Capital and Coast District Health Board  
Adam McRae, Demand Side Manager, PHARMAC  
Peter Moodie, Medical Director, PHARMAC, General Practitioner  
Elizabeth Plant, Chief Pharmacist, Taranaki District Health Board  
Mary Seddon, Head of Quality Improvement (Medicine), Counties Manakau District Health Board  
Emil Schmitt, Clinical Charge Nurse/Director Surgical Services, Otago District Health Board  
Jane Vella Brincat, Drug Utilisation Review / Preferred Medicine List Pharmacist, Canterbury District Health Board

## **Appendix 3**

### **Quality Use of Medicine Stakeholders**

# Quality Use of Medicines Stakeholders

