

Type: Invited Presentation

Final Abstract Number: 23.001

Session: *Antibiotic Stewardship: Different Challenges in Different Countries*

Date: Friday, June 15, 2012

Time: 15:45-17:45

Room: Ballroom A

Singapore

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Singapore is a city-state with mixed public-private healthcare system. Antibiotic stewardship programs (ASPs) in Singapore were initially independently established by individuals in three public hospitals, but are currently being implemented in all eight public hospitals under the Ministry of Health's directive and funding. Most hospitals employ a system of prospective audit and feedback for a variety of broad-spectrum antibiotics, with trained ASP pharmacists auditing the prescriptions and infectious diseases physicians providing clinical input and decisions for complex cases. One hospital - Tan Tock Seng Hospital - had developed a clinician decision support system (CDSS) that has seen considerable local success in improving appropriate antibiotic prescription. CDSS's are now being developed for the other local hospitals. Current challenges include the need for more systematic training of ASP pharmacists and physicians in order to ramp up implementation of ASP across hospitals, sustainability of the ASP movement, and definition of and agreement on key indices for measurement of ASP performance within each hospital.

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Antibiotic stewardship: Different challenges in different countries: Taiwan

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Antimicrobial resistance has become a major health problem worldwide, but marked variations in resistance profiles of bacterial pathogens are found among countries and in different patient settings, especially in Asian countries. In Taiwan, the emerging problem of methicillin-resistant *Staphylococcus aureus* (MRSA), extended-spectrum beta-lactamase (ESBL)-producing, quinolone-resistant, *Klebsiella pneumoniae* carbapenemase (KPC)-producing *Enterobacteriaceae*, and extensively drug-resistant *Pseudomonas aeruginosa* and *Acinetobacter baumannii*, is substantial. The discovery of new drugs active against hospital-acquired XDRGNB infections to prevent a future medical and social catastrophe is ongoing. In the interim, appropriate use of currently available antibiotics (antibiotic stewardship) and strict adherence of adequate infection control policy are crucial. Antimicrobial stew-

ardship program in Taiwan, initiated by the Taiwan Centers for Diseases Control and Prevention (Taiwan CDC) in conjunction with infectious diseases physicians, infectious control experts, and other multidisciplinary experts, includes establishment of national inter-sectoral antimicrobial stewardship task force, implementing antimicrobial resistance management strategies, surveillance of hospital-acquired infections and multidrug-resistant organisms (MDRO) (Taiwan Nosocomial Infection Surveillance System [TNIS]), conducting hospital infection control, enforcement of appropriate regulations and audit of antimicrobial use through hospital accreditation, inspection and national health insurance payment system.

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Antimicrobial stewardship in Japan -Methods of operation and suggested outcomes-

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Antimicrobial stewardship has been defined as "the optimal selection, dosage, and duration of antimicrobial treatment that results in the best clinical outcome for the treatment or prevention of infection, with minimal toxicity to the patient and minimal impact on subsequent resistance. The resistant pathogen such MRSA or multidrug-resistant *Pseudomonas aeruginosa* (MDRP) is a serious problem in Japan. The outbreak of multidrug-resistant *Acinetobacter* spp was reported recently. The number of ESBL producers has been increasing. Thus, antimicrobial stewardship programs (involving physicians, pharmacists other healthcare providers) are increasing in Japan.

The prescription authorization: Most Japanese hospitals adopt the prescription authorization. The antimicrobial steward reviews the antibiotic order for appropriateness at the time it is written. Specific antimicrobials are restricted to use by certain prescribers or units, whereas others must obtain authorization. Each hospital encourages the use of antimicrobials based on each formulary.

Clinical guidelines and treatment algorithms: Japanese society of chemotherapy (JSC) and The Japanese Association for Infectious Diseases (JAID) have published the guideline for the prescriber to make evidence-based antibiotic choices based on local antimicrobial resistance patterns, national guidelines, and relevant clinical factors. They can also provide guidance for de-escalation and appropriate length of treatment.

Education: JSC have established the education program for the proper use of antimicrobials. Many doctors are interested in this program. In some hospitals, the infection control team educate about antimicrobial stewardship in the grand rounds, departmental conferences, house staff teaching.

Pharmacodynamic dose optimization: Pharmacodynamic dose optimization has been promoting by the societies, Japanese government and Pharmaceutical companies. Optimal use of currently available antimicrobials may improve outcomes without increased risk of toxic effects. The PK/PD properties of antimicrobial agents are important to design the dosages. The pharmacists