DOHA SUBMISSION TO THE SENATE INQUIRY INTO THE IMPLEMENTATION OF THE RECOMMENDATIONS OF THE 1999 JOINT EXPERT TECHNICAL ADVISORY COMMITTEE ON ANTIMICROBIAL RESISTANCE (JETACAR)

INTRODUCTION

The Department of Health and Ageing is pleased to provide this submission to the Finance and Public Administration References Committee, on behalf of:

- The Commonwealth Department of Health and Ageing (DoHA);
- The Australian Commission on Safety and Quality in Health Care (ACSQHC);
- The Therapeutic Goods Administration (TGA).
- Food Standards Australia New Zealand (FSANZ); and
- The National Health and Medical Research Council (NHMRC).

Responding to the challenges of antimicrobial resistance in Australia has involved a combination of regulation, monitoring and surveillance, targeted activity on specific organisms, research and education. This has been coordinated at various times by established committees such as JETACAR and the history of this engagement as well as details of current activity is outlined in this submission.

The Australian Government recognises that AMR extends across both animal and human health, and that to achieve real progress, the response must take a whole-of-system perspective and be joint, coordinated and workable across agencies. In February 2013, DoHA and the Department of Agriculture, Fisheries and Forestry (DAFF) agreed to establish strengthened governance arrangements for the oversight and coordination of Australia's efforts to prevent and contain antimicrobial resistance (AMR). This group will provide governance at the highest level, with membership consisting of the Secretaries of each Department, as well as the Commonwealth Chief Medical Officer and the Commonwealth Chief Veterinary Officer.

AMR is an important global public health priority. Resistance is increasing faster than the development of new drugs, and current effective medicines for infections cannot keep pace. Some resistant bacterial pathogens that were once primarily the concern of hospitals are now seen with increasing frequency in the community, and patients are arriving in hospitals carrying resistant bacteria acquired in the community setting that produce opportunistic infections that are difficult to treat and impact clinical care. AMR contributes to increased patient morbidity and mortality, the complexity and duration of treatments, and hospital stay and results in substantial increases to health care system costs and financial burden to the community.[1,2]

The World Health Organization (WHO) announced the *Global Strategy for Containment of Antimicrobial Resistance* in 2001 to contain the spread of antimicrobial-resistant bacteria and prevent the emergence of new antimicrobial-resistant bacteria. This strategy called on member countries to implement programs to prevent AMR, including surveillance, education

[1] Frimodt-Moller N, Hammerum AM, Bagger-Skjot L, Hessler JH, Brandt CT, Skov RL, Monnet DL. Global development of resistance--secondary publication. Dan Med Bull. May 2007;54(2):160-162.

[2] Hunter PA, Reeves DS. The current status of surveillance of resistance to antimicrobial agents: report on a meeting. The Journal Of Antimicrobial Chemotherapy. 2002;49(1):17-23.

and policy development. The WHO has also encouraged member countries to extend surveillance programs to neighbouring countries or regions where appropriate. Australia recognises that controlling the AMR impacts on human health requires a cross-sectoral approach, engaging human and animal health, industry and a range of other stakeholders. The Australian Government, like in other countries, is taking steps to address AMR based on identified priorities which are consistent with WHO program priorities.

JETACAR

The Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR) was appointed in April 1998, to review the scientific evidence on the link between the use of antibiotics in food-producing animals, the emergence and selection of antibiotic resistant bacteria and their spread to humans, and to develop evidence-based recommendations for the appropriate future management of antibiotic use in food-producing animals. The JETACAR report *The use of antibiotics in food-producing animals: antibiotic-resistant bacteria in animals and humans* was released in October 1999 and contained 22 recommendations, addressing regulatory controls, monitoring and surveillance, infection prevention strategies and hygienic measures, education, research, communication, and coordination of resistance-management activities.

The Commonwealth Government Response to the Report of the Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR) was published in August 2000 (at Attachment A). A progress report, *Facilitating the Implementation of a National Antimicrobial Resistance Management Program*, was published in March 2003 by the Commonwealth Interdepartmental JETACAR Implementation Group (CIJIG) (at Attachment B).

A timeline of key documents and events related to AMR policy development is at Attachment C. A number of additional AMR related activities not addressed in detail in this submission are listed at Attachment D.

The agencies contributing to this submission have roles spanning each of the areas covered by the JETACAR recommendations, and much has been accomplished in the period since 2000 when the Commonwealth Government released its response to the JETACAR recommendations. This submission provides an overview of further progress since the 2003 progress report, with a number of recommendations having been successfully implemented, and work continues in addressing several other recommendations.

It has now been over a decade since the JETACAR recommendations were first made, and the issue of AMR has continued to evolve as a global health challenge. AMR is, and will continue to be, an important priority for Health and Ageing portfolio agencies, although in some instances priorities for action may no longer directly align with the JETACAR recommendations. This submission highlights current activity in Australia in relation to AMR, and the strong foundation this work provides for future efforts, guided by the new Antimicrobial Resistance Standing Committee (AMRSC), for the prevention, management and containment of AMR.

The submission does not cover the important role that professional associations play in the development of clinical advice, education and training and specific guidance to their own professions to promote the safe and effective use of antibiotics. Implementation of activities to address AMR in Australia is a shared responsibility between Governments, industries,

educators, health and veterinary professionals, and the community. This submission only covers activities taken in relation to human health issues.

Government actions relating to the use, control and regulation of antibiotics for use in animals are outside the scope of this submission although the relationship with DAFF is outlined in relevant sections.

SECTION ONE: ROLES OF AGENCIES

This section of provides some general information about each of the agencies that have provided input to this submission and their role in responding to AMR in Australia.

The Department of Health and Ageing (DoHA)

DoHA's vision is *better health and active ageing for all Australians*. The Department supports a range of activities in relation to AMR, including education on the judicious and effective use of antibiotics (through the National Prescribing Service), surveillance of AMR (through hospital indicators and a number of public health surveillance activities), and the National Medicines Policy, which promotes the appropriate clinical use of antimicrobials.

All other contributors to this submission are Health and Ageing portfolio agencies, as listed below.

Australian Commission on Quality and Safety in Health Care (ACSQHC)

The ACSQHC is a government agency which was established by the Commonwealth in 2006, with the support of state and territory governments.

The Commission leads and coordinates national improvements in safety and quality in health care across Australia. The ACQSHC has a number of programs, publications and resources to support healthcare professionals, healthcare organisations and healthcare policy makers, working with patients and carers, to deliver safe and quality health care across Australia.

Food Standards Australia and New Zealand (FSANZ)

FSANZ operates as an integral part of the food regulation system for Australia and New Zealand and has oversight for the Maximum Residue Limits (MRL) for pesticides in imported foods. FSANZ has a major role in coordinating jurisdictional activities and facilitating common approaches in responding to food incidents that span state borders. It provides risk assessment advice to DAFF where food imports present a medium or high food safety risk.

Therapeutic Goods Administration (TGA)

The TGA is responsible for regulating therapeutic goods including medicines, medical devices, blood and blood products. The TGA administers the *Therapeutic Goods Act 1989*. This legislation provides a framework for a risk management approach that allows the Australian community to have timely access to therapeutic goods which are consistently safe, effective and of high quality.

Any product for which therapeutic claims are made must be listed, registered or included in the Australian Register of Therapeutic Goods (ARTG) before it can be supplied in Australia. The TGA evaluates therapeutic goods before they are marketed and monitors products once they are on the market. It also assesses the suitability of medicines and medical devices for export from Australia.

The TGA works with consumers, health professionals, industry and its international counterparts in order to effectively regulate increasingly complex products resulting from rapid scientific developments.

National Health and Medical Research Council (NHMRC)
The NHMRC is Australia's peak body for supporting health and medical research; for developing health advice for the Australian community, health professionals and governments; and for providing advice on ethical behaviour in health care and in the conduct of health and medical research.

SECTION TWO: KEY ACTIVITIES RESPONDING TO THE JETACAR RECOMMENDATION AREAS
This section provides an outline of key current activities that are relevant to the recommendation areas of the JETACAR report.

1. REGULATORY CONTROLS OF ANTIBIOTICS
(JETACAR recommendations 1-9)

JETACAR supported the use of regulatory controls as a mechanism to adopt a more conservative approach to the use of antibiotics in humans and animals. The regulatory reforms proposed by these recommendations included the introduction of licensing arrangements to monitor and control the importation of antibiotics into Australia, reviewing the scheduling of medicines to ensure that antibiotics for use in humans and animals are classified as S4 (prescription only), and inclusion of microbial resistance safety data as a requirement of the assessment of all new antibiotics by the TGA.

The Australian Government supported and broadly accepted JETACAR recommendations 1-9.

This section outlines the key regulation mechanisms in place for antibiotics in Australia. This includes a discussion on the recent accreditation changes that now require hospitals to have antibiotic stewardship programs in place.

1.1 Importation of antibiotics into Australia
Importation of antibiotic substances is prohibited unless permission has been granted by the Department, in accordance with Regulation 5A of the Customs (Prohibited Imports) Regulations 1956. The Australian Customs and Border Protection Service will seize any shipment of antibiotics if the importer is unable to present a permit issued by the Department. This mechanism potentially allows for the monitoring of antibiotics imported into Australia, however it would not provide information about the end-use of imported antibiotics.

1.2 Antibiotic scheduling
The scheduling of an antibiotic places controls on its supply and use where there is a potential risk to public health and safety. This is governed by the *Therapeutic Goods Act 1989* and associated regulations, through which the Secretary (or delegate), is bound, when making scheduling decisions, by the Scheduling Policy Framework (SPF). The SPF lists the potential for substances to contribute to the development of resistant strains of microorganisms as a factor in the inclusion of the substance in Schedule 4.

The majority of antibiotics are listed as Schedule 4 substances which effectively defines them as prescription only medicines. Scheduling is given legal effect through State and Territory legislation and through this mechanism, only medical practitioners are able to prescribe products containing antibiotics.

Revised arrangements for the classification of medicines and poisons (substances) into the schedules of the Standard for Uniform Scheduling of Medicines and Poisons (the SUSMP) commenced on 1 July 2010. These allow the Secretary of DoHA to make decisions to schedule products by amending the SUSMP. States and territories implement these decisions through the adoption of the SUSMP into their respective legislation.

The scheduling arrangements outline the information required to support an application to schedule new substances or reschedule existing substances. The Secretary may refer an application for further risk assessment if the supporting information is considered insufficient.

1.3 Regulation of new therapeutic products

Any product for which therapeutic claims are made must be listed, registered or included in the Australian Register of Therapeutic Goods (ARTG) before it can be supplied in Australia. The TGA has implemented regulatory requirements both in the premarket evaluation and post market monitoring phases of antibiotic medicine regulation.

Premarket phase of antibiotic medicine regulation

Since 2001, sponsors of antibacterial medicines for human use have been required by the TGA to provide antimicrobial resistance risk assessments in both their initial applications to include antibiotic medicines in the ARTG and applications to extend the use of antibiotic medicines already included in the ARTG.

Between 2001 and 2007, the EAGAR provided advice to the TGA on the resistance risk assessments for antibiotic medicines included in applications submitted to the TGA by pharmaceutical companies. In recent times, the development of new antibiotics has decreased substantially and, in the last 12 years, the following new antibiotic medicines were included in the ARTG:

- 2001 - linezolid tablets/oral suspension/injection;
- 2006 - tigecycline injection;
- 2008 - daptomycin injection; and
- 2009 - doripenem injection.

There were also antibiotic risk assessments submitted with applications to extend the indications of antibiotic medicines already included in the ARTG. Not all of these applications were approved by the TGA.

Information relating to the *in vitro* susceptibility of antibiotic medicines against targeted organisms and the clinical relevance of the susceptibility data is usually included in the Pharmacology section of the Product Information (PI) documents following TGA's evaluation and decision to include the medicine on the ARTG.

Since 2003, for applications to register new antibiotics, the TGA seeks advice from the Advisory Committee for Prescription Medicines (ACPM) with regard to the pre-marketing antibiotics resistance risk assessment.

Postmarket phase of antibiotic medicine regulation
Following the 1999 JETACAR recommendations, the TGA sought advice from the Australian Drug Evaluation Committee (ADEC) in relation to the recommendation of five yearly updating of antibiotic resistance data in the PI for all antibiotics. The ADEC supported the JETACAR recommendations and advised that antibiotics susceptibility information in the PI should be updated every five years as a condition of registration because antibiotics may show rapidly changing patterns of susceptibility and the inclusion of specific Australian susceptibility data, particularly Minimum Inhibitory Concentration (MIC) data, is very desirable as resistance rates may vary between different countries.

Pharmaceutical companies raised concerns and claimed that they would have difficulties in implementing a five-yearly update of their PIs with Australian-specific microbial resistance information as only limited Australian data are available. They argued that to be able to obtain valid susceptibility data, standardised prospective studies would need to be undertaken and such studies would be best undertaken under the auspices or guidance of an independent national body, with opportunity for all relevant pharmaceutical companies to review and comment on the methodologies and resulting data. These matters were not resolved and, consequently, the post-marketing requirement for PI updating each five years with antibiotic resistance information has not yet been effectively implemented.

Since April 2009, Risk Management Plans have been required as part of all new applications to include medicinal products (including antibiotic medicines) on the ARTG and major variations to products already on the ARTG. Under Risk Management Plans, summaries of global bacterial resistance patterns are being routinely included in the Periodic Safety Update Reports (PSURs), which are required to be submitted to the TGA at specified intervals. The TGA has asked sponsors of antibiotic medicines to include protocols to gather post-market Australian-specific antimicrobial resistance information. The TGA will usually seek advice from the Australian Committee on the Safety of Medicines (ACSOM) in relation to post-marketing surveillance programs for monitoring antibiotic resistance.

1.4 Development and implementation of Standard 3 of the NSQHS Standards "Preventing and Controlling Healthcare Associated Infection"
A significant recent development in relation to antimicrobial stewardship in Australia is the ACSQHC's work on the implementation of Standard 3 of the National Safety and Quality Health Service (NSQHS) Standards, "Preventing and Controlling Healthcare Associated Infection".

The NSQHS Standards have been mandated by Health Ministers to be implemented in all public and private hospitals in Australia. Standard 3 ensures the appropriate prescribing of antimicrobials and requires that all healthcare services:

- have an antimicrobial stewardship program in place;
- ensure that the clinical workforce prescribing antimicrobials have access to current endorsed therapeutic guidelines on antibiotic usage;
- monitor antimicrobial usage and resistance; and
- act to improve the effectiveness of antimicrobial stewardship.

These standards will mean that within three years all hospitals in Australia will have in place an antimicrobial stewardship program. Efforts to align antibiotic prescribing practices within hospitals with best practice guidelines is critically important in reducing the overall use of

antibiotics in Australia, as well as targeting more specific application of the correct antibiotic to the specific disease or condition.

The publication - *Antimicrobial Stewardship in Australian Hospitals 2011* provides guidance on developing and introducing a hospital antimicrobial stewardship program. It describes the structure and governance required and the resources needed for an effective program, along with those strategies shown to influence antimicrobial prescribing and appropriate use.

Antimicrobial Stewardship Clinical Care Standard
The ACSQHC recently began developing the Antimicrobial Stewardship Clinical Care Standard. The AMS Clinical Care Standards aims to improve the appropriateness of clinical care by:

- Reducing clinical variation
- Increasing efficiency
- Improving outcomes across the clinical and patient experience spectrum.

The Standard, to be developed during 2013, will deliver a small number of quality statements and measures that describe the key clinical care that a patient should be offered for a specific clinical condition or defined part of a clinical pathway, potential national indicators and implementation and decision support tools.

1.5 National Medicines Policy
The quality use of medicines is central to Australia's National Medicines Policy (NMP). Antimicrobials are only available following prescription from a medical practitioner. This ensures appropriate clinical use of antimicrobials and therefore helps to manage antimicrobial resistance.

The objectives of the NMP were articulated in the National Medicines Policy (2000) document and are:

- timely access to the medicines that Australians need, at a cost individuals and the community can afford;
- medicines meeting appropriate standards of quality, safety and efficacy;
- quality use of medicines; and
- maintaining a responsible and viable medicines industry.

The Government has also utilised the Pharmaceutical Benefits Scheme (PBS) as a mechanism to ensure that the approvals for antibiotics subsidised under this scheme encourage judicious and appropriate use. Antibiotics are listed on the PBS based on recommendations by the Pharmaceutical Benefits Advisory Committee (PBAC). While access to some older antibiotics is unrestricted, access to most new antibiotics is restricted to a small number of indications to encourage the rational use of antibiotics.[3]

[3] For example, common broad-spectrum antibiotics like cephalexin and amoxicillin can be obtained on a prescriber's script for mild-moderate chest infections without the need for the prescriber to seek an 'Authority' or provide evidence of the type of infecting organism. Prescribing of later-generation antibiotics like ciprofloxacin requires an 'Authority' to be obtained where the prescriber must obtain approval before prescribing and state the type of bacterium that has been proven to have caused the infection. Antibiotics that are Unrestricted or Restricted (but need no Authority approval) outnumber those that require an Authority, so as to limit the development of bacterial resistance.

1.6 Initiatives in general practice

The Government strongly encourages general practices to achieve accreditation against the RACGP Standards for general practices. The Standards provide a template for quality care and risk management in Australian general practice, and include a requirement that practices have systems in place that minimise the risk of healthcare associated infections.

Accreditation is also an entry requirement for participation in the Practice Incentives Program (PIP). The PIP is aimed at supporting general practice activities that encourage continuing improvements, quality care, enhance capacity, and improve access and health outcomes for patients.

The PIP Quality Prescribing Incentive (QPI) aims to encourage practices to keep up to date with information on the quality use of medicines. The PIP QPI rewards participation by practices in a range of activities recognised or provided by the National Prescribing Service (NPS).

2. MONITORING AND SURVEILLANCE

(JETACAR recommendations 10 and 11)

JETACAR recommended that a comprehensive surveillance system be established incorporating passive and active components measuring incidence and prevalence of antibiotic-resistant bacteria and resistance genes, covering all areas of antibiotic use, as well as a comprehensive monitoring and audit system for antibiotic usage.

The government response supported the overall concept of improving surveillance of antibiotic-resistant bacteria and resistance genes, whilst noting the importance of further investigations to determine the most appropriate and cost-effective option for national integration of animal and human surveillance data.

The role of surveillance in combating and managing AMR is recognised as an important component of the World Health Organisation's *Global Strategy for Containment of Antimicrobial Resistance* (2001). Appropriate surveillance provides vital information for the targeting of interventions, and measures success or failure of these interventions. Surveillance enables early detection and intervention, and can therefore reduce the extent and severity of outbreaks.

Currently in Australia there are several ways in which we conduct monitoring and surveillance which are relevant to AMR. This section outlines these and includes relevant activities.

2.1 National Monitoring and Surveillance

This section covers the national structures for monitoring and surveillance in public health and hospitals, as well as identifying more specific activities directed to AMR.

2.1.1 AHPPC and Subcommittees

The Commonwealth, States and Territories work together on public health surveillance through the Australian Health Protection Principal Committee and its sub-committees. State data on listed notifiable diseases is consolidated nationally and considered on a fortnightly basis by the Communicable Disease Network Australia (CDNA). This allows for the early identification of outbreaks, the sharing of information on unusual disease presentations and collaboration on

emerging issues. This network includes cross membership with DAFF and OzFoodNet to allow consideration of relevant animal health and foodborne illness issues.

The Antimicrobial Resistance Standing Committee (AMRSC) was established under the AHPPC on 19 April 2012. The role of the AMRSC is to advise the AHPPC on matters relating to AMR; provide expert advice and assistance on issues relating to AMR; and recommend national priorities relating to AMR for action.

The AMRSC is finalising a review of surveillance activity currently undertaken in Australia, to inform the development of a nationally coordinated approach to surveillance and reporting on AMR and antibiotic use in Australia.

The AMRSC is discussed further under Section 8.

2.1.2 Australian Group on Antimicrobial Resistance (AGAR)

AGAR is administered by the Australian Society for Antimicrobials (ASA). AGAR commenced in 1985 and is a nationally representative targeted AMR surveillance program operating across Australia.

AGAR collects, analyses and reports on trends in the level of antimicrobial resistance (AMR) in bacteria causing important and life threatening infections in humans with onset in both the community and hospital settings.

The three current surveillance programs are:

- Australian Staphylococcal Sepsis Outcomes Program.
- Australian Enterococcal Sepsis Outcomes Program.
- Australian Enterobacterial Sepsis Outcomes Program.

Further information on these programs is provided in Table 1, below.

AGAR data may be used to:

- Inform AMR organism control programs at the state and national level;
- Benchmark and prioritise AMR management interventions at the hospital level;
- Inform national treatment recommendations;
- Inform local antibiotic stewardship programs.

Under a new approach to surveillance which commenced from 1 January 2013, the AGAR program now aligns more closely with the European Antimicrobial Resistance Surveillance Network "EARS-NET". This will enable the Australian programs to be benchmarked against a major antimicrobial resistance surveillance program and allow Australian AMR rates to be compared to other countries.

AGAR provides annual detailed surveillance reports on the three sentinel pathogen groups, including demographics, specimen source and susceptibility testing results, to DOHA's Office of Health Protection. AGAR data are published from time to time in the Communicable Diseases Intelligence (CDI) journal (www.health.gov.au), and reports are also published on the AGAR website (www.agargroup.org/).

Table 1: Current AMR surveillance programs undertaken by AGAR

Program	Targeted species	Objectives
Australian Staphylococcal Sepsis Outcomes Program	*Staphylococcus aureus*	• Determine the antimicrobial resistance rates and resistant phenotypes of *S. aureus* sepsis. • Provide detailed analysis of methicillin, vancomycin and teicoplanin resistant phenotypes. • Monitor the emergence and spread of PVL positive and negative *S. aureus* clones in Australia.
Australian Enterococcal Sepsis Outcomes Program	any species of Enterococcus, including but not confined to: *E. faecalis* *E. faecium* *E. gallinarum* *E. casseliflavus* *E. avium* *E. durans* *E. hirae* *E. raffinosis*	• Provide detailed analysis of glycopeptide, high level gentamicin/streptomycin resistance resistant phenotypes and β-lactamase producers. • Determine the antimicrobial resistance rates and resistant phenotypes of enterococcal sepsis. • Monitor the emergence and spread of vancomycin-resistant enterococcal clones in Australia. • Molecular classification of *van* genes
Australian Enterobacterial Sepsis Outcomes Program	any species of the family Enterobacteriaceae, including but not confined to: *Escherichia spp.* *Salmonella spp. except S. Typhi* *Klebsiella spp.* *Enterobacter spp.* *Citrobacter spp.* *Serratia spp.* *Proteus spp.* *Providencia spp.* *Morganella spp.* *Yersinia spp.* *Hafnia alvei* *Kluyvera spp.* *Pantoea spp.*	• Determine the antimicrobial resistance rates and resistant phenotypes of Enterobacteriaceae sepsis. • Provide detailed analysis of carbapenem, fluoroquinolone, 3rd or 4th generation cephalosporin resistant phenotypes and ESBL/AmpC producers. • Determine the percentage of *Enterobacteriaceae* blood stream infections caused by ESBL plasmid borne AmpC and carbapenemase producers. • Undertake molecular characterisation of ESBL, plasmid-borne AmpC and carbapenemases producers.

2.1.3 National Antimicrobial Utilisation Surveillance Program (NAUSP)
NAUSP commenced in July 2004 and collects, analyses and reports on trends in antimicrobial utilisation in Australian hospitals over time at individual hospital and national levels. NAUSP is modelled on the South Australian antimicrobial utilisation surveillance program that was established in 2001. Contributing hospitals are involved in NAUSP on a voluntary basis. Contributing hospitals provide data from hospital pharmacy dispensing records. Since 2008, all states and territories have been represented in the program with at least one hospital from each jurisdiction participating. NAUSP has been funded by the Australian Government since its commencement in 2004. South Australia Health co-funds the program.

NAUSP provides bimonthly reports to contributing hospitals containing longitudinal data of usage rates for six classes of antibiotic, and individual agents within those classes, where emergence of resistance is of particular concern. The data produced by NAUSP may be used by contributing hospitals to support the development of strategies to minimise AMR and to monitor prescribing practices. These bimonthly reports enable examination of antimicrobial usage rates and identification of antimicrobial usage targets for hospital-based intervention programs designed to impact on the incidence of infections involving resistant organisms associated with patient morbidity, and increased healthcare costs.

Annual reports are also generated, providing detailed usage of a wider range of antibiotic classes. A comparator rate, the average use of all contributors, is provided in each report. This allows contributors to assess their usage trends in light of local hospital case-mix characteristics.

The program lays the groundwork for the establishment of a comprehensive national surveillance program for hospital antimicrobial use. While the current primary focus of the NAUSP is on antibiotic use in principal referral centres, a growing number of Large Major City and Medium hospitals have been included in recent years due to demand. As more hospitals seek to comply with Standard 3.14 of the National Safety and Quality Health Service Standards, the number of requests for inclusion in the NAUSP is ever increasing.

2.2 Monitoring antibiotic usage
DoHA supports an initiative to collect data on community dispensed prescriptions, through the Drug Utilisation Sub-Committee (DUSC) of the Pharmaceutical Benefits Advisory Committee (PBAC). The DUSC database contains PBS and RPBS subsidised prescriptions, as well as an estimate of PBS and RPBS unsubsidised (i.e. under co-payment) and private prescriptions. The estimate under co-payment and private prescriptions are based on a sample of pharmacies.

As of 1 April 2012, data is now collected for all under co-payment PBS prescriptions by the Department of Human Services (Medicare), so there is no longer a need to estimate this use based on a sample of pharmacies. As many antibiotics are under the general patient co-payment, the accuracy of the dataset is improving. It should be noted that the DUSC database does not include prescriptions for hospital inpatients, some outpatient prescribing, and the private prescription estimate ceased from 1 August 2012. This data is publicly available through DUSC's annual publication Australian Statistics on Medicines.

2.3 Hospital level reporting
Hospital reporting on key indicators was agreed nationally and is reported on annually. The National Health Performance Authority (Performance Authority) is an independent body established by the National Health Reform Act 2011 (the Act) under the National Health Reform

Agreement (NHRA) to provide locally relevant and nationally consistent information on the performance of healthcare organisations and health systems. The NHRA and the Act require the Performance Authority to report publicly on hospitals (both public and private), Local Hospital Networks (LHN), and Medicare Locals (ML), to improve accountability, transparency and local responsiveness.

The Performance Authority's reports are delivered in line with the Performance and Accountability Framework (PAF). The PAF was agreed by COAG in August 2011 and is available on the Performance Authority's website at: www.nhpa.gov.au. The PAF contains measures of safety and quality, access and efficiency, and financial performance, and includes 48 indicators:

- 31 for healthy communities reports
- 17 for hospital performance reports.

The next Hospital Performance Report is due to be released late in the first quarter of 2013 and will focus on risk-adjusted Staphylococcus aureus bacteraemia (SAB) infection rates for 2010-11 and 2011-12.

Data on hospital acquired infections is collected by states and territories under their infection surveillance regimes. This data has been provided to the Australian Institute of Health and Welfare (AIHW) for some years for use in national reports on health system performance such as the Report on Government Services and the COAG Reform Council Report on National Healthcare Agreement Performance Indicators. This provides a report on the performance of the states and territories, rather than on individual hospitals.

In 2011, the AIHW started reporting surveillance data on SAB on the MyHospitals website, showing the results for individual hospitals. The NHPA will extend this hospital-level reporting of SAB in their next Hospital Performance Report. The current data collections do not cover *C. difficile* and further development will be required before the NHPA can report on *C. difficile* at the hospital level.

2.4 ACSQHC activities

The ACSQHC currently manages a number of activities to further expand and support improvements to the quality of AMR monitoring and surveillance data in Australia. These initiatives are described below:

National Cumulative Antibiogram

The ACSQHC is developing a standard, hospital-level cumulative antibiogram for local surveillance of antimicrobial resistance. Standardisation of both the clinical and technical elements of cumulative antibiograms will optimise prescribing and support antimicrobial stewardship. In addition, a standard cumulative antibiogram will enable national surveillance, mapping and monitoring of antimicrobial resistance, subject to development of data governance arrangements and a reporting infrastructure.

Standardisation of laboratory reporting

The ACSQHC has developed the core information components for reporting on *Staphylococcus aureus* bacteraemia, *Clostridium difficile* infection, surgical site infection, and central line associated bloodstream infections as a best practice health information standard for structured microbiology requests and reports.

The core information components define the set of data elements recommended for transfer of requests and results reports between pathology laboratories and healthcare organisations when a healthcare associated infection is suspected. Use of the core information components should improve the consistency, completeness and timeliness of pathology reports for clinicians and infection control professionals involved in the treatment and surveillance of healthcare associated infection.

Second National Survey of Clostridium Difficile Infection (CDI)
In December 2008 Australian Health Ministers endorsed a recommendation that all hospitals monitor and report CDI through their relevant jurisdiction into a national data collection.

Following detection of the first hypervirulent strain of *C. difficile* within Australia in 2009 and the identification of additional cases in 2010, the ACSQHC sponsored a national laboratory based snapshot of *C. difficile* during September/November 2010. The aim of the initial survey was to determine the molecular epidemiology of *C. difficile* in Australia and to determine the frequency of strains that are likely to cause severe disease. All jurisdictions excluding Victoria participated in the survey as Victoria had already undertaken a state-wide survey.

The ACSQHC is now undertaking a second national survey of *C. difficile*. The epidemiological data will provide information on:

- relationship with a recent admission to a healthcare facility; or
- relationship with a residential care facility.

The information from the survey will be used to establish whether the increase in CDI cases is occurring in healthcare facilities, transmission within hospitals or residential care facilities, or from the community, or occurring across the board.

Central line Associated Bloodstream Infection Prevention Project
The ACSQHC is partnering with the Australian and New Zealand Intensive Care Society (ANZICS) in a national initiative to reduce the incidence of central line associated bloodstream infection (CLABSI) in intensive care units (ICUs).

The ANZICS CLABSI monitoring system is intended to optimise existing jurisdictional surveillance, by providing a broader range of reports; it is intended to complement existing jurisdictional processes, not replace them. It enables audited individual ICU CLABSI case counts to be forwarded to a secure data repository. This will enable confidential monitoring and benchmarking. Jurisdictions and private hospital ownership groups will authorise individuals at department, head office or hospital level to submit the data.

2.5 Specific disease based systems and responses
In addition to national systems there are also investments into specific areas of concern. The network below is one example of this sort of investment.

National Neisseria Network (NNN)
The NNN is a group of laboratories from all jurisdictions participating in the Australian Meningococcal Surveillance Program (AMSP) and the Australian Gonococcal Surveillance Program (AGSP). The NNN routinely reported AMR data, including resistance patterns in gonorrheae and meningococcal disease isolates to DoHA. The NNN has been funded by DoHA since 1996. Current reporting practices of the network include quarterly and annual publication

of gonococcal and meningococcal surveillance data in Communicable Disease Intelligence. Both annual reports and the gonococcal quarterly reports include antibiotic susceptibility profiling.

3. INFECTION PREVENTION STRATEGIES AND HYGIENIC MEASURES

(JETACAR recommendations 12-14)

Recommendation 12 aimed to reduce the contamination of food products with foodborne organisms including antibiotic-resistant organisms through the implementation of 'hazard analysis critical control points' (HACCP).

JETACAR also recommended that the Government examine surveillance activities for hospital acquired infections and develop a comprehensive and standardised national system for hospital-acquired infections.

The Government response broadly supported these recommendations.

FSANZ is the lead agency for the Government's response to address the potential risk of food to be contaminated with antibiotic-resistant organisms.

The Government has funded a range of measures, including the development of national infection control guidelines and programs to specifically monitor healthcare-acquired infections.

3.1 Food Standards Australia New Zealand (FSANZ)

FSANZ is a bi-national Government agency which develops and administers the Australia New Zealand Food Standards Code. The Code regulates the use of ingredients, processing aids, colourings, additives, vitamins and minerals. The code also covers the composition of some foods e.g. dairy, meat and beverages as well as standards developed by new technologies such as genetically modified foods. In Australia, compliance with the Code for all foods is monitored by authorities in the states and territories.

FSANZ operates as an integral part of the food regulation system for Australia and New Zealand. FSANZ has a major role in coordinating jurisdictional activities and facilitating common approaches in responding to food incidents that span state borders. It provides risk assessment advice to DAFF where food imports present a medium or high food safety risk. FSANZ also has oversight for the Maximum Residue Limits (MRL) for pesticides in imported foods.

The *Food Regulation Agreement* was made between the States, Territories and Commonwealth of Australia on 3 July 2008, and aims to provide safe food controls for the purpose of protecting public health and safety. Signatories to the *Agreement* have introduced measures to improve the management of bacteria in food producing animals, addressing JETACAR Recommendation 12. This has been achieved through the introduction in the Food Standards Code (the Code) of primary production and processing and food safety standards.

The Code also addresses food safety practices specifying handling and hygiene requirements to be satisfied at each step of the food handling process. These hygiene standards provide the processing and retail sectors with a clear statement about their obligations in ensuring the safety of their product.

The primary production and processing standards and food hygiene standards provide a national "whole of chain" approach to food safety management ensuring responsibility for food safety is shared between producer and processor and corrective actions, when necessary, are applied at the appropriate point in the supply chain.

FSANZ has also undertaken some surveillance of the use of antibiotics in food, through inclusion of some veterinary drugs in the Australian Total Diet Survey (ATDS), for the purposes of analysing residues of antibiotics. For example, for the 20th ATDS, a range of meats, dairy products, eggs, offal meat and infant formula were tested for antibiotics (penicillin, streptomycin and oxytetracycline), with no detections in any foods tested. Further surveillance and testing of antibiotics is currently being planned for the 25th ATDS, with the results of these analyses expected to be available in 2014-2015.

In regulating the residues of antibiotics that may be present in food, FSANZ works closely with the Australian Pesticides and Veterinary Medicines Authority (APVMA) to permit MRLs for agricultural and veterinary chemicals in the Code. The MRL antibiotic permissions are largely for the use of antibiotics in food-producing animals and occasionally for use to control pests for horticultural products (e.g. to control fruit fly infestations). FSANZ takes the advice of APVMA's assessment on the appropriate use and safety of these antibiotics. The APVMA, in turn, takes the advice of its own internal expertise in veterinary medicine, and the Office of Chemical Safety in DoHA in relation to the microbial safety and chemical toxicity of the antibiotics for use in animals. APVMA then evaluates the potential of such uses to compromise human therapeutics (e.g. lead to the development of AMR.

Occasionally, FSANZ receives an application for the use of substances as food additives that have some antimicrobial action, such as Nisin and Natamycin. In relation to the implications for the use of such products as food additives in food and the potential to compromise human therapeutics, FSANZ has previously sought the advice of the EAGAR. FSANZ will continue to seek expert advice on AMR as appropriate.

3.2 Australian Guidelines for the Prevention and Control of Infection in Healthcare

In October 2010 the NHMRC released *the Australian Guidelines for the Prevention and Control of Infection in Healthcare* to establish a nationally accepted approach to infection prevention and control. The guidelines provide an evidence base on which healthcare workers and healthcare facilities can develop detailed protocols and processes for infection prevention and control that are appropriate for their specific situation. The underpinning risk-management framework ensures the basic principles of infection prevention and control can be applied to a wide range of healthcare settings, including primary care and rural and remote centres.

Following the release of the *Guidelines*, and a subsequent national series of implementation workshops, ACSQHC was approached by infection prevention and control consultants from several jurisdictions to look at revising the available signs relating to standard and transmission based precautions. In 2011 the Commission worked with jurisdictions to produce a series of signs for standard and transmission based precautions that can be used by all healthcare facilities.

The *Building Clinician Capacity Initiative* has been designed by the ACSQHC to close any skill or knowledge-based gaps by providing educational packages/toolkits for Infection Control Practitioners. As part of this work, a series of education modules have been developed to assist

staff who undertake infection prevention as part of a clinical role, as well as for those who work in private or small hospitals. The online interactive education modules are based on the content of *the Australian Guidelines for the Prevention and Control in Healthcare 2010*, and are anticipated to assist in identifying risk management strategies to reduce healthcare associated infections.

Clinical guidelines

The Antibiotic Expert Group of Therapeutic Guidelines Limited (TGL) produces the Therapeutic guidelines: antibiotic (version 14 published 2010). TGL is an independent not-for-profit organisation which aims to promote the quality use of medicines through the writing, publication and sale of Therapeutic Guidelines.

Therapeutic Guidelines are written principally for prescribers to provide them with clear, practical, succinct and up-to-date therapeutic information for a range of diseases. They are based on the latest international literature, interpreted by some of Australia's most eminent and respected experts, with input from an extensive network of general practitioners and other users. Therapeutic Guidelines represent the essence of current available evidence.

Therapeutic Guidelines are widely respected and are an accepted part of the Australian medical culture. They are used in all Australian medical and pharmacy schools, and are used extensively in public teaching hospitals and in community medical and pharmacy practices.

3.3 Monitoring healthcare associated infections

As part of the implementation of the Government's response to JETACAR recommendation 14, The National Surveillance of Healthcare Associated Infection in Australia study was conducted to inform future national planning and inform public health action to alleviate the problem of antibiotic resistance. The report was provided to the then Australian Council for Safety and Quality in Healthcare for consideration and action. The Council convened a workshop of stakeholders (in 2002) which identified five national priority areas with associated national strategies. This resulted in A National Strategy to Address Health Care Associated Infections. The nine recommendations from this publication highlighted the need to improve patient safety and reduce HCAI though a nationally coordinated approach. The recommendations centred on national leadership, national infection control guidelines, surveillance definitions and minimum data set, local governance, education and consumer involvement. The recommendations were endorsed by all Health Ministers in July 2003.

The Health Care Associated Infections Advisory Committee was established by the former Council in November 2003 to progress the National Strategy to Address Health Care Associated Infections and to develop a work plan. This committee established a National Surveillance Working party to look at common definitions. In March 2004, the Australian Council for Safety and Quality in Health Care's Health Care Associated Infections Advisory Committee (HCAIAC) and Surveillance Working Party reached in principle agreement to the publication of a standard set of definitions for facilities to apply for local monitoring of specific HCAIs. The proposed definitions were for surgical site infections (SSIs), bloodstream infections (BSIs) and multi-resistant organisms (MROs).

The HCAIAC reported to AHMC in July 2004 that:

- A National Snapshot is being developed that draws together all work currently being undertaken in the jurisdictions on HCAI.
- The release and promotion of the Communicable Disease Network of Australian's Infection Control Guidelines and development of operational templates to accompany these.
- Resource for consumer education to be developed.

The HCAIAC subsequently developed operational templates and surveillance definitions from the original document from the National Advisory Board of the Australian Infection Control Association, which provided some consistency in the surveillance data being collected by states and/or institutions. The HCAIC was disbanded with the establishment of the new Commission on Safety and Quality in Health Care.

4. EDUCATION

(JETACAR recommendations 15-17)

These recommendations urged the development of prudent use codes of practice for antibiotics; regularly updated 'antibiotic use guidelines'; and continuing educational programs on AMR.

The Australian Government supported these recommendations.

The Government continues to fund important education programs, such as the work of the National Prescribing Service (NPS), to assist and support healthcare professionals to make appropriate prescribing decisions and promote the judicious use of medicines.

4.1 National Prescribing Service (NPS)

The NPS was established in 1998 as an organisation independent of Government and industry, to provide medicines information and resources for health practitioners and consumers in improving quality use of medicines. The NPS plays a key role in the provision of continuing professional development (CPD) for health professionals in Australia, supporting them to make appropriate prescribing decisions and to promote the quality use of medicines.

NPS awareness campaigns are targeted, incorporate evidence-based messages and have shown high levels of interest by both consumers and health professionals. The Australian Government continues to actively support its strong track record in facilitating the implementation of quality use of medicines programs.

The NPS recognises that antibiotic resistance is an important issue in Australia that requires attention. The NPS is conducting an enhanced antibiotic resistance campaign to incorporate a high level of mass media activity, with continuing public messaging in future years. The campaign covers television, radio, web and outdoor advertising. It also supports Antibiotic Awareness Week, a global health initiative to reduce the spread of antibiotic-resistant bacteria.

A selection of NPS activities and programs are noted below:

- *NPS News* -This publication covers a range of topics including antibiotic awareness and resistance, is published every two months and sent to 52,000 health professionals.

- *Academic detailing on targeted therapeutic programs* -NPS Medicine Wise is currently delivering programs to health professionals such as osteoporosis, antipsychotics, antibiotics, depression and headaches. The NPS provides useful tools and information about antimicrobial resistance and appropriate antibiotic use through NPS Medicine Wise.

- *Rational Assessment of Drugs and Research (RADAR)* -An independent, evidence-based assessment of new drugs, including new PBS listings to assist prescribing by health professionals.

- *Australian Prescriber* -An independent journal publication providing information about drugs and therapeutics. It is published six times a year, with each issue distributed to over 51,000 health professionals and students nationally.

- *Quality use of diagnostics* -Promote evidence based requests for diagnostic imaging and pathology services.

- *Medicine awareness campaigns, such as generics awareness* -To encourage consumers to make informed choices with their medicines.

- *Medicines Line* -Telephone service providing independent, evidence-based and timely medicines information to consumers.

- *Resources for consumers* -A variety of online and written resources to improve consumer awareness, such as fact sheets, flyers, brochures, self-monitoring card, medicine list.

- *Medicines List iPhone application* -Allows user to store, email, print and share list of medicines and schedule reminders.

- *Seniors peer education* -A peer education program to empower seniors with knowledge, skills and attitudes to be active participants in their medication management.

- *Aboriginal and Torres Strait Islander peoples initiatives* -Includes train-the-trainer program, outreach pharmacists in remote areas program, open access education workshops for all Aboriginal health workers.

- *Culturally and linguistically diverse (CALD) population programs* -Increase QUM awareness and knowledge among CALD communities.

It is noted that the work of the NPS also contributes significantly to addressing JETACAR recommendations 19 and 20 regarding communication and public awareness about AMR.

5. FURTHER RESEARCH

(JETACAR recommendation 18)

JETACAR recommended that all relevant research funding agencies give priority to research into AMR.

The Australian Government recognises the important role that ongoing investments in research plays in better understanding and managing the emergence and impact of AMR.

NHMRC investment in research relating to AMR has increased dramatically over the last ten years. In 2002 NHMRC invested $1.0 million in AMR research across 13 grants. By 2012, this amount had grown nine-fold to $9.7 million across 65 grants (forecast expenditure).

NHMRC grants are awarded on the basis of competitive peer review and are primarily for researcher-initiated projects rather than for targeted research.

NHMRC's Strategic Plan (2010-2012) identified *Planning for emerging infectious disease threats* (including AMR) as a strategic research priority. NHMRC will continue to fund high quality research in AMR into the future, with the Strategic Plan (2013-2015) identifying *New and emerging health threats – infectious diseases* (including AMR), environmental hazards, changes in human environment as a strategic priority for the organisation over the next three years.

In 2012, NHMRC launched the Research Translation Faculty, a major strategic initiative for health and medical research translation in Australia. The Faculty is represented by over 2,500 members made up of NHMRC-supported Chief Investigators and NHMRC Fellows. The Faculty has been established as a key advisory forum to directly help NHMRC confront key challenges for the translation of health and medical research in Australia. This initiative will support more effective and accelerated translation of health and medical research into improved policy and practice in Australia. It will draw on the significant pool of scientific knowledge of its members and the experience they hold in positions in health policy and practice. AMR is one of the health issues that will be considered for action by the Faculty during the current NHMRC triennium, 2013-2015.

6. COMMUNICATION

(JETACAR recommendations 19 and 20)

Recommendations 19 and 20 of the JETACAR report called for the development of an ongoing education strategy to provide appropriately targeted information on AMR to relevant professional bodies, stakeholders and the general public.

The Government supported these recommendations.

The Government continues to fund and support a range educational initiatives and awareness campaigns to ensure that health professionals, industry and the community are well informed about the quality use of antibiotics, and the risks and dangers associated with inappropriate or overuse of antibiotics.

6.1 Antibiotic Awareness Week

Antibiotic Awareness Week is a global initiative that aims to raise awareness of the importance of appropriate use of antibiotics in our hospitals and the community. In 2012 events and activities in Australia were be coordinated in a national way. The ACSQHC worked with representatives from NPS MedicineWise and states and territories to undertake planning for Antibiotic Awareness Week and promote activities nationally.

6.2 National Hand Hygiene Campaign

Austin Health was first contracted by the ACSQHC in March 2008 to deliver the Hand Hygiene Initiative. In 2011 the National Hygiene Initiative was awarded a World Health Organization (WHO) "Centre of Excellence Award", one of only four sites worldwide to receive such an honour.

In 2012, 569 hospitals contributed data to the national initiative, comprising over 90% of public hospitals and over 50% of private hospitals. Since data was first collected in 2009, the national compliance rate for hand hygiene has risen from 64% to 73% in 2012.

In 2013 and into the future the National Hand Hygiene Initiative will focus on 5 key roles that are more efficiently undertaken centrally and cannot be readily implemented by the jurisdictions:

- National hand hygiene data standardisation and validity
- National hand hygiene database, analysis and efficiency
- National hand hygiene education resources and credentialing
- Private sector hand hygiene support and coordination
- Research and development.

7. COORDINATION OF THE RESISTANCE-MANAGEMENT PROGRAM

(JETACAR recommendations 21 and 22)

These JETACAR recommendations noted the importance of establishing strong administrative and governance arrangements to ensure a fully coordinated response to AMR in Australia across government portfolios and industry.

The Government broadly supported these recommendations.

Subsequent to the Government response to JETACAR the following expert and coordination committees were established:

7.1 CIJIG and EAGAR

The Commonwealth Interdepartmental JETACAR Implementation Group (CIJIG) was established in November 2000. Its primary responsibility was to oversee and coordinate the implementation of the Government's response to the JETACAR recommendations. The CIJIG was jointly chaired by Professor John Mathews (DoHA) and Dr Angelo Valois (DAFF).

EAGAR was constituted in April 2001 to provide independent scientific and policy advice on AMR issues. EAGAR was chaired by Professor John Turnidge and its Terms of Reference, membership, operation and budget were based on the recommendations of JETACAR. EAGAR reported through the CIJIG, and was administered by NHMRC. At this time NHMRC was part of the Department of Health and Ageing.

EAGAR's role included developing and advising on risk assessments for new antibiotics and extensions of indications for previously registered antibiotics for a number of Commonwealth regulatory agencies and advisory committees, including the TGA, FSANZ, APVMA and PBAC. An important achievement for EAGAR was the development of a Framework on Risk Assessment with Respect to applications referred to it by the APVMA.

EAGAR conducted a workshop involving interested researchers in October 2002 where priorities for antimicrobial research were identified in the areas of epidemiology, human health impacts and interventions needed to limit the emergence and spread of AMR. The workshop report was made available on the NHMRC website and the priorities were communicated to the Research and Development Corporations and other relevant research funding agencies.

In 2003 (updated in 2006) EAGAR developed and published a document titled *Importance Rating and Summary of Antibiotic Uses in Humans in Australia*. This document provided advice to Australian governments and their agencies on risk minimisation strategies for controlling antibiotic resistance, including a ratings table which assessed the impact of resistance developing to clinically important antibiotics.

During 2003-04 NHMRC commissioned an independent review of EAGAR, as recommended by JETACAR (Recommendation 21 included that *the operations of the WPA or its successor be subject to a five-year independent review program*). As a result of the review, EAGAR's Terms of Reference were revised and changes were made to its operational procedures, governance arrangements and membership. In particular, EAGAR ceased to undertake risk assessments or to make regulatory recommendations on behalf of regulatory agencies but continued to provide advice on risk assessment developed by those agencies.

NHMRC became a statutory agency within the health and ageing portfolio on 1 July 2006. EAGAR's term expired on 31 December 2007 and was not re-appointed because the committee's role (and Terms of Reference) was no longer consistent with NHMRC's legislative requirements as a statutory agency.

In 2008 NHMRC established an Expert Panel on Health Advice (the Expert Panel). The Expert Panel included four experts on antimicrobial resistance who could be called upon to provide advice on an 'as needs' basis. The Expert Panel's term expired on 30 June 2009.

In 2010 NHMRC established the Antimicrobial Resistance Advisory Committee (AMRAC). AMRAC's Terms of Reference were, upon request, to provide advice to the CEO of NHMRC on issues relating to antimicrobial resistance. AMRAC's term expired on 30 June 2012.

SECTION 8: CURRENT GOVERNANCE AND OVERSIGHT ARRANGEMENTS

As noted above, the AMRSC was established in April 2012 to provide advice to the AHPPC on matters relating to AMR; provide expert advice and assistance on issues relating to AMR; and recommend national priorities relating to AMR for action.

The AMRSC is Chaired by Dr Marilyn Cruickshank, Healthcare Associated Infection Program Director at the ACSQHC. Membership of the committee comprises representatives of organisations currently undertaking national work in antimicrobial resistance and includes DAFF and the APVMA:

Dr Marilyn Cruickshank (Chair)	National Health Care Associated Infection Program Manager, Australian Commission on Safety and Quality in Health Care
Prof. Chris Baggoley	Chair, Australian Health Protection Principal Committee Chief Medical Officer, Department of Health and Ageing
Dr Mark Schipp	Chief Veterinary Officer, Department of Agriculture, Fisheries and Forestry
Dr Lynn Weekes	Chief Executive Officer, NPS MedicineWise
Dr Allen Bryce	Veterinary Medicine Program Manager, Australian Pesticides and Veterinary Medicines Authority
Ms Claire Boardman	President, Australasian College for Infection Prevention and Control
Dr Jim Buttery	Pharmaceutical Benefits Advisory Committee
A/Prof. John Ferguson	Chair, ACSQHC's Healthcare Associated Infection Advisory Committee
Dr Jenny Firman	Medical Advisor, Department of Health and Ageing
A/Prof. Tom Gottlieb	President, Australian Society for Antimicrobials
Dr Rosemary Lester	Chair, Communicable Disease Network Australia
A/Prof. David Looke	President, Australian Society for Infectious Disease
Prof. John McCallum	Head of Research Translation Group, NHMRC
Dr John Skerritt	National Manager, Therapeutic Goods Administration
Dr David Smith	Chair, Public Health Laboratory Network
Prof. John Turnidge	Chair, AMRAC, National Health and Medical Research Council
Mrs Margaret Duguid	Pharmaceutical Advisor, ACSQHC
Prof. Graeme Nimmo	Director of Microbiology for Pathology Queensland, Public Health Laboratory Network

The Committee's purpose, as set out in its Terms of Reference, is the development of a national strategy to minimise AMR. This includes supporting an integrated approach to the national strategy through coordination of national activities such as:

- a comprehensive national antimicrobial resistance and usage surveillance system
- education and stewardship programs
- infection prevention and control guidelines
- research into antimicrobial resistance and its prevention
- a review of the current regulatory system applying to antimicrobials, and
- community and consumer campaigns.

Furthermore, as noted above, DoHA is currently working with DAFF to establish new governance structures between the respective departments and portfolio agencies, to formalise and strengthen current arrangements for the coordination and oversight of the AMR work being undertaken by these organisations. These arrangements will build on the existing DAFF-DoHA Memorandum of Understanding for working collaboratively to deliver effective quarantine services at the Australian border.

Antimicrobial Stewardship Jurisdiction Network

The Antimicrobial Stewardship Jurisdiction Network was established by the ACSQHC in August 2012.

The role of the Antimicrobial Stewardship Jurisdiction Network is to:

- Provide a means for two way communication between the Commission and jurisdictions, private and paediatric sectors in regard to AMS activities
- Provide a means to implementing AMS activities nationally
- Provide opportunity for jurisdictions, private and paediatric sectors and the Commission to share materials and lessons learned nationally
- Assist to identify resources suitable for national development.
- Provide a forum for jurisdictions to be able to provide advice to the Commission via the Antimicrobial Stewardship Advisory Committee on proposed activities for national action.

Membership of the network is comprised of state, territory and private sector representatives.

International engagement on AMR

Australia works closely with the WHO which has long recognised drug resistance as a growing global health threat. Through several resolutions over two decades, the World Health Assembly of WHO has called upon Member States and the international community to take measures to curtail the emergence and spread of drug resistance.

Australia endorsed and supported a six point policy package on AMR introduced by the WHO for World Health Day in 2011. The package encourages countries to implement financed national AMR plans, and increase efforts in surveillance, prevention and control, and research.

AMR remains on the WHO agenda as a significant policy issue in 2013. Australia is one of two Western Pacific Region representatives on the WHO Executive Board (EB) and recently attended the January 2013 EB meeting where there was meaningful discussion about AMR as a challenge that cuts across several health policy topics including malaria, gonorrhea, and counterfeit medicines.

The link between counterfeit medicines and drug resistance in diseases such as gonorrhea is clear and Australia is working with the WHO and other Member States through the State Mechanism on substandard/spurious/falsely labelled/falsified/counterfeit medical products to combat counterfeit medicines. The Mechanism was established through a resolution at the 65th World Health Assembly in May 2012. Australia attended the first meeting of the Mechanism in Buenos Aires in November 2012 and remains actively involved in ongoing discussion.

Australia hosted the Malaria 2012 Conference in November 2012 to address the issue of drug resistant malaria in the Asia-Pacific. A key outcome of the Malaria 2012 conference was

consensus to increase high level political leadership and collaboration to eliminate malaria, including drug resistant malaria in the Asia-Pacific region. Key action areas agreed were to:

- establish the Asia-Pacific Leaders Malaria Alliance (the Alliance) to drive regional collaboration and momentum in tackling malaria;
- convene a taskforce to explore options to close the financing gap;
- convene a taskforce to improve access to quality antimalarial medicines and technologies;
- expand the coverage of effective malaria interventions, particularly in areas where artemisinin resistance has emerged; and
- identify and coordinate priority research and development for better program and policy impact.

As part of Australia's global commitment to combat AMR, the Australian Agency for International Development (AusAID) also supports regional partners and Governments to strengthen health care systems, and prevent the emergence and spread of antimicrobial resistance. For example, AusAID is supporting the Government of Papua New Guinea (PNG) to strengthen control of Tuberculosis (TB), and help prevent the spread of drug-resistant TB to Australia arising from people movements within the Torres Strait Treaty Zone[4].

[4] A special provision of the Treaty allows free movements (without passports or visas) by inhabitants of the Torres Strait Protected Zone for the purpose of engaging in traditional activities.