Attachment D – Additional AMR activities

2004

"IDEA^{3}S" System

The impact of a computer-based infectious diseases electronic antibiotic advice and approval system ("IDEA^{3}S") was assessed as an alternative to a labour-intensive, phone-based approval system. In 2004, DoHA contributed funding to Austin Health in Victoria to develop an 'infectious diseases electronic antibiotic advice and approval system' (IDEA^{3}S) which is now fully operational at the Austin Hospital. The purpose of IDEA^{3}S was to provide quick and accessible computer-generated antibiotic approval for common evidence-based indications and reduce the number of phone-based approvals while maintaining current levels of appropriate antibiotic prescribing. IDEA^{3}S -based approvals replaced 48% of all approvals for the most frequently requested antimicrobial agents (ceftriaxone/cefotaxime, vancomycin) and were associated with stable overall rates of antimicrobial use.

Antibiotic prescribing for community-acquired pneumonia was 76% concordant with IDEA^{3}S recommendations, and clinical acceptance of IDEA^{3}S was excellent. IDEA^{3}S is a useful new adjunct to routine clinician consultation to support appropriate antibiotic prescribing for a number of common indications in hospitals.

2005

Food Regulation Standing Committee (FRSC) Pilot Survey

At the request of the FRSC, Food Science Australia completed a scoping study and design for a pilot survey on AMR bacteria in food, in June 2005. FRSC endorsed the design, and, following an open tender process managed by DoHA, commissioned Food Science Australia to conduct a 12 month survey for AMR bacteria in Australian food. The survey provided a snapshot of the prevalence and types of AMR bacteria presented in selected raw retail foods. Raw foods were sampled monthly over a 12 month period (February 2007-January 2008) from retail outlets in Melbourne, Sydney, Brisbane and Perth. Whole poultry, pork chops, beef mince and iceberg lettuce were tested for the presence of Campylobacter, Salmonella, Eschericia coli and Enterococcus and isolates were tested for AMR. The project was managed by DoHA and was jointly funded by DoHA, DAFF and the States and Territories. The final report "Pilot survey for antimicrobial resistant (AMR) bacteria in Australian food: A report for the Food Regulation Standing Committee" was accepted by FRSC and published on the Food Regulation website in January 2009. The report was released in conjunction with DAFF's "Antimicrobial resistance in bacteria of animal origin: Pilot surveillance program".

2005

Salmonella Project

The Government funded an epidemiologist based at the Microbiological Diagnostic Unit in Victoria to conduct an analysis of historical data sets of *Salmonella* isolates from humans, animals and food, held in the National Enteric Pathogens Surveillance Scheme (NEPSS) and by the Australian Salmonella Reference Centre at the Institute of Medical and Veterinary Science in South Australia. Data were analysed for the period 1994 to 2003 to determine resistance trends and levels. The draft report was presented to EAGAR for peer review in February 2006, and was accepted by DoHA and DAFF in June 2006. The final report was

then presented to EAGAR to provide them with Australian data to inform their risk assessments and other activities.

2006

South Australian Research and Development Institute (SARDI) Survey

SARDI undertook a baseline survey of the microbiological quality of retail chicken meat. The project was jointly funded by DoHA, SA Health, NSW Health and FSANZ. As an additional component to the project, DoHA funded serotyping and AMR testing of Salmonella and Campylobacter isolates, and comparison of AMR types and genotypes of *Campylobacter jejuni* isolates from human and retail chicken meat samples taken in the same period. Reports on Salmonella AMR data (winter and summer) were received by DoHA in September 2006. The report on Campylobacter AMR was received by DoHA in April 2007. EAGAR was provided with information generated by the project as it became available.

2007

Food AMR Pilot Survey

In 2007 DoHA engaged Food Science Australia to conduct a pilot survey of AMR bacteria in food, on behalf of Food Regulation Standing Committee (FRSC). The FRSC pilot survey was part of an overall strategy to monitor the presence of AMR in Australia. Funds for the survey were contributed by all States and Territories, and the Australian Government.

The survey was designed to estimate the prevalence of AMR bacteria in raw food purchased at retail outlets, and identify the extent to which the food supply is a vehicle for antimicrobial resistance. The results of the survey could be used to inform future research on AMR bacteria in food, inform any future antimicrobial resistance survey program and assist in developing preventative strategies.

Overall, the findings of this survey showed a generally low proportion of bacteria isolated from raw food were resistant to antibiotics. The survey supports other Australian surveys examining antibiotic resistance in bacteria isolated from people, which show that resistance to antibiotics that are "critically important" antibiotics is uncommon in Australia[1]. When compared to reports from other countries, Australia has a very low prevalence of bacteria that are resistant to antibiotics in these foods, particularly those "critically important" for human medicine.

2010

Management of Food Safety Risks

From time to time, FSANZ may be asked by other agencies to advise on food safety matters resulting from the use of antimicrobials. For example, in 2010 FSANZ was requested by the then Biosecurity Australia to provide advice on the management of food safety risks associated with the import of apples potentially treated with an antimicrobial (streptomycin) to control the plant disease fire blight.

[1] *Pearson. J, Turnidge. J, Franklin. C, Bell. J, & the Australian Group on Antimicrobial Resistance. 2007. Prevalence of antimicrobial resistances in common pathogenic Enterobacteriaceae in Australia, 2004,* Communicable Diseases Intelligence, Volume 31, Number 1

The FSANZ evaluation of the potential health risks from consumption of apples from streptomycin-treated orchards considered:

- direct exposure to antimicrobial resistant (AMR) pathogenic microorganisms on contaminated apples
- transfer of AMR genes from non-pathogenic microorganisms present on apples to human gut microflora
- amplification of AMR microorganisms in the gut from direct exposure to antimicrobial residues present on the fruit.

It was concluded that the consumption of apples imported from New Zealand posed a negligible increased risk to Australian consumers from potential exposure to antimicrobial resistant organisms. This view was confirmed by internationally-recognised experts in the field of antimicrobial resistance, who peer-reviewed the FSANZ assessment.

ONGOING ACTIVITIES

OzFoodNet

OzFoodNet is Australia's national enhanced surveillance system for foodborne illness. It is coordinated by DoHA and has epidemiologists based in all States and Territories. OzFoodNet conducted two case control studies of human Campylobacter infections, including a determination of patterns of resistance to common antibiotics. Reports were published in Emerging Infectious Diseases in 2003 and Clinical Infectious Diseases in 2006.

Australian Tuberculosis Reference Laboratory Network

The Australian Tuberculosis Reference Laboratory Network compiles statistics on cases of bacteriologically-confirmed tuberculosis, including antimicrobial resistance. They publish their data in *Communicable Disease Intelligence*.

Multi Resistant Gram Negative (MRGN) Working Group

The MRGN Working Group was established in January 2012. This working group was initiated by the ACSQHC in collaboration with the Australasian Society for Infectious Diseases and the Australian College of Infection and Prevention Control. Its role is to develop priorities and recommendations regarding MRGN organism detection, surveillance, and containment.

Healthcare Associated Infection Technical Working Group

The ACSQHC's Healthcare Associated Infection (HAI) Technical Working Group was established in July 2010. The role of the HAI Technical Working Group is to provide expert technical advice and assistance on issues relating to the surveillance of HAI.

Membership is comprised of representatives from each state and territory healthcare infection surveillance unit. The main roles of the HAI Technical Working Group are to:

- Advise the ACSQHC through the Healthcare Associated Infection Advisory Committee on technical aspects of surveillance of HAI, and
- Develop and specify consistent national surveillance models that develop best practice.