International Conference on Antimicrobial Stewardship

December 1 - 2, 2013
Main Auditorium
King Fahad Medical City, Riyadh, Saudi Arabia
Welcome Note

Dear Colleagues,

**Ahlan Wasahlan** "welcome"

Welcome to the first international conference on Antimicrobial Stewardship in Riyadh, Saudi Arabia.

It is a privilege to have this significant collaboration between distinguished experts from British Society for Antimicrobial Chemotherapy (BSAC), Gulf cooperation council, as well as prominent local speakers.

Your attendance here reflects your genuine interest and commitment to enhancing, and, in some cases, establishing antimicrobial stewardship initiatives at your institutions. Over the next two days you will acquire a better understanding and awareness of what antimicrobial stewardship is, and its positive impact on your patients, institutions, and societies at large. By listening to the experts in this field, you will be equipped with tools that will help you implement successful programs at your hospitals.

Before concluding the first day, we plan to have a stimulating panel discussion on establishing a roadmap for launching stewardship programs in the gulf region. The second day will be dedicated to Outpatient Parenteral Antimicrobial Therapy (OPAT), and will include highlighting motivating success stories from the national and international experience.

On behalf of the Organizing Committee, I thank you for your participation in this conference and wish you a pleasant stay in Riyadh.

Sincerely,

*Mushira A. Enani, MBBS, FRCPE, FACP, CIC*

Chairperson, Organizing Committee
Organizing Committee

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Co-chairman
Consultant Physician in Infectious Diseases
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British Society for Antimicrobial Chemotherapy

Saudi Society for Medical Microbiology and Infectious Diseases

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Dr. Nezar Bahabri
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Director of Infection Prevention & Control
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Dr. Ahmed Hakawi
Consultant, physician
Infectious Diseases Section
Department of Medicine
Day One

Session 1: Setting the scene

Imad M. Tleyjeh, MD, MSc, FACP, FIDSA
Professor of Medicine & Epidemiology
Consultant, Infectious Diseases
Department of Medicine
King Fahad Medical City

Najwa AlGhamdi, PhD
Director, Pharmacy Services Administration
King Fahad Medical City

Session 2: Implementing Stewardship and Measuring Value

Dr. Kamaldeen Baba
Head, Microbiology Section
Pathology Clinical & Lab Administration
King Fahad Medical City

Dr. Henry Baffoe-Bonnie
Consultant Physician
Infectious Diseases Section
Department of Medicine
King Abdulaziz Medical City
Riyadh City, Kingdom of Saudi Arabia

Session 3: Antimicrobial Stewardship & Infection Prevention and Control

Atef Al Shibl, PhD, MRCPath
Professor of Microbiology
King Saud University

Dr. Amal AlAydaraoos
Pediatric Consultant Infectious Diseases
Deputy Director, Infection Prevention and Control
Prince Sultan Military Medical City
Riyadh, Kingdom of Saudi Arabia

Day Two

Session 4a: OPAT: What, why and how?

Dr. Manaf AlQahtani
Consultant Infectious Diseases, Clinical Microbiologist
Head of Microbiology
Bahrain Defense Force Hospital
Kingdom of Bahrain

Session 4B: OPAT: Let’s do it!

Dr. Ali Omrani
Division of Infectious Diseases
Department of Medicine
Prince Sultan Military Medical City
Riyadh, Kingdom of Saudi Arabia

Prof. Huda Bukharie
President
Saudi Society of Medical Microbiology and Infectious Diseases
Professor of Medicine
University of Dammam
Kingdom of Saudi Arabia
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<td>07:30 – 09:30</td>
<td>Registration</td>
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<tr>
<td>09:30-10:15</td>
<td>Opening Ceremony &amp; Welcome Address</td>
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<td>10:15-10:45</td>
<td>Coffee Break</td>
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**Session 1: Setting the Scene**  
Chair: Dr. Imad Tleyjeh, Consultant Infectious Diseases, KFMC, KSA  
Co-Chair: Dr. Najwa AlGhamdi, Pharmacy Service Administration, KFMC, KSA

<table>
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<th>Time</th>
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| 10:45-11:20  | Stewardship: Plenary - What is it, evidence, impact & experience?  
Prof. Dilip Nathwani, Consultant Infectious Diseases, Dundee, Scotland |
| 11:20-11:40  | Stewardship: Lessons from a global survey  
Mr. Philip Howard, Antimicrobial Pharmacist, Leeds, England |
| 11:40-12:00  | Stewardship: Challenges & opportunities in the gulf region  
Dr. Mushira Enani, Consultant Infectious Diseases, KFMC, KSA |
| 12:00-13:20  | Lunch & Duher Prayer                                                     |

**Session 2: Implementing Stewardship and Measuring Value**  
Chair: Dr. Kamaldeen Baba, Microbiologist, KFMC, SA  
Co-Chair: Dr. Henry Baffoe-Bonnie, Consultant Infectious Diseases, KAMC, KSA

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| 13:20-13:40  | What can we learn from point prevalence surveys?  
Dr. Mark Gilchrist, Consultant Antimicrobial Pharmacist, London |
| 13:40-14:00  | Influencing Clinicians to adopt a risk-benefit approach to prescribing  
Dr. Jaffar Al Tawfiq, Consultant Infectious Diseases, ARAMCO, KSA |
| 14:00-14:30  | How do we measure impact of stewardship to drive change? Shared presentation:  
Dr. Rayhan Hashmey, Consultant Infectious Diseases, Tawam Hospital, UAE  
Prof. Dilip Nathwani, Consultant Infectious Diseases, Dundee, Scotland |

**Session 3: Antimicrobial Stewardship & Infection Prevention and Control**  
Chair: Atef Al Shibl, Professor of Microbiology, KSU, KSA  
Co-Chair: Dr. Amal AIAydraraos, Pediatric Consultant Infection Control, PSMMC, KSA

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<th>Time</th>
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| 14:30-14:50  | Educational and computerized system interventions to support stewardship  
Includes demonstration of PAUSE website  
Prof. Dilip Nathwani, Consultant Infectious Diseases, Dundee, Scotland |
| 14:50-15:20  | Alignment of the antimicrobial management team and infection prevention team  
Shared Presentation:  
Dr. Abdullah Assiri, Director of Infection Prevention & Control, Ministry of Health, KSA  
Dr. Michael Cooper, Director of Infection Prevention & Control, Wolverhampton, England |
| 15:20-15:40  | The Abu Dhabi Emirate Surveillance System for Antimicrobial Resistance (AD ARS)  
Dr. Jens Thomsen, MPH, Abu Dhabi, UAE |
| 15:40-16:00  | Coffee Break                                                             |
| 16:00-17:00  | Panel Discussion: Establishing a roadmap for a stewardship programme in the gulf  
All Speakers  
Refreshments to be available for consumption during the panel discussion |
## Scientific Program

**Day 2:**  
**Monday, 02nd December 2013**

### Session 4a: OPAT: What, why and how?  
Chair: Dr. Manaf Al Qahtani, Consultant Infections Diseases, Bahrain Defense Force

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<tr>
<td>09:30-10:00</td>
<td>OPAT: Global Perspective of Value</td>
<td>Prof. Dilip Nathwani, Consultant Infectious Diseases, Dundee, Scotland</td>
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<td>10:00-10:20</td>
<td>OPAT: Does it matter in the Gulf</td>
<td>Dr. Ali Al Omrani, Consultant Infectious Diseases, PSMMC, Riyadh, KSA</td>
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<td>10:20-10:40</td>
<td>Standards for OPAT care: Adults and Paediatrics</td>
<td>Dr. Ann Chapman, Consultant Infectious Diseases, Sheffield, England</td>
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<td>10:40-11:00</td>
<td>Coffee Break</td>
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### Session 4B: OPAT: Let’s do it!  
Chair: Dr. Ali Omrani, Consultant Infectious Diseases, PSMMC, Riyadh, KSA  
Prof. Huda Bukharie, President, Saudi Society for Medical Microbiology and Infectious Diseases

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<tr>
<td>11:00-11:20</td>
<td>Implementing an OPAT service in the UK</td>
<td>Dr. Graeme Jones, Consultant in Medical Microbiology, Southampton, England</td>
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<td>11:20-11:40</td>
<td>Developing and implementing an OPAT service in the Gulf region: opportunities, barriers and successes</td>
<td>Dr. Manaf AlQahtani, Consultant Infections Diseases, Bahrain Defense Force</td>
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<td>11:40-12:00</td>
<td>The value of OPAT registry and learning community</td>
<td>Dr. Mark Gilchrist, Consultant Antimicrobial Pharmacist, London, England</td>
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### Session 5: Opportunities for future collaboration between our societies

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<th>Co-Chair</th>
<th>Location</th>
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| 12:00-12:20 | Discussion | Prof. Huda Bukharie, President, SSMMID  
Dr. Nicholas Brown, President, BSAC |  |
| 12:20-12:30 | Closings Remarks | |  |
| 12:30-14:00 | Lunch & Prayer | |  |
| 14:00-15:00 | Distribution of Certificates | |  |
Speaker’s Abstracts and Profile
Stewardship: Plenary- What is it, evidence, impact & experience
Prof. Dilip Nathwani

Antimicrobial resistance [AMR] has been identified as a major threat by the World Health Organisation and has been the subject of much discussion. The recent [September 2013] published UK Antimicrobial resistance Action Plan recommend a range of measures to overcome this threat. The 3 key strategic aims are to improve the knowledge and understanding of AMR through 1] better information, intelligence, supporting data and developing more effective early warning systems to improve health security, 2] to conserve and steward the effectiveness of existing treatments through improving infection prevention and control and development of resources to facilitate optimal use of antibiotics in both humans and animals, 3] to stimulate the development of new antibiotics, diagnostics and novel therapies by promoting innovation and investment in the development of new drugs and ensuring that new therapeutics reach the market quickly.

This presentation will provide a global view of stewardship strategies, the current evidence to support them but will emphasise a pragmatic approach to implementing and measuring the impact of stewardship.

Key publications

Lessons learned from the 1st global antimicrobial stewardship survey
Mr. Philip Howard

Antimicrobial resistance is a worldwide problem that requires a global response. Antimicrobial stewardship is an overarching term to describe processes within an institution that attempts to improve patient outcomes with infections whilst minimising collateral damage to both the patient and resistance to antimicrobials.

This paper describes the extent and components of global efforts in antimicrobial stewardship (AMS). It will describe differences between continents, and highlights how practice within Australasia and specifically New Zealand compares to the rest of the world.

There were 665 responses (66 countries from 6 continents): Africa 44, Asia 50, Europe 361, North America 72, Oceania 35, South America 103. National AMS standards existed in 32% of countries, and 7% planning too. 60% of hospitals have local standards and 19% plan to. 367 (57%) have an Antimicrobial Stewardship Programme (ASP), main barriers being lack of funding or personnel, information technology and prescriber opposition. In the 144 (22%) that plan to develop an ASP the main barrier is lack of funding. Main ASP objectives were to reduce resistance, improve outcomes and reduce prescribing. 61% have an AMS policy, 90% a formulary, 93% specific treatment and 92% prophylaxis guidance. AMS rounds exist in 63%, resulting in reductions of ATM use in 44%, increases in 15% and no changes in 40%. 80% restrict some antimicrobials: 73% restrict carbapenems, 63% quinolones, 58% cephalosporins; pharmacy follows up 65%. 25% practice diversity and 12% cycle antimicrobials. 85% of ASP report antimicrobial usage; 55% link these data to resistance rates and 48% to infection rates. Only 19% have electronic prescribing for all patients. The intranet is the most common communication method, followed by booklets, e-mail, poster then newsletter. 88% educate staff, mainly by with face to face induction followed by written information. Of the 37% who have formally reviewed their ASP, 96% showed reduction in inappropriate prescribing, 86% in broad spectrum antibiotics use, 80% in expenditure, 71% in HCAI, 65% in length of stay & 58% in resistance.

Despite inherent limitations, this survey suggests AMS can reduce antimicrobial resistance and expenditures, and should encourage a strategy to promote worldwide ASPs.
Stewardship: Challenges & opportunities in the gulf region
Dr. Mushira A Enani, MBBS, FRCPE, FACP, CIC

As a patient-centred quality initiative, Antimicrobial Stewardship Programme (ASP) is getting more and more attention by health care providers, policy makers, administrators and quality managers. Moreover, the global rise of microbial resistance to “last resort” antibiotics has created an urgent need for such programmes to stabilize or diminish resistance, conserve available antibiotics, and save healthcare finance without compromising quality of care.

According to a recent report, the Gulf Cooperation Council (GCC), namely, Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Oman, and Bahrain, share a high prevalence of extended-spectrum-β-lactamase (ESBL)-and carbapenemase-producing Gram Negative Bacilli (GNB), most of which are associated with nosocomial infections. Well-known and widespread β-lactamases genes (such as those for CTX-M-15, OXA-48, and NDM-1) have found their way into isolates from the GCC states. Several potential risk factors unique to the GCC states may have contributed to the emergence and spread of β-lactamases, including the unnecessary use of antibiotics and the large population of migrant workers.

In my presentation, I will discuss the preliminary results of a regional survey exploring opportunities and challenges implementing antimicrobial stewardship programme in GCC highlighting KFMC experience following recent inauguration of ASP.

Reference
What can we learn from point prevalence surveys?
Dr. Mark J. Gilchrist

One of antibiotic stewardships primary drivers is the need to monitor data, have transparency and provide a good stewardship infrastructure. Point prevalence antimicrobial surveys (PPS) are a useful tool within the antimicrobial stewardship tool kit to ensure you monitor, feedback, educate and raise awareness of antimicrobial practice.

It examines at one particular time period how your local, regional or national organisation is performing in relation to a particular stewardship initiative. For example adherence to guidelines, surgical prophylaxis or adverse events. The data can then be fed back through clinical and managerial structures to demonstrate success or highlight areas for improvement.

This presentation will explore the architecture of prevalence studies, the benefits they can bring and how lessons can be learnt to improve stewardship practices.
Influencing clinicians to adopt a risk - benefit approach to prescribing

Dr. Jaffar Al Tawfiq

Changing human behaviour is a difficult task and certainly changing physician behaviour is not an exception. Physicians are educated to be autonomous and independent in decisions. Thus, influencing physicians to adopt a risk-benefit approach to antibiotic prescribing requires multiple interventions. These interventions include: education, incentives, feedback, social marketing, and various other change strategies. The effects of these strategies were inconsistent and unpredictable. Ineffective strategies include: dissemination of printed educational materials, and didactic educational session.

On the other hand, reminders, educational outreach and multifaceted interventions are effective. Knowing that physicians respond different to new information and a new guideline is helpful. The difference in the response depends on the type of the clinicians: the seeker, the receptive, the traditionalist, and the pragmatist. The use of individualized approach to effect practice change strategies such as knowledge-oriented and behavior-oriented methods. Thus, use of different strategies may have to be tailored to each type of physician to result in a good outcome. Consideration for change should also be directed toward different levels.

These levels include: the individual health professional; health care groups or teams; organizations; the larger health care system or environment in which individual organizations are embedded. There is no one magic bullet for change. Knowledge is necessary, but usually insufficient, for behavior change. Utilizing the best implementation strategies is needed in order to effectively translate evidence into practice.
How do we measure impact of stewardship to drive change?
Shared presentation: Dr. Rayhan Hashimi & Prof. Dilip Nathwani

Dr. Rayhan Hashimi
The confidence in antibiotic efficacy has fuelled an epidemic of antibiotic prescription abuse. As in other parts of the world, Infectious Diseases physicians in the United Arab Emirates are alarmed by the prospect that effective antibiotics may not be available to treat seriously ill patients in the near future. This presentation will share with the audience antimicrobial stewardship efforts in the Emirate of Abu Dhabi, UAE, in general and Tawam Hospital in particular.

The ASP Team at the hospital has used both ‘front end’ and ‘back end’ approaches to curb antibiotic overuse and achieved a 54% global reduction in the use of antibiotics. This confirms the fact that good ASP programs do not cause a ‘balloon effect’, and can effectively challenge physicians to be better prescribers.

We have also devised a mechanism for ASP physicians to record their productivity in the EMR. Emirate wide activities include formation of an ASP Committee at SEHA (healthcare provider for 70% of the Emirate’s population) and close alliance with the Health Authority of Abu Dhabi (HAAD), creating the first sentinel database of antimicrobial resistance for the Emirate, generating data on General Physician prescribing behaviors and organizing educational activities targeted at high-prescribing physicians.

Our evidence shows that there is significant antibiotic abuse in the Emirate of Abu Dhabi and a similar situation may exist widely in the other Gulf States. However, mechanisms for stewardship can be easily enforced with the cooperation of health regulatory bodies and hospital administration support.

Disclosures: None
Educational and computerized system interventions to support stewardship

Includes demonstration of PAUSE website

Prof. Dilip Nathwani
Alignment of the antimicrobial management team and infection prevention team
Shared presentation: Dr. Abdulla Assiri & Dr. Michael Cooper

Dr. Abdulla Assiri
Infection Prevention team Plays Key Role in solidifying Antimicrobial Stewardship Efforts. They are core members of any multidisciplinary antimicrobial stewardship team.

In clinical area, the infection preventionist is generally the first one who is going to identify the drug-resistant organisms and help disseminate the information. Because infection preventionists track infection and transmission numbers over time, they provide information that will help hospitals analyze the success of antimicrobial stewardship programs.

As educators who teach at the unit level, they also can help bring front-line workers on board.

Antimicrobial resistance is a global threat, however institutions and countries will successful infection prevention and control programs generally have lower rates of multidrug resistant bacterial infections. This highlights the fact that prevention of healthcare associated infections is a cornerstone in the efforts to curtail antimicrobial resistance.

Dr. Michael Cooper
Antimicrobial stewardship plays a fundamental role in the implementation of a successful infection prevention and control strategy, but optimal management of antimicrobials alone will not compensate for poor infection prevention and control practices. Multi-resistant organisms can potentially have a dual role in respect of infection prevention: they can act as markers of the spread of infection, but are also usually the target for control.

There are numerous examples in which the restriction of certain antibiotics or antibiotic classes have contributed substantially to the control of outbreaks of not just resistant organisms, but also the consequences of antibiotics, such as Clostridium difficile infection. These can be across individual wards or units within a hospital, across an entire organisation, or may even be at national level.

The restriction of the use of individual or classes of antimicrobials can have unexpected and undesirable consequences, and it is vitally important that resistance and pathogen trends are constantly monitored locally and nationally to ensure timely warning is given over emerging resistance patterns or new pathogens.
Purpose/Objective:
The Abu Dhabi Antimicrobial Resistance Surveillance (AD ARS) Program has been established in 2010 by the Health Authority Abu Dhabi (HAAD). Key objectives of AD ARS are to
- Collect and analyse antimicrobial resistance (AMR) data from public and private healthcare facilities in Abu Dhabi Emirate
- Document levels and trends of AMR in Abu Dhabi Emirate
- Communicate results and findings to stakeholders and the concerned community
- Facilitate AMR prevention and control strategies and activities, including:
  - Awareness and education activities
  - Development of AMR policies and standards
  - Development of antimicrobial stewardship programs

Methods:
AD ARS is a mandatory electronic public health surveillance program, utilizing clinical data routinely generated for patient care by clinical and microbiology departments of participating hospitals. A HAAD standard for monitoring of AMR data by hospitals and reporting to HAAD has been issued in July 2011, building the legal basis for AD ARS and enabling HAAD to continuously collect and analyze AMR data for epidemiological purposes. Complete AMR test data since Jan 2010 has been collected and analyzed, using WHONET 5.6/BacLink software, a freely available software package used for public health AMR epidemiology.

Results:
For 2010-2012, a total of 1,360,518 antimicrobial susceptibility test results were reported to AD ARS, including data on 75,656 isolates tested for 166 antimicrobial agents. The isolates have been identified from 67,501 patients visiting one of 67 (public) healthcare facilities in AD Emirate. The participating public hospitals represent 66% of total bed capacity and 73% of total annual healthcare access episodes, making AD ARS highly representative for AD Emirate.

Preliminary analysis demonstrates
- Partially high levels of antimicrobial resistance, e.g. for 2012 a MRSA rate of 27.7%, VRE-rate of 20.0%, E. coli/ciprofloxacin-R rate of 32.5%, S. pneumoniae/penicillin-R rate of 12.9%, and S. pneumoniae/erythromycin-R rate of 41.2%.
- Increasing trends of resistance: resistance has been statistically significant increasing during the observation period for several classes of antimicrobials: fluoroquinolones (for S. aureus, E. coli, K. pneumoniae, Salmonella spp., P. aeruginosa), third-generation cephalosporins (for E. coli and K. pneumoniae), and carbapenems (for K. pneumoniae).
High levels of multidrug-resistant organisms (MDR), e.g. 24.5% (S. aureus), 41.1% (E. coli), 21.7% (K. pneumoniae), 44.9% (Shigella spp.), 24.1% (P. aeruginosa), 53.1% (A. baumannii), and 48.8% (S. maltophilia).

Emerging new threats: Carbapenem-resistant Enterobacteriaceae (CRE) are still rare but have emerged locally, and first small clusters of even pan-resistant CRE have already been observed in local hospitals and led to at least two fatalities.

Summary/Conclusions

AD ARS is a very useful public health surveillance system for antimicrobial resistance data and has resulted in a wealth of high quality data on local levels and trends of antimicrobial resistance, previously not available for health authorities and public health departments in the United Arab Emirates. It could be demonstrated that the design, development and implementation of a public health surveillance system for antimicrobial resistance data is possible on a zero-budget basis.

The AD ARS can also help and facilitate to
- assess the relationship between local antimicrobial consumption and development of antimicrobial resistance,
- conduct cluster and outbreak analysis of multi-drug-resistant organisms (MDRO),
- develop targeted awareness and education activities for healthcare professionals and the general public,
- exchange antibiotic resistance surveillance data with other emirates and countries in the region, and to
- make informed decisions regarding prescription policies for antimicrobials, antimicrobial stewardship programs, and infection prevention and control programs.

The presentation will provide an overview of the AD ARS system, including the design, development and implementation process, and related policies and procedures. Furthermore data on antimicrobial resistance levels and trends in all Abu Dhabi Emirate public hospitals for 2010-2012 will be presented. This is the first public health surveillance system for antimicrobial resistance in the United Arab Emirates, and to our knowledge only the second such program in the Gulf/GCC region, after Oman.
OPAT: Global Perspective of Value
Prof. Dilip Nathwani

Outpatient Parenteral Antimicrobial Therapy (OPAT) has become a global treatment modality since its advent in 1974. One of the key challenges for OPAT programmes has been to show clinical, microbiological, and economic value while maintaining safety and quality.

Multi-centre outcome registries that were employed at the turn of the century to demonstrate the benefits and challenges in this treatment setting but have been discontinued. In the intervening years trends in clinical, patient satisfaction, programmatic and economic outcomes have been shown in sporadic cohort analyses from around the globe. These outcomes are generally reassuring and compare well with previous registry data. However meaningful comparison of a range of key outcomes is hampered by a lack of uniformity to outcome reporting. In addition to ‘whole programme’ outcome reports several studies have detailed real world outcomes in OPAT pertaining to specific conditions and populations. This work has shown how prospective data collection in the OPAT setting can yield valuable insights into the effectiveness and safety of the management of many conditions such as osteoarticular infection and endocarditis in a diverse range of populations and increasingly from different countries. Enhanced and perhaps more uniform outcome surveillance in this fashion now constitutes good practice and will enable the benefits and risks of this treatment modality to be shared in both novel and established OPAT arenas. One example is the UK National outcomes Registry [http://e-opat.com/outcomes-registry/].

This presentation will share OPAT experience/evidence across the globe and provide some insight into the outcomes that demonstrate value.

Bibliography


Muldoon EG, Snydman DR, Penland EC, Allison GM. Are We Ready for an Outpatient Parenteral Antimicrobial Therapy Bundle? A Critical Appraisal of the Evidence. Clin Infect Dis 2013;57(3):419-
Formal outpatient parenteral antimicrobial therapy (OPAT) service was first introduced over three decades ago. Evidence has accumulated to demonstrate that for certain patients OPAT is a safe, efficient and effective alternative to hospital admission for parenteral antimicrobial therapy.

The majority of infections treated through OPAT centers are those that require parenteral therapy to ensure efficacy and penetration, for example bone and joint infections, complicated soft tissue infections, device-related infections; or are caused micro-organisms resistant to oral treatment options. Healthcare services in the Gulf Cooperation Countries (GCC) have seen enormous expansion and development recently. One inevitable consequence of healthcare for complex medical and surgical conditions has been an increase complicated infections, often caused by multi-drug resistant bacteria. The need for parenteral antimicrobial therapy is increasing, and significant proportions of cases appear suitable for OPAT settings. Limited experience in the region has been reported in the literature.

Nevertheless, the indications are the service has been well-accepted by its users, has provided efficient and effective care and contributed positively to the patients’ experience. More work is required to increase provision and access to OPAT services and to demonstrate its suitability for the local social and healthcare setting.
Standards for OPAT care: Adults and Paediatrics
Dr. Ann Lynn Chapman

OPAT is associated with many significant advantages over traditional inpatient care, including provision of care closer to the patient’s home, its cost-effectiveness and its associated reduced rate of hospital acquired infection. However, OPAT is also associated with increased clinical risk due to more limited supervision of patients than would be provided in a hospital setting.

Furthermore, its clear benefits provide encouragement for the growth of OPAT services across a range of healthcare sectors, administered by clinical teams with varying backgrounds and constitution, and of varying quality. The OPAT Good Practice Recommendations (GPRs) were developed in response to this diversity, with the aim of providing consistent, usable UK-wide guidance on the minimum acceptable level of care for patients undergoing OPAT.

In this talk I will describe how the adult GPRs were developed, outline their content and discuss further steps in their implementation across the UK. The paediatric GPRs are currently still being developed, and I will discuss their progress to date.
Implementing an OPAT Service in the UK
Dr. Graeme Jones

Developing a sound business case is an essential step to success in establishing an OPAT service. Understanding the local needs, required structures, staffing, costs and income potential is critical to presenting a credible plan for commissioning the service.

Critically, the business case must also explain how an OPAT service will link with other developments to facilitate achieving wider organisational goals. This talk will discuss what information is required and how to present this information effectively to stakeholders. BSAC has developed an on-line interactive tool kit of resources to help create a bespoke business case document that can reflect the detail of individual services and which draws on the experience of others.

This toolkit was developed to help establish UK OPAT services and while some content is specific to UK healthcare, much of the content is generic and is applicable to establishing OPAT in any setting. Examples will be given of how the OPAT service in University Hospital Southampton UK was implemented and the arguments used to secure support and funding for the service.
Outpatient Parenteral Antimicrobial Therapy (OPAT) in the Kingdom of Bahrain: Opportunities, Barriers and Success
Dr. Manaf Al Qahtani

Outpatient parenteral antimicrobial therapy (OPAT) is used to facilitate early discharge from hospitals, and subsequently to reduce the risk of health care associated infections and to increase patient satisfaction. In the recent years, the use of OPAT services has increased in various countries due to evidence that supports its clinical justification and cost effectiveness.

Although OPAT originally started in 1974 in the United States this practice is considered relatively new to the Middle East. OPAT clinic started in the Kingdom of Bahrain in February 2012, with the primary aim of reducing patient hospital stay, increasing patient’s satisfaction, lowering admission cost, and providing patient-centered care. In our OPAT clinic, patients attend an outpatient clinic where therapy is administered by trained health care workers.

Therefore, the main purpose of us presenting our new clinic service is to share our success “OPAT SROTY”, explore efficacy and patient satisfaction with the services provided by the OPAT clinic, and to determine cost effectiveness.

The key to success in the OPAT services is providing treatment equivalent to inpatient services and decreasing hospital stay, while improving patient satisfaction. To do so, appropriate patient selection can be the main factor that contributes effectively to success and safety in the treatment of a number of conditions treated in the OPAT clinic, including endocarditis, soft tissue infection, and osteomyelitis.
The value of OPAT registry and learning community  
Dr. Mark J. Gilchrist

Many OPAT centres use a variety of tools, usually self-taught and built, to capture local clinical and service data. The functionality of these tools depends on local information technology, resources and expertise.

However, being able to demonstrate value, an improved patient experience and generate outcome data is of fundamental importance in modern healthcare. The BSAC OPAT patient management system and registry work stream has tried to pull all the patient, clinical and service information together to create and design a new application for local OPAT centres.

A UK registry has allowed comparison of OPAT services nationally to guide practice and improve services. This presentation will look at the value of such systems and what can be learnt not only for individual centres but for the OPAT/ healthcare community as a whole.
Speakers

Prof. Dilip Nathwani
MB, FRCP (London), FRCP (Ed), FRCP (Glasg), DTM&H
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Qualified from Aberdeen University in 1984, and has subsequently training in internal medicine/infection/tropical medicine in Aberdeen, Glasgow and Birmingham, UK.
Chairman of Scottish Government Funded Scottish Antimicrobial Prescribing Group (SAPG) from February 2008. This group has been tasked by the Scottish Government to take forward a national clinical antimicrobial stewardship programme. It is a subgroup of the SMC- a national Health Technology Assessment Group. Chair of the European Study Group on Antibiotic Policies [ESGAP] from 2011– one of the ESCMID study groups.
NHS Tayside Director of Medical Education (DME), National Specialty Adviser for Infectious Diseases to the Scottish Government Health Department and Chair of the BSAC UK OPAT group.

Authored more than 225 peer reviewed publications, contributed to chapters on antibiotic treatment, stewardship and OPAT in prestigious textbooks, involved in 20 national, including SIGN, BTS, BSAC national and international infection guidelines or consensus statements.

Awarded the Scottish Quality Award in 1998 for the innovative Outpatient and Home Parenteral Antibiotic Therapy (Ambulatory IV Anti-microbial Therapy) Service for Tayside & Douglas-Adamson Award for Clinical Excellence and Patient Care within NHS Tayside.

Research interests include developing and promoting best infection practice guidelines, anti-microbial stewardship, OPAT, medical education, quality improvement in infection management, clinical and health economic outcomes in relation to new antibiotics, particularly those related to the treatment of serious and resistant pathogens such as MRSA and C.difficle.

Disclosures:

1. Non-commercial
   - Chair of Scottish Antimicrobial Prescribing Group [SAPG]- Scottish Government Stewardship Programme
   - President ESGAP
   - Chair of BSAC National OPAT working party
2. Commercial Advisory Boards:
   - Pfizer, Novartis, Janssen, Astellas, Wyeth
3. Research funds:
   - Pfizer, Bayer
   - Lecture funds: Pfizer, Novartis, Astellas, Wyeth, Bayer
Mike qualified in medicine from Sheffield University and undertook specialist training in Microbiology in the West Midlands. Appointed as consultant microbiologist in 1996, he has been Infection Control Doctor since 1999 and Director of Infection Prevention and Control since 2005 for Royal Wolverhampton NHS Trust.

Mike and the Infection Prevention Team have won several prestigious awards and received national recognition for the reductions in HCAIs across Wolverhampton in recent years. Mike has served on BSAC Council and has been BSAC Meetings Secretary since 2010.

Philip Howard is Consultant Pharmacist in Antimicrobials at the Leeds Teaching Hospitals NHS Trust, and an Honorary Senior Lecturer at Leeds University.

He is currently the Chair of the UK Consultant Pharmacists Group. He is a spokesman for the Royal Pharmaceutical Society on Antimicrobials, and for the charity Antibiotic-Action.

He was a member of the Department of Health ARHAI Antimicrobial Stewardship Group that produced the Start Smart then Focus Antimicrobial Stewardship Guidelines, and the HPA Primary Care Unit which helped produce the RCGP TARGET guidance on Antimicrobial Stewardship in Primary Care. He is a committee / council member of:

- UKCPA Infection Management Group
- British Infection Association Council
- British Society of Antimicrobial Chemotherapy
- Antibiotic Policies Group of European Society of Clinical Microbiology & Infectious Diseases

His current research interest is Antimicrobial Stewardship. He lectured across the world on this subject. In 2012, he won the GHP/GSK/UKCPA Clinical Leadership Award. He is a former Chairman of the UK Clinical Pharmacy Association, and a current Trustee. He is a committee member of the joint Guild of Healthcare Pharmacists / UKCPA Leadership Development Group and the Infection Management Group. He has worked with many multidisciplinary groups at national and regional level in the fields of antimicrobials, pain, commissioning, cancer, thromboembolism, peripheral arterial disease, post-operative nausea and vomiting and supplementary prescribing. He has delivered many lectures and workshops on antimicrobial stewardship, leadership & clinical pharmacy to surgical patients around the world.
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Mark is a Consultant Pharmacist Infectious Diseases within Imperial College Healthcare NHS Trust, London. Mark trained in Scotland before moving to London in 2001 to embark on a career in hospital pharmacy.

In 2004, he started to specialise in infection and now has particular clinical interests in tuberculosis, critical care and Outpatient Parenteral Antimicrobial Therapy (OPAT) whilst leading antimicrobial stewardship initiatives both locally and nationally. His postgraduate education includes an MSc and independent prescribing status. Mark is chair of the United Kingdom Infection Management Group for pharmacists, co-chair of the BSAC UK OPAT Initiative and was recently awarded Fellow of the Royal Pharmaceutical Society Faculty.

Dr. Graeme Jones
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Dr. Jones qualified in medicine from University of Newcastle-upon-Tyne. Following a commission in the Royal Navy as a submarine medical officer, he trained in general internal medicine and then medical microbiology and was appointed as Consultant in Medical Microbiology at University Hospital Southampton in 1997.

He was Director of the Health Protection Agency South East Regional Laboratory from 2004-2009 and has been Director of Infection Prevention for University Hospital Southampton since 2009. His clinical interests include appropriate use of antibiotics, outpatient parenteral antibiotic therapy and control of Clostridium difficile infection. Research interests include work on natural immunity to meningococcal infection and use of diagnostic microbiology in cystic fibrosis. Dr Jones established an OPAT service in Southampton in 1999 and has since been involved in developing different models of local service delivery.
Dr. Ann Lynn Chapman  
BM, BCh, FRCP, DTM&H, MSc, PhD  
Consultant and Clinical Lead in Infectious Diseases  
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Dr. Ann Chapman undertook her undergraduate medical degrees at Cambridge and Oxford Universities before training in Infectious Diseases and General Medicine in a number of centres throughout England. She also has a background in laboratory-based research, having completed a MRC-funded PhD in viral immunology during her registrar training, followed by post-doctoral research on immunological diagnosis of tuberculosis. She is now Lead Consultant in Infectious Diseases at the South Yorkshire Regional Department of Infection and Tropical Medicine, based at Sheffield Teaching Hospitals NHS Foundation Trust, and Honorary Senior Lecturer at the University of Sheffield.

Dr. Chapman set up the Sheffield OPAT (Outpatient Parenteral Antimicrobial Therapy) service in 2005, and continues to lead its clinical activity and service development: the service is now one of the largest in the UK. She has published extensively on OPAT, and was the first to demonstrate its cost-effectiveness in the NHS setting. She has an interest in medical leadership and quality improvement, and in 2012 co-chaired the development of the UK national Good Practice Recommendations on OPAT. She is a member of the UK OPAT Steering Committee and contributes to development of OPAT nationally through this, and also through her membership of the National Infectious Diseases Clinical Reference Group.
Dr. Manaf Alqahtani is a North America doubly-qualified internist and infectious Diseases Physician currently working as consultant Internist and Infectious diseases and Clinical Microbiology consultant at the Royal Medical Services of the Bahrain Defence Force (BDF). He is Head of Microbiology section– in department of Pathology and laboratory - BDF Hospital & Chairperson in the infection controls and Antimicrobial therapeutic committees and Co-Chairperson for drug and therapeutic committee in royal medical services.

He is also a senior lecturer and clinical tutor at the Royal College of surgeons in Ireland (Medical University of Bahrain). He is a board member in the School of Medicine Academic Committee at RCSI-Bahrain. He graduated from the Royal College of Surgeons in Ireland in 1999 with distinction Honours degrees. He was awarded Bachelor of Medicine (M.B.), Bachelor of Surgery (ChB), Bachelor of obstetrics (B.A.O) and Licentiate of the Royal College of Physicians and surgeons in Ireland (L.R.C.P). He then completed 3 years (2003-2006) training in Internal Medicine Residency Program at the University of Toronto, Canada and successfully obtained diplomat American Board certification in Internal Medicine in 2006 (DABIM) followed by Canadian Board Certifications in Internal Medicine in 2007. On the same year, he became a Fellow of the Royal College of Physicians and surgeons of Canada (FRCPC). He then pursued another 2 years (2006-2008) training in Infectious Diseases at University of Toronto followed by 1 year training in Medical Microbiology and Infection Control at university of Toronto, Canada. In 2009, he obtained his American Board Certification in Infectious diseases (ABIM-ID). He spent another year (2009) doing solely clinical research projects yielded in to papers (Screening for Vancomycin- Intermediate staphylococcus aureus: Dose Casein makes a difference? And Risk Factors for the Development of PTLD in EBV D+/R- Transplants). From 2008-2010, he joined Tulane University (School of Public Health & Tropical Medicine) and successfully obtained his Master Degree in Medical Management in 2010 (MMM).

He is a member of various professional societies, including the Bahrain Medical Society, the Infectious Disease Society of America (IDSA), and the American College of Physicians (ACP). He has won several awards and has several international publications. He has two active unrestricted independent license practices in Kingdom of Bahrain & Canada.
Dr. Rayhan Hashmey is the Deputy Chief Medical Officer, Consultant Infectious Diseases and Physician Lead for Medical Informatics at Tawam Hospital. He joined the Division of Infectious Diseases, Tawam Hospital, as a Senior Consultant in 2003. Assuming leadership of the Division in 2004, he spearheaded the expansion of Infection Control services at the hospital, and established its first Antimicrobial Stewardship Program. From 2009 through 2012 he chaired the Department of Academic Affairs, overseeing the restructuring of Post-Graduate Medical Education (PGME) and establishment of the Clinical Research Office. He Co-Chairs the Department of Performance Innovation.

A graduate of Dow University of Health Sciences, Pakistan (1989), he completed his residency in Internal Medicine (1994) and Infectious Diseases fellowship at Baylor College of Medicine, Houston, USA (1996). He is Board Certified in Internal Medicine and Infectious Diseases from the American Board of Medical Specialties. His areas of interest are infection control, antimicrobial stewardship and HIV infection. He serves on several hospital and SEHA committees. He holds Associate Professorship in Internal Medicine at the UAE University Faculty of Medicine and Health Sciences.

An investigator in many clinical trials, he has a number of publications and abstracts to his credit. He is actively working with Health Authority of Abu Dhabi to implement greater antimicrobial oversight in the Emirate. He has won numerous awards including the Arab Health Award in Infection Control and Excellence in Patient Centered Care, SEHA Transformational Event award for the best multidisciplinary patient centered clinic (Tawam HIV clinic), Tawam Hospital employee of the year, and the UAE University adjunct faculty Teaching Award.
Dr. Med. Jens Thomsen MPH has joined the Health Authority – Abu Dhabi (HAAD) in 2007 and is currently holding the position of Section Head, Occupational and Environmental Health (OEH) in the Community Health & Surveillance Dept. of the Public Health & Research Division.

Dr. Thomsen is a Germany-trained Medical Doctor and is a German Medical Board certified Specialist in Clinical Microbiology and Infectious Disease Epidemiology. He is also holding a Master of Public Health (MPH) degree from Rollins School of Public Health, Emory University, Atlanta, GA, with majors in epidemiology and biostatistics. He is also German and U.S. board-certified certified in Healthcare Infection Control and has 19 years of medical and public health experience from the US, Germany and the United Arab Emirates.

Dr. Thomsen’s primary role and responsibility at HAAD is to develop and implement public health strategies and activities of the Health Authority – Abu Dhabi in the area of occupational and environmental health and safety, and antimicrobial resistance.

Abdullah M Assiri, graduated for the college of medicine at King Saud University on 1994. He completed internal medicine residency program at King Faisal specialist hospital in Riyadh then he did fellowship training in adult infectious diseases at Dalhousie University.

He worked in various healthcare institutions in Saudi Arabia and he is currently the Director on Infection Prevention Administration at the Ministry of Health. Other activities include research and epidemiologic investigations of emerging pathogens such as MERS-CoV and AVHF, postgraduate training programs development in infection control and public health.
Dr. Jaffar A. Al-Tawfiq, MBBS, DTM&H, FACP, MISID is a consultant of internal medicine and infectious diseases at Saudi Aramco Medical Services Organization (SAMSO). He had completed his medical school at King Faisal University School of Medicine, Saudi Arabia. He then completed his internal medicine residency at Indiana University School of Medicine, Indiana (USA). He subsequently completed Infectious Diseases Fellowship at the same university.

He is board certified in internal medicine and infectious diseases by the American Board of Internal Medicine. During his Infectious Diseases fellowship, Dr. Al-Tawfiq did extensive work on the pathogenesis of Haemophilus ducreyi and the mechanism of the immune response to the various genes. In 1998, he completed a diploma in Tropical Medicine and Hygiene (DTM&H) at London School of Tropical Medicine and Hygiene and was awarded a diploma in TM&H by the Royal College of Physician of London. During his academic career, Dr. Al-Tawfiq had multiple publications in different medical journal including: Journal of Infectious Diseases (JID), Clinical Infectious Diseases (CID), Annals of Pharmacotherapy, New England Journal of Medicine, Lancet Infectious Diseases, International Journal of Infectious Diseases (IJID) and Infection Control and Hospital Epidemiology.

He had participated in many international conferences and presented at various regional and local seminars. Dr. Al-Tawfiq received many publication awards from Indiana University and Saudi Aramco Medical Services Organization (SAMSO). Dr. Al-Tawfiq is an associate editor of Journal of Infection and Public Health and also an associate editor of the Journal of Epidemiology and Global Health.
Dr. Mushira Enani, is a consultant and head of adult infectious diseases section in the department of medicine at King Fahad Medical City, Riyadh, Saudi Arabia. She is also the program director of the Saudi Commission for Health Specialties ID fellowship in the hospital. In April 2011, Dr. Enani was elected as the central region director for the Saudi Society for Medical Microbiology and Infectious Diseases. She also chairs the scientific and education committee, American College of Physician (ACP) Saudi chapter since Jan 2012.

In April 2000, Dr. Enani founded the Infectious Diseases Division in the department of Medicine at Riyadh Military Hospital (Currently “Prince Sultan Military Medical City”) & she served as head for nine years.

Dr. Enani graduated from Jeddah, King Abdulaziz University, faculty of Medicine with honor degree, then joined the national internal medicine board program at King Saud University in Riyadh during which she obtained the MRCP(Edin) in 1993 and Internal Medicine board in 1995. She joined ID fellowship of KFSH&RC 1995-1997. Dr. Enani is FRCP (Edin) holder since 2001. Dr. Enani received best resident, fellow and consultant awards & many appreciation letters and plaques from her patients.

More recently, Dr. Enani was appointed as the chairperson of antimicrobial stewardship program & committee in KFMC.

Dr. Enani has several publications in peer reviewed journals and has ongoing research projects. Her areas of interest include antimicrobial stewardship, surgical site infection, and medical education. She is a member of the Infectious Diseases Society of America, European Society of Medical Microbiology and Infectious Diseases, Society of Hospital Epidemiology of America, antimicrobial stewardship working group of the international society of chemotherapy.
Dr. Omrani trained in Infectious Diseases and Microbiology at the University Hospital of Wales in the United Kingdom. He worked as a Consultant Infectious Diseases Physician in England and Wales before joining Riyadh Military Hospital in October 2010. His clinical interests include antimicrobial prescribing and stewardship and the management of infections in immune compromised hosts and those caused by multi-drug resistant organisms.
مدينة الملك فهد الطبية
King Fahad Medical City