Government of **Western Australia**
Department of **Health**

ClinicalSenate

Superbugs

Clinical Senate Meeting

Final Report

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Introduction

The role of the Clinical Senate of Western Australia (WA) is to provide a forum where collective knowledge is used to discuss and debate current strategic health issues. Recommendations are made in the best interest of the health of all Western Australians and are subsequently provided to the Director General (DG), the State Health Executive Forum (SHEF) and through the DG to the Minister for Health.

The first meeting of the Clinical Senate of Western Australia for 2016 was held on 4 March at the University Club of WA. The topic for debate was Superbugs.

The World Health Organisation's 2014 report on global surveillance of antimicrobial resistance revealed that antibiotic resistance is no longer a prediction for the future; it is happening right now, across the world, and is putting at risk the ability to treat common infections in the community and hospitals. Without urgent, coordinated action, the world is heading towards a post-antibiotic era, in which common infections and minor injuries, which have been treatable for decades, can once again kill.

According to the National Health and Medical Research Council (NMHRC) and Australian Commission on Safety and Quality in Healthcare (NSQHS), infection is the most common complication affecting hospital patients, affecting 200,000 patients each year.[1] At least half of healthcare associated infections are preventable. Successful infection control to minimise the risk of transmission requires a range of strategies across all levels of the healthcare system and a collaborative approach for successful implementation.

It is estimated the excess length of stay due to a surgical site infection is between 3.5 and 23 hospital bed days, depending on the type of infection. The total national number of bed days due to surgical site infections for a one year period was estimated to be 206,527 bed days.[2] If there was optimal use of antimicrobials and containment of antimicrobial resistance, $300 million of the Australian national healthcare budget could be redirected to more effective use every year.[3]

The NSQHS Standard 3 Preventing and Controlling Healthcare Associated Infections Healthcare calls for clinical leaders and senior managers of a health service organisation to implement systems to prevent and manage healthcare associated infection and communicate these to the workforce to achieve appropriate outcomes.

The specific focus for debate was to consider inappropriate and overuse of antimicrobials and how it contributes to the emergence of resistant bacteria and causes patient harm. Senators were asked to consider strategies to reduce antibiotic resistance through changes in practice (Hospital focus).

Senators were asked to debate issues around what WA Health should be doing to promote infection control and AB stewardship and what else could be done to control multi resistant organisms.

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[1] National Health and Medical Research Council. Australian Guidelines for the Prevention and Control of Infection in Healthcare. Canberra: NHMRC, 2010:260.

[2] Graves N, Halton K, Robertus L. Costs of Health Care Associated Infection. In: Cruickshank M, Ferguson J, editors. Reducing Harm to Patients from Health Care Associated Infection: The Role of Surveillance. Sydney: Australian Commission on Safety and Quality in Health Care, 2008:307–335.

[3] Australian Commission on Safety and Quality in Health Care. Windows into safety and quality in health care 2009. Sydney: Australian Commission on Safety and Quality in Health Care, 2009.

The co-Sponsors for the debate were Professor Tarun Weeramanthri, Assistant Director General, Public Health and Professor Gary Geelhoed, Chief Medical Officer and Assistant Director General, Clinical Services and Research.

Experts invited to the debate included clinicians with direct involvement in infection prevention and control and AB stewardship across the WA Health system. Experts also included leading researchers and champions leading change and provided both a local and interstate perspective.

Dr David Russell-Weisz, Director General opened the debate reminding senators of the previous debate on improving the patient experience. He called on senators to consider “how can we change consumer behaviour with us”.

In her opening address Senate Chair, Professor Julie Quinlivan called on senators to use their diverse skill base to consider how we prevent and manage antibiotic resistance and the emergence of superbugs through changes in clinical practice within our hospitals.

Dr Paul Armstrong, Director, Communicable Disease Control Directorate, Public Health Division, Department of Health WA set the scene for debate. Dr David Speers, Infectious Disease Physician, Head of Microbiology at QEII PathWest Laboratory Medicine, Sir Charles Gairdner Hospital and A/Professor Owen Robinson, Infectious Diseases Consultant, Royal Perth Hospital and Fiona Stanley Hospital, PathWest Laboratory Medicine WA offered a local perspective into infection control and AB stewardship whilst Professor Lindsay Grayson, Infectious Disease & Microbiology Department, Austin Health and Department of Medicine, University of Melbourne, Australia outlined initiatives implemented at his facility that have limited both the emergence and transition of pathogens.

1. Process

The Clinical Senate in Western Australia was established in 2003 and each debate follows a standard process that has been refined over time. This process ensures that senators and others involved have a clear understanding of what is required and receive sufficient information to discuss the topic and then develop recommendations for the Director General of Health (DG) and the State Health Executive Forum (SHEF). A copy of the program is included (Appendix A).

Prior to the debate, attendees received a series of webinars and pre-reading documents containing background information in preparation for the debate.

The full day Senate debate traditionally commences with a Welcome to Country, which for this debate was offered by Nyungar Elder, Ms Marie Taylor.

Following the Welcome to Country, the Chair of the Clinical Senate, Professor Julie Quinlivan welcomed attendees and gave an update on senate activities and provided feedback on the recent survey of members conducted to inform the executive into the review of the Clinical Senate's Terms of Reference and the ideal model for clinical engagement. She introduced the topic by sharing this quote from the World Health Organisation "Preserve the miracle of antibiotics – "No action today, no cure tomorrow".

Director General, Dr David Russell-Weisz officially opened the debate affirming his support for the clinical senate and its importance in the current WA health reform process. He reported on the clinical senate's review and on the recommendations from the patient experience debate.

Setting the scene for the debate was Dr Paul Armstrong who provided a comprehensive overview of the many factors that contribute to the spread of multi-resistant organisms and the drivers for antimicrobial resistance. He provided a broad overview of the topic and then concentrated on a range of local initiatives and areas for improvement.

Presentations by Dr David Speers and A/Professor Owen Robinson provided an insight into the key focus areas for debate. They outlined the extensive work being carried out in WA with regard to infection control and AB stewardship.

The next stage of the Clinical Senate process was a plenary debate entitled "Superbugs – Improving outcomes in WA hospitals". This session opened with a video presentation by Professor Lindsay Grayson who shared practical initiatives changing clinical care at Austin Health.

The debate that followed allowed all participants (both Senators and invited experts) to share their experience and identify opportunities to improve the clinical practice around infection prevention and control as well as AB stewardship across WA Health.

The afternoon sessions were devoted to two concurrent workshops in which participants focused either on:

a) improving AB stewardship in WA Health or
b) preventing and controlling AB resistance in WA hospitals.

Recommendations from the workshops were presented in the final session of the day and ranked in order of importance by the full Senate. The Clinical Senate Executive issued a request for a response by the Director General of Health to each recommendation at the next debate. Responses could be:

a) endorsed,
b) endorsed in principle, or
c) not endorsed.

2. Presentations

Mr Bevan Bessen, facilitator for the day, opened proceedings by welcoming participants, acknowledging the traditional owners both past and present, and introducing Nyungar Elder Ms Marie Taylor who offered the Welcome to Country.

Ms Taylor offered a beautiful Welcome to Country. “Greetings, the aboriginal custodian welcomes you all here to the land of the people of many beasts. This is crow and cockatoo dreaming land, whose families and ancestors tread the grounds leaving footprints upon the land where their spirits linger on surroundings through stories as we listen, look, learn and talk. Like our people did in the past we are doing so today and we are doing so tomorrow”. She spoke of the spirituality that links the past with the present for Nyungar people. She closed with a blessing: “May I ask our Father, God above to bless and keep you as you sit the palm of his hand, under the shadow of his almighty world, down here at this place, by the swan river and as the clouds billow upon our country let me remind you that we are one people”.

Mr Bessen introduced Clinical Senate Chair, Professor Julie Quinlivan, thanked Ms Taylor for her welcome and blessing.

In opening Senate Chair, Professor Julie Quinlivan provided an update on activity since the last meeting. She reported that at the request of the Director General, the executive committee had embarked on a review of the Clinical Senate Terms of Reference and Charter to align to reforms in health governance and the introduction of formal Boards to manage each Health Service. As part of the review the executive embarked on a process involving the following steps:

1. A literature review on clinician engagement;
2. An environmental scan of all states and jurisdictions on their strategy to engage clinicians at a jurisdictional level.
3. A survey of current and immediate Clinical Senators to determine how they wish to be engaged in health reform. It was pleasing to achieve a 60% response rate.
4. Finally, a facilitated session was conducted with the executive to review results, and determine recommendations to amend the current TOR and Charter to integrate into the new governance model for WA Health.

Prof Quinlivan then shared some of the key findings:

More than 90% of respondents advised that the CS facilitated clinician engagement, contributed to healthcare reform, contributed to knowledge of contemporary health issues, provided a mechanism for feedback to healthcare decision-makers, provided clinician networking, provided an avenue for debate on important healthcare issues, enabled clinicians to work on recommendations to make a difference to health at a state level, contributed to clinician thinking on bigger picture health reform, enabled clinicians to share their knowledge and experience and provided different perspectives that enhanced work.

She reported there were four main qualitative themes:

1. Independence of clinician engagement

   There was an overarching theme that the CS should remain an independent body, free of politics and local health issues.

   "It should stay as an independent clinician led forum".

2. Membership

   A second theme concerned membership, with an emphasis on the need for members act in a representative manner and retain their independence in decision-making. There was a call for more surgical members and to retain the multidisciplinary nature of the CS.

   "Members need to retain their independence."

3. Boards

   Another strong theme was a need for a strong link between the Senate and Boards, without losing the primary reporting line to the DG. Many members felt Boards should nominate an observer to the Senate, or Board chairs should attend on a rotational basis and act as executive sponsors.

   One respondent stated:

   "As the debates at the Clinical Senate are relevant to all health boards, the recommendations and the actions taken to the Department of Health should be submitted to boards. Board chairs should be invited to participate in the Clinical Senate."

4. The need for accountability in implementation of recommendations.

   Most respondents believed reporting lines should still go centrally to the Director General of Health (DG) as a system manager, and from the DG to Boards via their Chairs for operational management. However, there needed to be a process wherein Boards were accountable for the implementation of recommendations and this needed to feedback to the DG and CS to close the engagement loop.

   "The Clinical Senate can provide the same expert advisory and policy role to health boards that it formerly did by advising the Director General of Health by amending lines of reporting. However, they (sic Boards) also need to report back"

Finally, she stated there was overwhelming support for the concept of a state-wide clinical engagement forum such as the Clinical Senate.

Prof Quinlivan conveyed there was additional data collected on the optimal way to engage clinicians and how to influence quality and safety. She thanked members for their input and stated the results would be published in due course and distributed to members.

In introducing the topic of the day, Prof Quinlivan referenced the statement from the World Health Organization: *Preserve the miracle of antibiotics –"No action today, no cure tomorrow".*

She then welcomed all participants to the first meeting of the Senate for 2016 and thanked the executive sponsors for the debate Professor Tarun Weeramanthri, Assistant Director General, Public Health and Professor Gary Geelhoed, Chief Medical Officer and Assistant Director General, Clinical Services and Research. She stated, together we would like you to use your diverse skill base to consider how we prevent and manage antibiotic resistance and the emergence of superbugs through changes in practice within our hospitals.

She challenged senators to consider what WA Health needs to do to promote infection control and AB stewardship and what else could be done to control multi resistant organisms (MROs). We must also consider our own behaviours.

To stimulate thinking Prof Quinlivan shared a video clip of the top three videos from the 2015 Antibiotic Awareness Week Tropfest video awards. They emphasised the need for community awareness and supported the evidence in their messages that antibiotic resistance is the greatest threat to human health today, there are many new superbugs and that by misusing antibiotics today means they won't work when we need them tomorrow.
https://vimeo.com/144825327

Professor Quinlivan introduced the list of speakers and expert participants all of whom she stated would inform the debate and discussion. Dr Paul Armstrong would set the scene for debate followed by local experts Dr David Speers and Dr Owen Robinson who provided the WA perspective on both infection control and AB Stewardship.

She informed senators that at the start of the plenary session, they would be shown a video presentation prepared by Professor Lindsay Grayson. In it he would highlight initiatives being implemented in Austin Health that are improving the prevention and control and that can demonstrate both clinical and economic benefit.

Professor Quinlivan welcomed senators and member representatives and reminded participants of how the Clinical Senate of WA operates:

- To work collaboratively, setting aside individual and organisational agenda.
- To state your opinions freely, drawing on your clinical experience and expertise.
- To empower you to influence others in all your professional spheres with the new perspectives gained through the debate.
- To play a leadership role in health reform, developing strong, valid, priority recommendations in the best interests of the health of all Western Australians.

Prof Quinlivan reminded participants that all recommendations would go to the Director General of Health and his executive with an explicit response requested.

She thanked the executive sponsors from the previous debate, Dr Audrey Koay, A/Executive Director, Patient Safety and Clinical Quality, Department of Health and Ms Pip Brennan, Executive Director, Health Consumers' Council (WA) who had worked closely with the Director General to consider each recommendation and how they might be taken forward. She then welcomed the Director General, Dr David Russell-Weisz to officially open the day and report back on the recommendations.

Dr Russell-Weisz opened by acknowledging Senate Chair Professor Quinlivan and the speakers and experts assisting with the debate.

He stated that it was important to comment on what Prof Quinlivan mentioned at the start with regard to the review of the Clinical Senate and by reflecting on his role as Director General and the role of new governance going forward. He stated, the Clinical Senate had survived many years of change in the health service and department and now found ourselves headed in a new direction. Therefore, it was important for the clinical senate, much like the department, to take a look at itself in this brave new world and consider where it should be.

He also reflected that he was pleased to see how the clinical senate executive proactively approached the review, researched it, conducted a survey but also looked to the future, to the governance changes and how best placed the senate would be in the future. "We do not want to lose the Senate when we go to Boards and I fully support it. We do not want to lose working together particularly in areas such as the clinical services framework and the clinical senate and

independent engagement and independent advice and recommendations are very important. Use this opportunity to identify not how we can do it better, rather how we can do it in the new environment. I look forward to receiving the report before the Boards come in July."

He then followed by discussing the recommendations from the previous debate, which focussed on the patient experience. This was a very important topic for debate and he acknowledged Executive Sponsors Dr Audrey Koay and Ms Pip Brennan.

In December senators were charged with considering a range of issues surrounding the patient experience; for example: How to capture the patient experience, how to measure it and determine the best way to continue to monitor and improve and importantly, feed these results back to frontline clinicians to improve quality outcomes. The clinical senate debate produced a number of important strategies to improve the patient experience.

He reported there were 9 recommendations to help guide the way forward for WA Health in our work to continually improve the patient experience. Of these, 4 were endorsed and 5 were endorsed in principle. Dr Russell-Weisz stated there are none that would not be endorsed, it was only a matter of how we do it best! He stated the new governance is not about a new level of bureaucracy, it is about accountability and patient care and decisions made closer to home.

Dr Russell-Weisz provided a comprehensive response to each recommendation outlining key actions for each. His report follows and includes the fully endorsed recommendations followed by those endorsed in principle recommendations:

Rec 4: Endorsed

WA Health should introduce a system-wide, consistently branded 'Patient First' program that drives the patient experience agenda and under which all key patient experience improvement programs are measured, with results publically available.

Response: The Director General reported there is no denying that we need this. The current Patient First program will be reviewed, with a view to making the necessary changes to meet this recommendation.

We need to introduce a system wide consistently blended patient first program that actually focused on the patient experience and not just on the clinical care.

The program is being driven by a multidisciplinary/multi-organisational working group of representatives from WACHS, Health Consumers Council, Carers WA, health service providers, Consumer Advisory Council members, and the Patient Safety and Clinical Quality Division at the Department of Health.

This group is reviewing the existing Patient First materials, and investigating the possibility of using a range of alternative options for providing information including: mobile phone apps, videos, printed booklets, information sheets, picture booklets etc.

Rec 5: Endorsed

The Senate recommends Chief Executive Officers visibly and actively lead consumer partnership programs and have related Key Performance Indicators (KPIs) in their performance agreement with their boards.

Response: This will a key focus for the boards and a key KPI for the executives and will be part of what we sign as a service agreement between the DG and the Chair of the Board and the Chief Executive. The legislation and policy frameworks have been introduced and there are very clear recommendations and clear performance indicators for the Boards to deliver.

Rec 7: Endorsed

In consultation with consumer and carer peak bodies:

- A statewide definition of a great patient experience is developed that incorporates a value-based, patient-centred approach. WA Health, as system manager, is to ensure this is adopted by the whole of Health.
- Patient experience tools are developed or selected for use that reflect the indicators that matter to patients.

Response: This recommendation will be given priority. It is important to note that a definition of a 'great patient experience' should be developed within the context of the already defined concepts of patient feedback and experience.

Rec 8: Endorsed

The Senate recommends that a consumer is appointed as a member of SHEF (or its equivalent post legislative amendments to create Health Service boards).

Response: The Director General stated this should already be in place and will absolutely be done. I endorse this recommendation with the understanding that this will be discussed with SHEF.

Rec 1: Endorsed in principle

The principles of customer service (including empathy and communication) are integrated into mandatory training modules for employees who have direct patient contact.

Where possible, this would be embedded into existing training.

Consumers and carers are central in the development and delivery of the added elements of the modules.

Response:

The Director General stated this is about being a values based organisation and I believe it is not about visions rather about value. It is not just about clinical care it is about empathy and integrity and that we show our patients and colleagues, making us better clinicians.

This recommendation should be embedded into existing training. It should not be a top down approach we must embed it and must have consumers and carers central to the development. It should be part of induction processes across all areas. I have committed to looking at the last two hospitals we have commissioned, as well as Midland and the New Children's Hospital to see how they are going to learn from the past and actually put this into their induction and training framework.

Rec 2: Endorsed in Principle

WA Health - as system manager - adopts one tool to rate patient experience that is common system-wide to monitor and benchmark for patient experience.

The results from the one common tool must be fed back to SHEF, Area Health Service executive/boards, individual wards within healthcare facilities and consumers.

Feedback should include results from all sites.

Consideration should also be given to adopting additional tools for particular subgroups of patients and carers, e.g. CaLD, Aboriginal etc.

Response:

The most important aspect of this recommendation is the call for standardisation in regards to rating the patient experience, which could be addressed via setting a policy so that WA Health can mandate the indicators. There needs to be consistent measurement through the use of a variety of tools.

Rec 3: Endorsed in Principle

The trial of Patient Opinion be expanded across WA Health (beyond WACHS) to provide a constructive platform for the public and health services to connect to improve quality. In the process:

The capacity to collect data into the DATIX Consumer Feedback Module should be explored.

Data should be reported at all system levels.

Response:

The Director General reported he has endorsed this recommendation in principle pending further discussion with WACHS regarding its trial and a more detailed examination of the full potential of Patient Opinion.

He reported he would be meeting with the Director of Patient Opinion to gain better insight into the full platform. Dr Russell-Weisz stated feedback from our patients and our ability to respond directly to them is an important priority for the future.

Rec 6: Endorsed in Principle

The Clinical Senate recommends prioritisation of a single electronic platform accessible by all area health services that is able to provide information on patient care providers, appointments and clinics, discharge summaries and resources available in the community.

Response:

Dr Russell-Weisz stated he supported this recommendation and that he would take it to the ICT governance committee, where they will consider options for this electronic platform.

However, it must be recognized that this project is subject to the prioritisation of all ICT projects across the system.

Rec 9: Endorsed in Principle

In recognition of the fact that there are patients with behaviours that are challenging for healthcare providers and who may be our most vulnerable patients, that WA Health explores how it supports staff in caring for these patients.

Response:

Dr Russell-Weisz reported that he has sought clarification of this recommendation in order to be clear of its intent. In his opinion it dovetails into recommendation 1 and has scope in compassionate care.

He reported that the Nursing and Midwifery Office is currently scoping an initiative in the area of compassionate care. One strategy could be for additional offices to take this one step further with the rest of the division to develop a tool and resources to support staff to provide compassionate care.

In addressing the topic of the day, Dr Russell-Weisz reflected on his own experience when as a hospital doctor the issues were related to hepatitis C viruses. He stated yet when you watch the three videos presented today what comes through is that the greatest threat is overuse of antibiotics. Many of us feel pressured to prescribe antibiotics when we don't necessarily think

they are required however, evidence is that we must prevent this going forward. I hope that you also consider debate about changing behavior; the evidence is there so I ask you to how do we change evidence into behavior?

Dr Russell-Weisz stated there is no doubt antibiotics have changed the course of history however, the evidence is clear that there is growing resistance and in fact, they are now causing more harm than good if used incorrectly. Some research into antibiotic use in hospitals shows that 33% of all prescriptions are not in accordance with antibiotic guidelines. This is staggering and aligns with how many times per week clinicians are pressured to prescribe when they are not sure. The downside of this is that the incidence of antibiotic resistance is, broadly proportional to the total amount of antibiotics used.

In outlining what could be done he stated we have good antibiotic stewardship programs and good policy frameworks in hospitals. AB stewardship programs have been shown to reduce inappropriate AB use by 36% but we are not just talking about hospitals, whatever we come up with today should be taken further into the community. These programs improve patient outcomes and reduce adverse consequences of AB use including toxicity and unnecessary harm. At the same time it is not necessarily about what we do it is about what we do for our patients. If you consider the previous debate, the patient experience and if a patient expects an antibiotic because that is what they had before, how are we going to work with (not educate) them so that they are part of this debate because patients have the greatest capacity to change the course of events with us, rather than doing it ourselves.

The Director General told senators they would be asked to consider the merit of these programs, what they currently look like in WA Health, and how they might be improved. They would also be asked to consider:

- What are the issues around antimicrobial resistance?
- Is there more WA Health should be doing to promote infection control?
- What else can be done to control multi-resistant organisms?
- How can we change consumer behaviour?
- How do we change our own behaviour?

He challenged senators to consider how they could involve patients in order to change demand. “I urge you to embrace this opportunity to discuss these important issues, knowing that the outcomes from today’s debate will be vital in helping WA Health to address the issue of superbugs – both in our hospitals, and in our community”.

Mr Bessen thanked the Director General for his comprehensive response to the recommendations from the previous debate and for providing insight into the new governance, new system and how we must adapt. He then introduced the first speaker for the day, Dr Paul Armstrong Director, Communicable Diseases Control Directorate, Public Health Division, Department of Health WA set the scene for debate to set the scene for debate.

In his opening statement Dr Armstrong stated given complexity of the area he would provide a broad overview and then focus on the content required for the debate. He stated the focus of his talk would be in three parts: firstly, what are superbugs, secondly, to consider the drivers for antimicrobial resistance and finally, what could be done about it in WA Health.

He described Superbugs as multi-resistant organisms (MROs), resistant to a number of antibiotics. MROs arose from natural selection, that is, evolutionary pressure that selected resistant organisms following exposure to antibiotics within human medicine, veterinary medicine and agriculture. Dr Armstrong stated that within human medicine, the pressure on bacteria to develop resistance occurs in both hospitals (especially large tertiary hospitals) where the sickest patients are cared for and where the need for powerful antibiotics is greatest. This

also occurs in the community for example with General Practitioners (GPs) unnecessarily prescribing antibiotics, or in developing countries where people are able to access and purchase antibiotics over the counter.

He advised that all 'microorganisms' (protozoa, fungi etc.) exhibit antimicrobial resistance (AMR). AMR arises due to natural selection – there are resistance genes that have always existed and antibiotic use induces genes to become the bacteria and those are the ones that proliferate. We also know non-use of antibiotics makes the resistance dissipate. He outlined the many mechanisms that allow these bacteria to be transferred from one bacterium to another with the common method by gram negative organism's code for resistant genes to be transferred between bacteria of the same species or of different species therefore with the ability to spread widely and rapidly.

Dr Armstrong stated the main reason for concern is that there is a big effect on the community. He reported there was limited data in Australia and cited the Centre for Disease Control and Prevention (CDC) in the USA where it is estimated that more than $20 billion dollars in direct costs are associated with antimicrobial resistance per year. There is concern with regard to patient outcomes, as they often experience longer hospital stays, higher mortality rates and it alters their natural flora. There is also an effect on the health system due to increased costs of antibiotics, special equipment, staff time and tying up of resources. Some organisms now have no antibiotic effective against them and we need to keep these out until we have our procedures and policies in place to successfully curb them around the world.

Dr Armstrong stated that the overuse and misuse of antibiotics can accelerate the emergence of drug-resistant strains, so that a drug that was previously effective to treat a particular microorganism is rendered ineffective. Antibiotics should be prescribed only where there is an evidence-based need. He reported there are fewer MROs detected in WA compared to other states and territories, owing to our strong culture of infection prevention and control, and our relative isolation i.e. the Nullarbor factor.

In the second part of his talk Dr Armstrong spoke of the drivers of AMR. Resistance is caused by the overuse, misuse and simply the use of antibiotics. All of these: Agriculture, veterinary care, primary care and clinical medicine (for both animal and human healthcare) are involved to some extent in the development of antimicrobial resistance and the solutions as well. Globalisation was also very important i.e. when importing food grown in a country with higher resistance levels, there is the risk of importing those to your country. In addition, international travel and medical tourism were also drivers, as people traveling for treatment overseas often come back with diseases that are difficult to treat. The final driver was environmental contamination with antibiotics, which is a particular problem in developing countries that manufacture pharmaceuticals.

MROs can arise anywhere where antibiotics are used and are more likely to develop when antibiotics are misused or overused. Compared to many other countries, Australia has stronger rules in place to prevent the misuse and overuse of antibiotics in humans and in animals.

In addressing the impact on primary care Dr Armstrong reported that General Practitioners prescribed nearly 75% of all antibiotics in clinical medicine in Australia. This was driven in part by pressure from patients who often overestimate the benefits of antibiotics and underestimate their harm.

He stated an important aspect of the debate was also within clinical medicine. Clinicians in hospitals as well as general practitioners focus on the patient and not the population. The biggest users of antibiotics in hospital are the intensive care specialists, surgical wards – prophylaxis and treatment post-surgical infections and, other areas of the hospitals where clinicians are treating patients who are immunosuppressed.

In order to address what should be done Dr Armstrong offered two high level solutions: to prevent antimicrobial resistance from developing in the first place and/or determining how to manage MROs when they do arise. Strategies for prevention included good infection control practices, vaccines against bacteria and sanitation by making sure our cleaning regimens in hospitals are up to standard. There must also be surveillance systems to determine the pressure points and guidelines that provide advice on appropriate antibiotic use. Screening programs must also be in place and clinicians should have the ability to screen patients who have been hospitalised within Australia or abroad. Importantly, there must be Antimicrobial stewardship with the prescriber closely adhering to the five 'R's' of drug administration: the right patient, the right drug, the right dose, the right route, and the right time. Lastly, narrow spectrum antibiotics should be used rather than broad spectrum when possible to effectively and accurately target specific organisms.

He emphasised the need for greater community awareness about antibiotics and to ensure there is inclusion of both the animal sector and environmental health sectors in order to take a 'One health' approach towards developing a national strategy.

Dr Armstrong shared some activities to mitigate AMR at an international, national and local level. International strategies reported on included: WHOs Global Action Plan and in 2014 President Obama signed an executive order to implement the recommendations proposed in a report [105] by the President's Council of Advisors on Science and Technology(PCAST) which outlines strategies to stream-line clinical trials and speed up the research and development of new antibiotics.

Nationally, there is a strategy focused on a 'One health' approach. There are also C*ritical Antimicrobial Resistance (*CAR) alerts which are about to come into place whereby all laboratories report centrally to the federal government whenever they get certain types of MROs with dissemination of that information right across the country. Finally, there are guidelines for Carbapenemase-producing Enterobacteriaceae (CPE).

At the State level there is the WA Multi-resistant Organism Expert Advisory Committee (WAMRO), The Australian Collaborating Centre for Enterococcus and Staphylococcus (ACCESS) typing and research, Gram negative reference laboratory, State-wide ICP IT system and CPE/VRE/MRSA guidelines.

In concluding his talk Dr Armstrong stated the origins of AMR are complex as are the solutions. We need to encompass all groups (health, trade, agriculture, veterinary medicine, environment, tourism and customs). The science is in we know that if we use less antibiotics or use them better there will be improvement. There is political will building around the world and nationally and we have many solutions. He stated that the focus for debate would be on AB stewardship and infection prevention and control.

Mr Bessen thanked Dr Armstrong for setting the scene for the debate. He introduced Dr David Speers, Infectious Disease Physician, Head of Microbiology at QEII PathWest Laboratory Medicine, Sir Charles Gairdner Hospital who offered a WA perspective on Infection control. He opened with this statement "every patient has a right to come into our healthcare facilities, be treated and leave without acquiring uninvited guests; be it influenza or resistant bacteria".

Dr Speers stated the issue around antimicrobial resistance is that resistance per say does not harm a patient rather it is the virulence factors of the bacteria that harm the patient. The resistance is what affects the antimicrobial prescribing such that when patients come into hospital sick and septic they are initially provided antibiotics and the more resistance they have in the bacterial population the less likely the correct antibiotic will be given.

In identifying how to address the spread of antibiotic resistance he emphasised the need for a multi-pronged approach combing a range of strategies. There are two arms consisting of antimicrobial management or stewardship programs that have been developed in response to the need to reduce unnecessary and inappropriate antibiotic use; and infection prevention and control. An AMS program alone is not sufficient to control resistance. To be effective a program needs to be established in conjunction with a comprehensive infection prevention and control program that includes hand hygiene, standard transmission based precautions including cleaning and disinfection.

He stated the focus of his talk would be to speak to infection prevention and control with Dr Robinson addressing antimicrobial stewardship. In doing so he highlighted prevention as the key word when it comes to this area. There is a need to concentrate on prevention because control is actually after the fact and we need to be proactive not reactive in this situation.

Infection prevention is not a single program, it is multi-headed and involves the following elements: training (recorded); standard precautions; immunisation/vaccination; hand/respiratory hygiene; personal protective equipment; safe use of sharps; cleaning and disinfection; and waste management. He stated that you must address all aspects to be successful.

For infection prevention to work it has to be part of standard practice. You have to have governance over the appropriate processes and protocols because without protocols in place healthcare workers won't know what to do. Dr Speers stated that hospital infection prevention is not just the job done by infection control nurses when there is a problem. It should be every healthcare workers responsibility and should be written into each and every process the hospital goes through until it becomes second nature. Only then, he stated, will it become part of the culture of running a hospital. Staff must know how to prevent infections and be aware of the importance of prevention. This involves an education and awareness program for healthcare workers. Funding must be adequate because without it you can't supply the monitoring and auditing that is needed as part of your prevention program.

Dr Speers stated prevention is about understanding the modes of transmission as well as understanding the epidemiology. A superbug can only go from one patient to another by physical contact with the bacteria. That is, from one patient to another on the hands of the healthcare worker; on a piece of contaminated equipment that has been shared between two patients; or from the patient contacting an already contaminated environment or surface. He stated that superbug transmission can be different depending on the organism. For example, MRSA is predominately a skin organism whereas the carbapenem organism, Extended spectrum beta-lactamase (ESBL) and Vancomycin Resistant Enterococci (VRE) are stool pathogens in patients so it is transmitted through faecal contamination.

The importance of building in precautions to stop the three routes of transmission in each and every patient encounter was stressed. This will stop the transmission of particular multi-resistant organisms but will also stop the transmission of all the other ones at the same time. Therefore, it becomes less important what contamination the patient actually has.

Dr Speers emphasised the point that prevention is also about understanding the epidemiology and this is often where it can get a bit more controversial. He described bugs as either endemic or exotic. For a bug that is endemic (within the WA population and regularly encountered), there is no easily identifiable risk factor to screen, so the risk factor of any one person being colonised by one of these resistant bacteria is higher because it is endemic in the population. Therefore, the infection prevention approach is to concentrate on universal precaution that should be carried out on each encounter with every patient. If this type of screening is not done then it will be widespread, more costly, and will overwhelm resources for example the availability of single rooms.

For exotic superbugs (not regularly encountered in the WA population) such as certain CPE like the New Delhi metallo-beta-lactamase (NDM strains), these have a more easily identifiable source. You can identify a risk group and hone your screening to that risk group which makes it a much more efficient method of looking for the patients at increased risk. You can then concentrate screening and use barrier precautions around these patients.

Dr Speers shared data on what he termed the most challenging multi-resistant organisms (MROs). These included: Methicillin-resistant Staphylococcus aureus (MRSA), Vancomycin Resistant Enterococci (VRE) as well as multi-drug resistant gram negative organisms such as: Carbapenemase-producing Enterobacteriaceae (CPE). With regard to MRSA figures for the State there are two types of strains circulating in WA: the epidemic potential strains and the community strains. He reported we are doing a good job despite the ever increasing amount of MRSA in the WA population. We are controlling the healthcare associated MRSA and according to the Healthcare Associated Infection Surveillance Western Australia (HISWA) MRSA data from 2005 onwards; MRSA in WA has not changed much despite an increase in the community.

He reported, with regard to Vancomycin Resistant Enterococci (VRE) there is a very different picture. Dr Speers stated, in his opinion, over the last 5 years VRE is endemic in WA and the type of VRE is changing from a van A to a van B type of resistant mechanism. The actual number of VRE infections is only a few percentage of the actual number of colonisations. Data from Sir Charles Gairdner Hospital (SCGH) between 2010-2015 on the major clones revealed the different strains of VRE. There is not one clone that inhabits, rather a succession of waves of different types of VRE. Dr Speers reported often one goes away only for another to replace it.

Antimicrobial Resistance Surveillance data in Europe (2013) indicated that in some regions up to 50% of their strains are now resistant. The reason this is important for CPE is that when you have a serious ESBL infection the only reliable treatment is antibiotics that are the carbapenems. The ESBLs are sweeping the world and driving carbapenem use around the world and as you would expect following on from that is the rise of CPE.

In describing where the risk in WA is for CPE he stated that most CPE detections are our endemic IMP CPE which show less epidemic potential. He stated that hospitals have “border security” in place whereby all patients are asked if they have been in a hospital outside of WA in the last 12 months. If so, they are put on contact precaution, in a room and screened with a rectal swab. He cautioned that hospital screening will not capture community introductions and with international travel everywhere this is a problem. Evidence shows that of the many people who travel to the subcontinent more than half come back with culture in their bowel just by travelling. In other words you come back with the flora of the country you visited. Community introductions are also most likely to be detected from urinary tract infections (UTIs) of elderly women who reside in Residential Care Facilities (RCFs).

Dr Speers shared his ‘wish list’ for what needed to be done to prevent the acquisition of superbugs. He emphasised the need for: continued improvement of hand hygiene; to mandate technique training and competency; and the need to mandate the disinfection/cleaning protocols with regard to shared equipment. He stressed the importance of investment in environmental cleaning, calling it the poor cousin that is often ignored and poorly resourced. He also called for the need to promote education to make infection prevention part of every healthcare workers practice. With regard to controlling superbug outbreaks he stated there is the need for a rollout of a state-wide budget for approved infection control and antimicrobial stewardship; there is the need for an IT solution for surveillance and reporting; and there is the need for investment in molecular typing (whole genome sequencing) of organisms.

He closed stating, there is a clear outline and evidence of what needs to be done, and we must do it!

Following on from Dr Speers was A/Professor Owen Robinson, Infectious Disease Consultant, Royal Perth Hospital and Fiona Stanley Hospital who provided an overview of Antimicrobial Stewardship (AMS).

He stated that AMS involved a systemic approach to optimising the use of antimicrobials with the aims to: reduce inappropriate antimicrobial use, improve patient outcomes and reduce adverse effects of antibiotic use and/or consequences of antimicrobial use including resistance, toxicity and unnecessary costs.

Prof Robinson described the front end of AMS and the many factors that drive it, starting with collecting the right specimen from the patients, processing of those specimens and reporting of results. It also includes other factors such as patient and consumer expectations. He stated, there are other factors that drive prescribing such as the drug formulary with which we can restrict drug availability and there are guidelines which provide rational prescribing. Evidence based medicine and doctor's knowledge and habits can impact a decision and this can vary across sites and country. Finally, hard core knowledge will also influence choice.

Dr Robinson stated that to influence this, education is the key. The teaching of microbiology at the university level had been diminished, leading to indecision at the coalface on how and what to do with swabs. This directly impacted on results. Education of the public is also required and he reported there is an Antibiotic Awareness Week aimed at educating and influencing consumers however, more must be done.

In describing the back end approaches to stewardship he said it comes down to reviewing antibiotics that are prescribed in a hospital. He outlined the current process for restricted antibiotics and shared the results of a post prescription review. The review looked at between 750-800 cases in SCGH and 1200 in Fiona Stanley Hospital (FSH). He stated there are high acceptance rates for patients that we review and, advise on dose, adjusted dose due to renal failure, switching from IV to oral and sometimes simply suggesting that antibiotics be stopped. He reported acceptance rate of between 85-90% with only one complaint and that was in Royal Perth Hospital (RPH) in 2005.

He reported there is measurement at the national level via the National Antimicrobial Utilisation Program (NAUPS). The data collected is on specific antibiotics per principal referral hospital and based on usage rate (DDD per 1000 OBDs). This requires that we see all patients once a year, capture data on every patient who is on antibiotics, report on the length of time, what type, appropriate/not appropriate (determined by whether it follows the guidelines) and if not do we consider this as a suitable alternative. The results indicate that in all, ¼ of all antibiotic prescribing is deemed inappropriate after review shared extensive data.

Stewardship he explained is pretty well accepted and WA is lucky to have pioneers in this space so it is now very much a part of our culture. However, we can and must do better. For instance, there are limitations of the current system. We know that only ½ of the restricted antibiotics are actually captured by our current system and therefore not reviewed. Documentation of antibiotics in our hospitals is very poor. Often there is no planned duration of use and review dates are often missing. Finally, data capture is not precise and time consuming.

Dr Robinson provided his view for the future highlighting the need for an electronic medicine management system (EMMS). The system would allow for: better documentation of indication approval; linkage to appropriate guidelines; and the ability to check for drug interactions; and checking for bug/drug mismatches and drug allergies. By using the patient identifier, AMS could be provided across the state and pharmacists would have greater control of stock lists leading to less wastage.

He closed stating we can and should do better. We need to address this as the benefits are plentiful and the time to act is now!

Bevan thanked Dr Robinson for providing a comprehensive overview on the importance and benefits of stewardship. He also thanked all presenters for sharing their perspectives and providing senators with a comprehensive overview of the topic and foundation for debate.

Presentations from the day can be found on the Clinical Senate website:

http://ww2.health.wa.gov.au/Improving-WA-Health/Clinical-Senate-of-Western-Australia/Clinical-Senate-debates-and-publications/2016-Clinical-Senate-debates

Following the morning break, Senators were provided with a video presentation from Professor Lindsay Grayson and then engaged in an open plenary debate.

3. Plenary Debate

3.1 Superbugs - Improving outcomes in WA hospitals

Facilitator	➢ Mr Bevan Bessen
Presenters/ Expert Witnesses	➢ Dr Paul Armstrong ➢ Dr David Speers ➢ Dr Owen Robinson ➢ Professor Lindsay Grayson ➢ Dr Christopher Etherton-Beer ➢ Dr Andrew Robinson ➢ Ms Rebecca McCann ➢ Dr James Flexman ➢ Ms Dallas Widmer ➢ Ms Lisa Nicolaou ➢ Ms Mary Willimann ➢ Dr Susan Benson ➢ Dr Paul Ingram ➢ Mr Jason Seet ➢ Dr David McGechie ➢ Dr Tim Inglis ➢ Ms Ann Whitfield

Mr Bessen opened the plenary session “Superbugs – Improving outcomes in WA hospitals”. The session commenced with a video presentation “New initiatives that seem to work” by Professor Lindsay Grayson, Director, Infectious Diseases and Microbiology Department at Austin Health, Professor of Medicine at the University of Melbourne, Professor in the Department of Epidemiology and Preventative Medicine at Monash University.

Prof Grayson emphasized the importance of hand hygiene. He provided statistics around progress made with regard to hand hygiene in Australian hospitals. He reported that (2010-2015) of the 890 groups involved (65% public sites and 35% private sites) there had been an aggregate national compliance of 83% with steady improvement in compliance amongst medical practitioners (71.2%).

He stated his talk would offer a different way of thinking on controlling superbugs.
In the past we would have discussed limiting the emergence of new multi-drug resistant pathogens and secondly, restricting the transmission of existing strains. However, it is so bad now that we have had to reverse our thinking and in fact, think differently in order to reduce the resistance of the strains while at the same time controlling new strains.

Professor Grayson then shared three initiatives implemented at Austin Health with good results: standards for IV devices (both peripheral IV cannulae and central venous catheters); hospital cleaning standards; and the Good Antimicrobial Prescribing Program (GAPP).

The first initiative outlined was Standards for insertion and removal of IV devices, (both peripheral IV cannulae and central venous catheters).

He stated there are increased rates of Staphylococcus aureus when lines are inserted for greater than 72 hours. In order to address this increase, all protocols for insertion and

maintenance of IV lines were reviewed. It was found that these protocols varied from ward to ward and there were at least 6 different protocols across their site. Also found were many different dressing trays being used and most clinicians using non-sterile gloves. Evidence demonstrated peripheral lines were the number one cause of “Austin associated bacteremia” reporting 2 cases per month. Equally important was the estimated cost of each case which was approximately $25,000
(260-325k per year). This was in addition to the cost of hospitalization and cost to the patient in terms of pain and suffering.

They responded by developing a standardised “Austin Heath IV insertion method” that included (parts insertion and maintenance) a standardised insertion pack, the purchasing of sterile gloves and a PIVC policy. They also established a formal IV credentialing program that included a training video and one on one training which involved all doctors below registrars and all nurses (ED, radiology etc.). Austin Health maintained a credentialed list and commenced a formal program which meant that staff could not insert an IV if not trained to do so. The final component was to imbed PIVC credentialing into all future orientation.

With regard to Peripheral IV cannulae maintenance standards the following was developed:

1. A new nurse hospital standard – mandatory for all staff to follow.
2. All IV lines inserted by ambulance crews would be removed in ED or on admission with recognition that the setting (ambulance) does not allow for aseptic technique.
3. There was a rule if there was no sticker, a nurse could not remove the IV without permission.
4. All IVs would be removed at 72 hours with no permission necessary. The only exception being paediatrics.

Professor Grayson reported there were audits against this maintenance standard. They developed the PIVC credentialing program which targeted staff regularly inserting PIVCs and provided training, on line learning packages, formal observation of PIVC insertion and by August 2012 only healthcare workers credentialed in PIVC-IMP were permitted to insert PIVCs at Austin Health. He reported on improvements made both pre and post intervention rates which demonstrated marked improvement resulting in 13 fewer patient-episodes of PIVC associated Staphylococcus aureus bacteraemia (SABs).

In conclusion, he stated, the “Austin Heath IV insertion method” reduced SABs and was cost effective (costs associated equaled approximately 1 SAB). He suggested it was the first step towards a national standard for IV insertion and maintenance. He affirmed the need for national standards and purchasing protocols.

Prof Grayson touched briefly on issues associated with central lines and stated the CVC policy resulted in new insertion and maintenance standards. The audits revealed marked improvement in insertion records, dressing and CVC care as well as a significant reduction in CVC associated infections.

The second initiative was ‘Improved Hospital Cleaning Standards”. He emphasized that although some of this is related to hand hygiene there has been a decline over the past 40 years in making good hospital cleaning a priority. Hospital cleaners were originally seen as part of the team and sat on key committees. Prof Grayson reported no current national cleaning standards and cleaners are one of the lowest paid and least educated workers. They get very little training and follow no standardized cleaning practices. There were also other factors such as environmental contamination (MRSA, VRE etc.) found on ward weighing chairs, lifting equipment and BP cuffs as well as patient call bells.

In order to combat this Austin Health (2009-2010) introduced a multimodal VRE intervention to manage the entire hospital against VRE contamination. First, they implemented universal

routine daily bleach cleaning (bleach 1000ppm + detergent) and single step cleaning. Next, they employed cleaning supervisors who were given formal training and charged with establishing performance benchmarks. Lastly, they modified the personal protective equipment dress code for VRE, using sleeveless aprons with an emphasis on alcohol-based hand rub and no gloves except for procedures. Results from the multimodal bleach cleaning intervention were a 37.4% reduction rate of new VRE colonisation and reduced VRE inpatient acquisition. With regard to VRE disease there was a 70.8% reduction in VRE bacteraemia.

The third initiative shared by Prof Grayson was on the Good Antimicrobial Prescribing Program (GAPP).

Prof Grayson reported that like many hospitals, at Austin Health there are many restricted antibiotics. They are restricted because they are high cost in terms of resistance generating potential, purchase price, or risk of complications. Often there is an approval number required to commence use with the need for approval to commence use gained via the Infectious Disease (ID) unit, computer approval system or the Infectious Diseases Electronic Antibiotic Advice and Approval System (IDEA^{3}S). In reviewing these they identified that the ID registrar took between15-20 calls per day with IDEA^{3}S getting between 30-40 approvals per day. The starting rules for GAPP were that all inpatient orders for restricted antimicrobials required ID approval via the ID registrar (available 24/7) or IDEA^{3}S and the approval number code would include the duration of approval. This assisted with issues related to enforcement, gaming and staff bullying.

Changes with GAPP at Austin Health include that nursing and pharmacy cannot administer or dispense without an ID approval number documented on the chart. There is a new nurse standard and all units and clinical areas are included with no exception. They removed all restricted antibiotics from imprest (except ED and ICU) and in the new version of IDEA^{3}S there is 24-hour interim approval for non-standard indications, development of agreed unit protocols for greater consistency and time saving short cuts for cooperative units.

He reported that the outcomes of the GAPP initiative put the onus for getting approval back onto the prescriber which is consistent with a PBS Authority Script.

Prof Grayson summarized the prioritization and implementation of the three initiatives providing lead times, level of impact and associated costs.

Following on from Prof Grayson's talk Mr Bessen welcomed the expert witnesses and outlined the rules for debate. He stated the aim of the plenary session was to have further discussion around how to improve outcomes in WA hospitals and in order to inform the afternoon workshops on improving AB stewardship and preventing and controlling AB resistance in WA hospitals.

In the facilitated plenary session that followed, senators discussed the issues they saw in their areas of practice, current infection prevention and control strategies and examples of change across the health services. They also heard from experts in the field.

The key messages emerging from the plenary were that there is often pressure to prescribe antibiotics and prescribing behaviour is not always evidence-based. Furthermore there is specific pressure on clinicians to prescribe in remote Aboriginal communities. Behavioural change is required at a personal, institutional and system level. Clinicians must lead the change at the institutional level.

Within our hospitals, clinicians (particularly consultants) must lead change in hand hygiene and aseptic technique. Decisions regarding AMS are often made after the decision to give the antibiotic therefore, more emphasis must be placed on establishing an early diagnosis to guide prescribing. Inappropriate hospital prescribing needs to be targeted through better surveillance,

monitoring and feedback. Senators also agreed that more emphasis needed to be placed on diagnosis skills, improving the collection of the correct diagnostic specimens (including blood cultures) leading to a reduction in unnecessary testing.

Senators raised the need for better tools to rapidly detect antibiotic resistance. There is the need for better training on interpreting tests and for earlier identification of patients with MROs who require isolation. There is a need to modify physician and patient expectations for antibiotic prescribing through better point-of-care testing.

It is critical that we partner with consumers and the community to manage expectations and to better educate all with regard to the benefits and/or adverse effects of antibiotics. Culture change must be across the spectrum.

Finally, Senators were challenged to consider health economics as a motivator for change. How could we incentivise good behaviour? Senators agreed that with new governance there were opportunities to promote AMS and address the clinical economics to inform decisions.

At the conclusion of the plenary session Mr Bessen confirmed that the key themes emerging from the full morning session had been captured using mind map software and would inform senators in the afternoon workshops (Appendix 3). The Map was displayed in each of the workshops.

All participants then broke for lunch.

Following the lunch break Senators participated in their choice of the following two workshops: Improving AB stewardship and preventing and controlling AB resistance in WA Hospitals.

What follows are the workshop notes and final senate recommendations.

4. Afternoon Workshop One

4.1 Improving AB Stewardship in WA Health.

Facilitator	Mr Bevan Bessen
Executive Committee Member(s)	Ms Tanya Basile Ms Marani Hutton Ms Nerida Croker Dr Dan Xu
Expert Witnesses	Prof Tarun Weeramanthri Dr Owen Robinson
Support	Ms Kimberly Olson

Mr Bevan Bessen opened the workshop stating the focus was to consider how to improve AB stewardship in WA Health.

Participants formed five groups and were provided with the mind map from the morning session. They were directed to discuss what might be missing. All groups brought their issues forward and consensus was reached on five themes. Participants were encouraged to select and move to a theme of their choice in order to develop recommendations. The themes brought forward to the recommendation forming phase were:

1. Over prescribing outside Department of Health hospitals
2. Delays to diagnosis
3. Inappropriate hospital prescribing
4. Undergraduate and staff training on stewardship and infection control
5. Governance (need to adapt to new local accountability structures)

At the end of the workshop, each group presented their recommendations. All recommendations were voted on with the top five recommendations were taken to the final session.

A summary of the group discussions during the recommendation forming stage is provided below.

Group 1- Over prescribing outside of Department of Health hospitals

Participants focused on the issue and impact of over prescribing outside of WA hospitals.

They identified the need to consider specific research targeted at the most effective ways of modifying physician and patient expectations for antibiotic prescribing. They proposed there be research/funding for specimen collection and improved point of care testing to ensure better specificity/correct diagnosis.

The key recommendation from this group called on WA Health to coordinate with private and public pathology services as well as health service providers for example Aboriginal Medical Services (AMS), Residential Care Facilities (RCF), and General Practitioners (GPs) towards the provision of associated surveillance including monitoring and feedback. This they agreed should result in outcomes for regional/area specific guidelines.

Group 2 – Delays to diagnosis

Senators considered the many factors impacting on delays to diagnosis.

They agreed the need for there to be more emphasis placed on diagnostic skills.

Senators called for a process for monitoring and evaluating the quality of specimens collected, with routine feedback to staff/wards. They determined the need for monitoring of areas/staff with high numbers of contaminated specimens and called for staff education and training.

They recommended WA Health audit the implementation of the Sepsis Pathway (sepsis 6) and for the compliance level to become a reportable KPI at the local, regional and state level.

Group 3 – Inappropriate hospital prescribing

Participants discussed inappropriate hospital prescribing. They outlined the benefits of an electronic prescribing system and the need for a common statewide IV policy.

Drawing on the evidence and success at Austin Health senators recommended that WA Health should implement an Electronic Prescribing System that: is statewide; used to capture prescribing data for critical appraisal and surveillance; used evidence based clinical decision tree to improve compliance with therapeutic guidelines and importantly, is cost effective in terms of savings through better patient outcomes i.e. GAPP used at Austin Health.

Also recommended was the need for WA Health to include the results of antibiotic usage audits as a dashboard KPI for clinical governance. These results should show comparative data between hospitals and be made publicly available.

Group 4 – Poor undergraduate and staff training

Senators highlighted the importance of hand hygiene and considered the issue of poor training of both undergraduate and healthcare staff on stewardship and infection control.

Agreement was reached on the need to get back to basics for preventing infections. They recommended that WA Health develop and promote a statewide framework for standardised training and education to ensure anti-microbial stewardship is everyone's business. Proposed was a framework that must include: a minimum set of competencies; orientation for all staff; mandatory training and an implementation plan that included partnerships with universities.

A total of 12 recommendations were developed by participants in workshop one. An exception was made with the top 6 recommendations taken to the final session.

5. Afternoon Workshop Two

5.1 Preventing and Controlling AB Resistance in WA Hospitals.

Facilitator	Mr Will Bessen
Executive Committee Members	Prof Julie Quinlivan Dr Sharon Nowrojee Adj Assoc Prof Kim Gibson
Expert Witnesses	Dr Paul Armstrong Dr David Speers
Support	Ms Barbara O'Neill

Mr Will Bessen facilitated workshop two. He welcomed participants and stated the focus of the workshop as to consider preventing and controlling AB resistance in WA hospitals.

He outlined the process as to discuss the issue streams brought forward via the mind map, to unpack the issues, identify any additional issues, group them into themes and finally, develop recommendations. All recommendations would be voted on, with the top five brought forward to the final session.

The full group worked to consider the main themes. They proposed an additional theme around data collection and surveillance and consensus was reached on the following six for development of recommendations:

1. Behaviour change in hospitals
2. Culture change in the wider community
3. Addressing patient expectations for antibiotics
4. Behaviour change in hospitals
5. Lack of consistent cleaning standards
6. Communities with specific needs
7. Data collection and surveillance.

Group 1- Behaviour change in hospitals

Participants unpacked the issues related to the need for behaviour change in hospitals. They acknowledged clinicians must lead the change particularly at the consultant level. Senators recommended that Area Health Services implement senior clinical led hand hygiene compliance initiatives. Some examples included: bare below the elbows; consultant auditing; clinical champions and work practice reviews.

They also called for the need for Health Services to ensure implementation of the operational directive on IV cannulation that is consistent across all sites through monitoring and reporting back to WA Health.

Senators identified that in order to improve antibiotic prescribing rates, that WA Health must provide targeted education and decision support tools for all senior clinicians(as decision makers).

Group 2-

Participants in this group considered the following two themes:

- Culture change in the wider community
- Addressing patient expectations for Antibiotics

Senators considered cultural change in the wider community and addressing patient experience/expectations with regard to antibiotics. They agreed the issue could be addressed by educating consumers.

They also discussed what the message(s) should be and how as clinicians they could ensure appropriate time to listen and explain care to the patient so they are engaged in their own care.

The key recommendation from this group addressed the need for a communication and health promotion strategy. They emphasised the need for it to involve consumers and the community. The strategy should also address the needs of specific groups such as people living in residential aged care facilities, Aboriginals, prisoners and individuals at risk for transitioning in and out of hospital.

Group 3- Lack of consistent cleaning standards

Drawing on the themes from the morning session senators discussed issues related to: the traffic flow of patients in our hospitals; the impact of infrastructure i.e. reintroduction of toilet seats; higher level of education for cleaning staff; and the need to include them on key infection control committees.

In recommending change senators stated the importance of developing standards for cleaning across WA Health. They called for evidenced based procedures and identified the need to lift the standards through the development of short training courses through the vocational sector. Also emphasised was the need to raise the profile of cleaning in facilities by having supervisors with minimal use of casual/agency staff. Cleaning staff must be part of the team. Finally, they agreed there needed to be audits for compliance and these should be presented to Health Service Boards.

Participants also recommended better training and education for clinicians. They identified WA Health must ensure 'clinicians' involved in invasive laboratory procedures demonstrate competency in aseptic technique. A broad approach was suggested requiring all new graduates be able to demonstrate competency; there be provision of hospital based training for existing staff; and that there be feedback of a 'relevant' indicator for staff that is publicly displayed.

Group 4 – Communities with specific needs

Participants in this group addressed the specific theme that arose on the need to consider remote aboriginal communities as well as aged care. It was identified that there is increased pressure on healthcare practitioners in remote areas due to the 'must use Antibiotics' policy for at risk Aboriginal patients. They identified that there are guidelines in place but prescribing practices vary.

Factored into their discussions were the poor living conditions and the transient nature of the communities making follow up very difficult. There is also a transient workforce (FIFO) and remote nursing posts and doctors who are often new to the health system (migrants) and inexperienced.

They agreed when developing policy documents WA Health should work collaboratively with other service providers whose clients access health services (i.e. Aged, prisons, migrants, aboriginal, AMSs). Furthermore, provisions should be stated taking into account the needs of these population groups.

A key recommendation focussed on the benefits of education at a community level with regard to best practice. There should be collaboration and community engagement for migrant, homeless and low socioeconomic groups.

Group 5 – Data collection, surveillance and reporting

Senators considered the importance of data collection and surveillance and reporting with regard to preventing and controlling AB resistance in hospitals.

Highlighted in their discussions were the various platforms and often paper based systems across WA Health. They identified the importance of linking up the data in order to track patients and detect outbreaks in order to inform a response.

They recommended WA Health incorporate into health service level agreements that the Health Service Boards have the responsibility and commitment to provide recurrent funding for, support the implementation of, and be responsible for maintenance of the Infection Control Automated Surveillance technology (AST) System.

A total of 11 recommendations were developed by participants in workshop two. Participants agreed to merge one recommendation with the top 5 recommendations taken to the final session.

In the final session, senators were presented with six recommendations from workshop one and five recommendations from workshop two. A total of eleven recommendations were voted on and ranked forming the final prioritised recommendations from the day. Upon review of all recommendation by the executive sponsors the clinical senate ratified the top nine recommendations.

6. Final Session

In the final session senators reviewed each of the recommendations presented from both workshops. A total of eleven recommendations were therefore put forward from the debate for final voting. Recommendations have been ranked in order of vote by the full Senate.

In conclusion, the Clinical Senate recommendations provide a way forward in order to prevent and control superbugs and support antimicrobial stewardship programs. Changes are critical and there is opportunity to make these changes within the devolved governance structure and through the Health Service Boards.

The Clinical Senate's nine recommendations will provide the Director General and the Health Service Boards with important strategies in ensuring the best way forward to making changes that are needed to address this issue.

7. Clinical Senate Recommendations

Superbugs

1. That WA Health implement an Electronic Prescribing System (EPS) that may be used across all health facilities and can capture prescribing data so it can be benchmarked and used to monitor compliance with therapeutic guidelines.

2. The Clinical Senate recommends development of a statewide policy of facility cleaning standards for WA Health.

   These will include:

   - standardised cleaning procedures that are evidenced-base and standardise used (detergent, bleach, water). WACHS have already done this body of work and it should be examined for applicability to be adapted statewide
   - encouragement for the vocational sector to develop short training courses for cleaning, which could be included as a desirable criterion in employment for cleaners
   - raising the profile of cleaning in facilities by having supervisors, minimum language requirements for cleaners and minimising use of casual/agency staff
   - a requirement for feedback on cleaning outcomes and environmental monitoring to cleaning staff
   - stipulation that audits for compliance with above processes are undertaken, which would be presented to heath boards.

3. That an Antimicrobial Stewardship Program is embedded within a safety and quality framework, that feeds agreed indicators to area Health Service Boards in addition to a central state committee.

4. WA Health should provide recurrent funding for, the Infection Control Automated Surveillance Technology (AST) system, support its implementation, and be responsible for its maintenance.

5. WA Health to develop, area health services to adopt, and hospital executive to promote a statewide framework for standardised training and education to ensure antimicrobial stewardship is everyone's business.

   Essential to this is the need to:

   - involve key end-users in program (re)design to ensure education is fit for purpose
   - target poor-performing disciplines and clinical areas
   - include prevention education i.e. IV cannulation, aseptic technique and hand hygiene.

Recommendations continued on next page

6. WA Health mandates each hospital undertake periodic antibiotic usage audits (e.g. National Antibiotic Prescribing Survey (NAPS) and results should be fed to area health services, boards and quality and safety committees for review. Comparative data for similar hospitals should be made publicly available after a three year implementation process.

7. WA Health must write to non-hospital health system managers (e.g. Aboriginal medical services, WA Primary Health Alliance (WAPHA), residential aged care facilities, General Practitioners) and ask them to ensure they have guidelines for antibiotic stewardship that includes consideration of surveillance activities and ability to feedback to their clinicians.

8. WA Health ensures all 'clinicians' involved in invasive procedures demonstrate competence in aseptic technique. This could be facilitated by the Director General of Health writing to all WA University Vice Chancellors requesting them to ensure students in healthcare-related disciplines are assessed for competency in the practical demonstration of aseptic techniques. Within healthcare facilities, this could be facilitated through staff training.

9. That a communication and health promotion strategy to promote infection prevention and control and appropriate antibiotic usage be developed and implemented by consumer agencies and key WA Health experts. The strategy should use all contemporary messaging channels, and align with the National Safety and Quality Health Service Standards (NSQHSS). It should include elements to address vulnerable groups such as people living in residential aged care facilities, Aboriginals, prisoners and individuals at risk for transitioning in and out of hospital.

Appendix 1: Program

Superbugs

Friday 4 March 2016
Banquet Hall South
The University Club of Western Australia
Hackett Drive, Crawley, WA

7.45 am	Registration	Tea & coffee

Executive sponsors: **Professor Tarun Weeramanthri, Assistant Director General, Public Health**
Professor Gary Geelhoed, Assistant Director General, Clinical Services and Research

Facilitator: **Mr Bevan Bessen**

8.30am	Welcome to Country	Ms Marie Taylor
8.40am	Welcome and senate update	Professor Julie Quinlivan
8:50am	Director General's response to recommendations	Dr David Russell-Weisz
9:05am	Superbugs: setting the scene	Dr Paul Armstrong
9:25am	Infection control	Dr David Speers
9:40am	AB stewardship	Dr Owen Robinson

9.55 am	Morning tea	Banquet Hall Foyer

10.30am **Introductory video presentation:**
Professor Lindsay Grayson- "New initiatives that seem to work"
Plenary debate:
Superbugs- Improving outcomes in WA hospitals

Additional Expert Witnesses: Dr Christopher Etherton-Beer, Dr Andrew Robertson, Ms Rebecca McCann, Dr James Flexman, Ms Dallas Widmer, Ms Lisa Nicolaou, Ms Mary Willimann, Dr Susan Benson, Dr Paul Ingram, Mr Jason Seet, Dr David McGechie, Dr Tim Inglis and Ms Ann Whitfield.

12.10pm	Lunch	Banquet Hall Foyer

12.55pm **Workshops**

Workshop 1 – Banquet Hall South
Improving AB Stewardship in WA Health

- Facilitator: Mr Bevan Bessen
- Executive Sponsor: Prof Tarun Weeramanthri
- Expert Witness: Dr Owen Robinson

Workshop 2 – Banquet Hall North
Preventing & Controlling AB Resistance in WA Hospitals

- Facilitator: Mr Will Bessen
- Executive Sponsor: Prof Gary Geelhoed
- Expert Witness: Dr Paul Armstrong

2.40pm	Afternoon tea	Banquet Hall Foyer

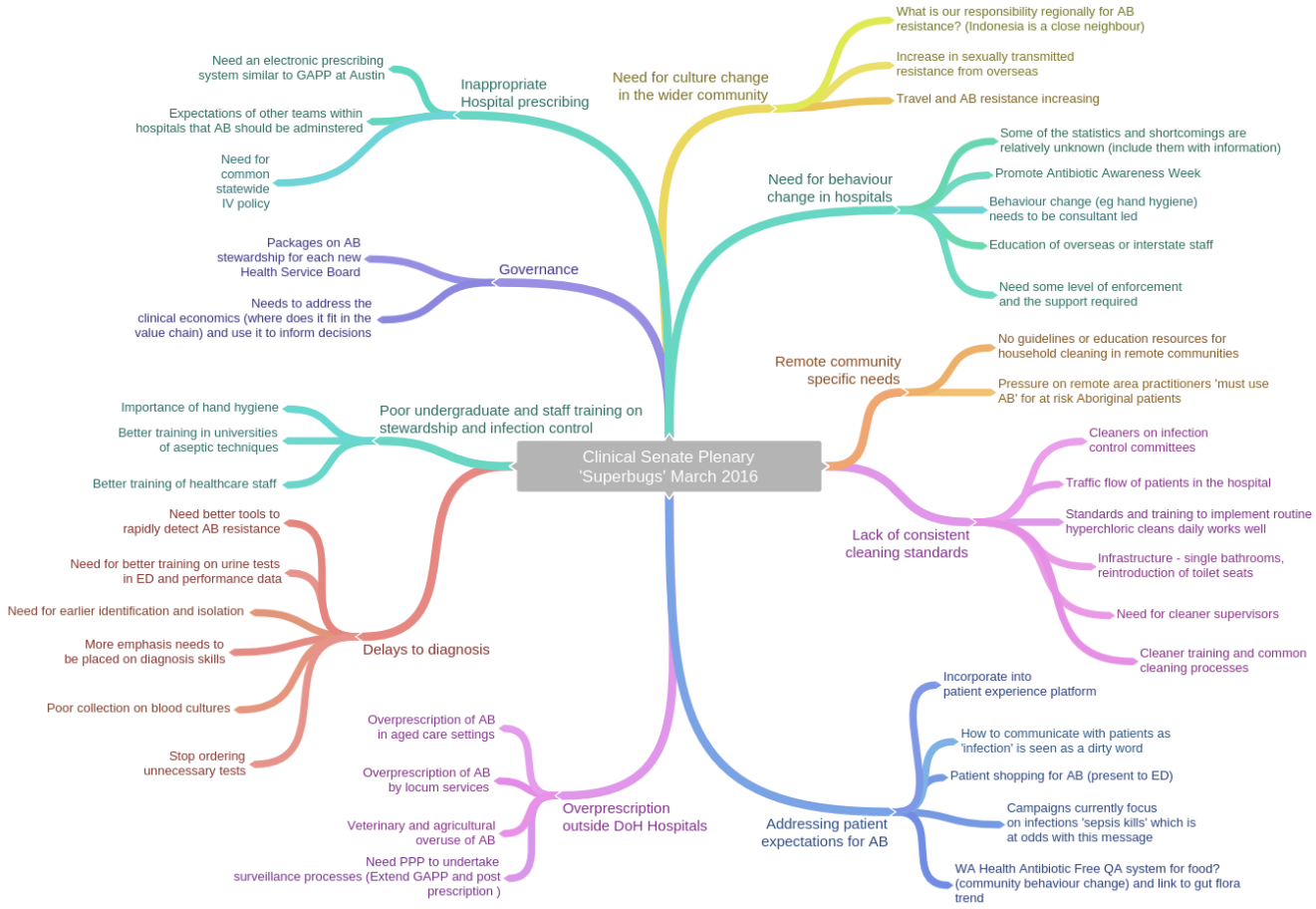
3.00pm **Final session**

3.00pm	Presentation and prioritisation of recommendations	Mr Bevan Bessen
3.20pm	Closing remarks	Prof Tarun Weeramanthri
3.30pm	Close	Prof Julie Quinlivan

Appendix 2: Presenters & Expert Witnesses

- Ms Marie Taylor, Nyungar Elder
- Professor Julie Quinlivan, Chair, Clinical Senate of WA
- Dr David Russell-Weisz, Director General, WA Health
- Dr Paul Armstrong, Director, Communicable Disease Control Directorate, Public Health Division, Department of Health WA
- Dr David Speers, Infectious Disease Physician, Head of Microbiology at QEII PathWest Laboratory Medicine, Sir Charles Gairdner Hospital
- A/Professor Owen Robinson, Infectious Diseases Consultant, Royal Perth Hospital and Fiona Stanley Hospital, PathWest Laboratory Medicine WA
- Professor M. Lindsay Grayson, Infectious Disease & Microbiology Department, Austin Health and Department of Medicine, University of Melbourne, Australia
- Dr Christopher Etherton-Beer, Associate Professor in Geriatric Medicine, the University of Western Australia and Geriatrician and Clinical Pharmacologist at Royal Perth Hospital
- Dr Andrew Robertson, Deputy Chief Health Officer and Director, Disaster Management, Regulation and Planning, WA Health
- Ms Rebecca McCann, Program Manager, Health Care Associated Infection Unit, WA Health
- Dr James Flexman, Head of Department Microbiology & Infectious Diseases, Royal Perth Hospital and Clinical Lead, Infections and Immunology Network
- Ms Dallas Widmer, Clinical Nurse Consultant, Infection Prevention & Control, Princess Margaret Hospital
- Ms Lisa Nicolaou, Clinical Nurse Consultant, Infection Prevention & Control, Womens and Newborn Health Service
- Ms Mary Willimann, Manager, Infection Prevention & Control, St John of God Hospital, Subiaco WA
- Associate Professor Susan Benson, Clinical Microbiologist, Fiona Stanley Hospital and Infectious Diseases Physician and Clinical Academic
- Dr Paul Ingram, Infectious Disease Physician and Clinical Microbiologist, Royal Perth Hospital and Fiona Stanley Hospital
- Mr Jason Seet, Clinical Infectious Diseases and Critical Care Pharmacist, Sir Charles Gairdner Hospital
- Dr David McGechie, Consultant Microbiologist & Director, Infection, Prevention and Management, PathWest Laboratory Medicine, Fiona Stanley and Fremantle Hospitals
- Dr Tim Inglis, Medical Microbiologist, PathWest, QEII Medical Centre
- Ms Ann Whitfield, A/Coordinator, Infection, Prevention and Management, Fiona Stanley Hospital

Appendix 3: Mind Map



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