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The Australasian Society for Infectious Diseases (ASID) (Inc) Submission to the Senate Inquiry into the progress in the implementation of the recommendations of the 1999 Joint Expert Technical Advisory Committee on Antibiotic Resistance. February 2013

It is a pleasure and a privilege to be able to make a submission to this inquiry on behalf of the members of The Australasian Society for Infectious Diseases (ASID).

The Australasian Society for Infectious Diseases (ASID) Inc. is an independent professional society, which was founded in Melbourne in 1976 by an eminent group of physicians, pathologists and scientists. ASID is a specialist society of the Royal Australasian College of Physicians (RACP) and as such is closely involved with the training of Infectious Diseases Specialists in adult and paediatric medicine, as well as the many other diverse activities of the college. ASID also has close ties with The Royal College of Pathologists of Australasia (RCPA) and is strongly represented on the Joint Special Advisory Committee of both Colleges that supervises Infectious Diseases Physician, Paediatrician and Clinical Microbiologist training for medical specialists. The society has over 600 current members, who are the vast majority of Infectious Diseases Physicians, Paediatricians and Clinical Microbiologists in Australia and New Zealand.

The aims of the society are to advance postgraduate education, promote research , and advocate for evidence-based public health policy in matters related to infectious diseases in Australia and New Zealand and internationally.

The Antimicrobial Resistance Summit, convened in February 2011 is a striking example of the advocacy role that ASID has played. In 2010 ASID council and its membership identified the threat of increasing antimicrobial resistance in common bacterial infections affecting the community as the issue in most need of action. Although ASID membership- Infectious Diseases Physicians, Microbiologists, Veterinarians and Public health Physicians- have diverse interests within the field of infectious diseases, the issue of the looming problem of untreatable bacterial infections was identified as the single most important infection related issue affecting the membership. The membership and council felt that attention by government, professional bodies and agriculture was required. This was seen as an urgent need due to the lack of progress in implementing the recommendations of the JETACAR report published in 1999. In response, ASID together with the Australian Society for Antimicrobials (ASA) convened the 'Antimicrobial resistance summit' in Sydney in February



2011. Invitations to government, NHMRC, academia, veterinary medicine, agriculture, learned medical colleges were widely accepted and attendance and media interest was gratifying to the organisers. The summit was convened because ASID and ASA were particularly concerned that the main group charged with implementing the JETACAR recommendations, the EAGAR committee, had ceased to exist after a change in priorities at the NHMRC. Furthermore, no other arm of government had taken up that leadership role.

Since the publication of the JETACAR report in 1999 rates of resistant bacterial infections had risen markedly and the dynamic had changed from being confined to hospital associated infections, to a real change in antibiotic resistance patterns in common community acquired infections. Today, it is a common event to see patients (including children) with resistant *Staphylococcus aureus* infections of the skin bones and soft tissues, and resistant *Escherichia coli* infections of the urinary tract, gall bladder and bowel being sent to hospitals for intravenous therapy as there are now no effective oral antibiotics available. Unfortunately the pipeline of new agents has all but dried up and there is evidence that multi-drug resistant bacteria now seen overseas are becoming established in the community in Australia. This problem affects people of all ages from all walks of life and will likely become a major burden on the physical and economic health of the country. Advances in modern medicine seen in transplantation, surgery, intensive care and neonatal medicine would not be possible without effective antimicrobials. These advances are under a major threat from antibiotic resistant bacteria which will become a reality over the next 20 years without effective intervention.

The ASID ASA antimicrobial resistance summit identified that unlike other countries, Australia had no overall coordinated approach to this major problem, and that the response to this threat was disparate, under resourced and therefore likely to be ineffective. A communiqué was published in the Medical Journal of Australia after the summit (Gottlieb T, Nimmo G. Med J Australia. 2011;194:281-283) calling for a new, invigorated and nationally coordinated approach to this public health problem that has been identified by the World Health Organisation as one of the 3 greatest threats to human health.

The core components of the response to this threat proposed by the summit were:

1. Surveillance:
 - i. Comprehensive national surveillance of infections and antimicrobial resistance rates in human and veterinary medicine and agriculture
 - ii. Comprehensive national surveillance of antimicrobial usage in human and veterinary medicine and agriculture
2. Reorganisation of registration, licensing, subsidies and access to new agents so that antimicrobial agents are regulated by one national authority covering human, and veterinary medicine and agriculture



3. Infection Prevention:
 - a. Enhanced Infection control
 - b. Immunisation
 - c. Driven by comprehensive community and health care epidemiology
4. Improved Prescribing
 - a. Stewardship programs
 - b. Public and professional education
 - c. National guidelines and formulary development
5. Research
 - a. Basic science
 - i. New agents
 - ii. Prevention including vaccines
 - b. Epidemiology
 - c. Social research

A strong recommendation from the summit was that these initiatives should be coordinated and managed by a single national authority similar to the CDC. (See the call for an Australian CDC-(ACDC) in Gottlieb T, Currie BJ, Looke DFM. Infectious diseases in Australia- the next decade (Ed). Med J Aust 2012; 196:292-293)

Some recent initiatives indicate that Australia has the capacity to respond to this threat in a coordinated way, but a major limiting factor in this issue as well as in Australia's responses to other emerging threats is the low level of centralised expertise and resourcing for coordinating effective responses in conjunction with the States and Territories. Progress has been made with some of the major recommendations of the JETACAR report. The Australian Commission on Safety and Quality in Healthcare (ACSQHC) has been at the forefront of implementing improved national infection control programs, now mandated in all healthcare facilities by accreditation standards. State based Healthcare associated infection surveillance programs have developed across the country and are collecting a substantial volume of data. The national Hand Hygiene initiative funded by ACSQHC has been rolled out into all healthcare facilities and infection control indicators are published on the "My Hospital" website.

Similarly, the ACSQHC has adopted antibiotic stewardship as a major part of their hospital infection program and the presence of an effective stewardship program is now a mandatory part of achieving satisfactory accreditation. The efficacy of this initiative in reducing antimicrobial usage and consequently resistance is as yet unknown.

However, there are also programs that require urgent attention to maximise their utility. Surveillance of resistance rates has been conducted in only a limited fashion by the AGAR group, hosted by the Australian Society for Antimicrobials (ASA) and funded by DOHA. This



has provided extremely useful but limited “snapshot” data of resistance rates in a limited number of organisms in major hospitals. There are now two antimicrobial consumption surveillance programs. NAUSP (National Antimicrobial Usage Surveillance Program), funded by the South Australian Dept. of Health, collects antibiotic dispensing data from a large sample of hospitals and ICUs across the country. In Queensland, CHRISP (The Centre for Healthcare Related Surveillance and Prevention) in the Department of Health in Brisbane collects data on antimicrobial dispensing from all public hospitals in Queensland and issues a quarterly report to the state-wide drug committee (QHMAC). Other programs collect prescribing data from general practice and antibiotics funded by the PBS. Of note, there is no comprehensive surveillance program that links prescribing of antimicrobials to the prescriber.

In response to the call from the ASID/ASA summit the National Prescribing Service (NPS) refocused their program so that antimicrobial prescribing improvement interventions changed from being intermittent initiatives to become a permanent feature of their program. Furthermore, in 2012 NPS initiated innovative approaches to reach the consumer with their “resistance fighter” campaign based through social media.

Similarly the NHMRC, in response to the ASID/ASA summit refocused their priorities and reintroduced infectious diseases to the priority “list”. Funding has now begun to be allocated to antimicrobial agent themed research. One example is the funding of CREMARA, the Centre of Research Excellence in Minimising Antimicrobial Resistance in Acute Respiratory Infections, based at Bond University in Queensland

A further major initiative in 2012 has been the establishment of the AMRSC (Antimicrobial Resistance Standing Committee) of the Australian Health Protection Principal Committee. This new initiative includes many of the important stakeholders with representation from professional associations, the PHLN, CDNA, TGA, NHMRC, PBS, NPS, APVMA, the Commonwealth Chief Medical Officer and the Chief Veterinary Officer, and is charged with progressing the Commonwealth Government’s response to this threat. Its work has really only just begun and its first task has been to investigate the establishment of comprehensive resistance surveillance in Australia. It has limited its first initiatives to antibiotic use in human health as a priority and is yet to address the critical issue of veterinary and agricultural antibiotic use.

In summary, since the dissolution of EAGAR, Australia’s response to the major public health threat of antimicrobial resistance has been disparate, and we are now more than ten years behind where we now should be. One notable success in this country has been a co-ordinated policy of restriction of quinolone prescribing in both humans and animals which has resulted in a low rate of resistance to this important class of antimicrobials. This has demonstrated how regulation and oversight can prevent the widespread development of



resistance and the successful preservation of these antibiotics for future use. (Cheng AC et al Control of fluoroquinolone resistance through successful regulation, Australia. Emerging Infectious Diseases 2012 18:9 (1453-1460). The introduction of resistant strains from overseas is now beginning to erode that achievement.

Australia needs to substantially and urgently strengthen its response to antibiotic resistant bacteria and commit funds and energy as an immediate priority to develop then implement a comprehensive national plan to address this major threat to our health.

A blueprint for this plan has been mapped out already at the ASID/ASA Antimicrobial resistance summit in 2011.

These are:

1. Comprehensive surveillance of antimicrobial resistant infections so that the impact and epidemiology can be understood allowing focussed interventions
2. Improved and coordinated regulatory controls over antimicrobials in human and veterinary health and agriculture
3. Antimicrobial stewardship programs extended from hospitals into the community with implementation of electronic prescribing and decision support for the prescriber in all areas
4. Enhanced infection prevention strategies with investigation of ways of circumventing the need for antimicrobials in all sectors of human and animal health and agriculture
5. A major research effort targeting all aspects of this threat to human and animal health in terms of causes, consequences, new antimicrobial agents, and prevention strategies

The establishment of AMRSC has begun to address this issue; however a substantial increase in resources is urgently required to coordinate and implement all the elements of that blueprint.

ASID members strongly advocate that government seek urgent and comprehensive solutions to this major public health problem

David Looke

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