Organizational Change: Challenges

Dr. Arti Kapil
Professor, Department of Microbiology
All India Institute of Medical Sciences,
New Delhi, India
Objectives

To understand the need for
• Formulation of national guidelines for infection prevention and antimicrobial stewardship

To discuss
• Present strengths and challenges

To reflect upon
• Lessons learnt and gaps identified
International Evidence

National level surveillance
• ESAC, PAHO, Australian surveillance-
  – National networks
  – Audit of antibiotic use
  – Computerized data management

• Administrative will most imp.
• Regulatory framework needed for compliance
India – the NDM Story

• Identified Gap- if systems were at place we would have been prepared

• Lesson learnt - there is a need for countrywide systematic approach to the problem of AMR
Status Report

Indian J Med Res 134, September 2011, pp 281-294

Rationalizing antibiotic use to limit antibiotic resistance in India+

Global Antibiotic Resistance Partnership (GARP) - India Working Group*

Received August 10, 2011
National Policy for containment of Antimicrobial Resistance

NATIONAL POLICY FOR
CONTAINMENT
OF
ANTIMICROBIAL RESISTANCE
INDIA

2011
Challenges for Implementation

- Inadequate regulatory framework, too ambitious and ideal
- Prescriptions only need availability of doctors

- Lack of diagnostic test to identify bacterial infections at field level
- Lack of national level data
Strengths

Professionals
• India has a large strength of trained manpower of medical microbiologists

Lab infrastructure
• Labs are coming forward for NABL accreditation
• Hospitals are getting accreditation by NABH

Research
• ICMR supports research related to AMR monitoring
Indian Experience

• Small but well designed interventional studies to convince administrators and clinicians on outcomes of ASP

• Determine and prioritize action points that are implementable and impact outcomes
Trends in antibiotic use among outpatients in New Delhi, India

Anita Kotwani* and Kathleen Holloway

<table>
<thead>
<tr>
<th>(December 2007-November 2008)</th>
<th>Antibiotics</th>
<th>Public sector</th>
<th>Private retail pharmacies</th>
<th>Private clinics</th>
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</thead>
<tbody>
<tr>
<td>Cephalosporins (J01DA)</td>
<td>5.7%</td>
<td>14.4%</td>
<td>11.6%</td>
<td></td>
</tr>
<tr>
<td>Flouroquinolones (J01MA)</td>
<td>9.0%</td>
<td>11.1%</td>
<td>13.7%</td>
<td></td>
</tr>
<tr>
<td>Penicillins (J01C)</td>
<td>10.2%</td>
<td>8.8%</td>
<td>8.7%</td>
<td></td>
</tr>
<tr>
<td>Macrolides (J01FA)</td>
<td>6.6%</td>
<td>4.0%</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Tetracyclines (J01A)</td>
<td>3.4%</td>
<td>0.6%</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Co-trimoxazole (J01EE01)</td>
<td>4.4%</td>
<td>0.3%</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>Aminoglycosides (J01G)</td>
<td>-</td>
<td>0.3%</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39.3%</strong></td>
<td><strong>39.5%</strong></td>
<td><strong>43.4%</strong></td>
<td></td>
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</table>
Trend analysis of antimicrobial consumption and development of resistance in non-fermenters in a tertiary care hospital in Delhi, India

Neeraj Goel, Chand Wattal*, Jaswinder Kaur Oberoi, Reena Raveendran, Sanghamitra Datta and Kamal Jeet Prasad

Figure 1. Association between antimicrobial consumption and isolation rate of non-fermenters.


Neurosurgery.
2009 Jun;64(6):1123-30
Comparison of 48 h and 72 h of prophylactic antibiotic therapy in adult cardiac surgery: a randomized double blind controlled trial

Anubhav Gupta¹, Milind Padmakar Hote¹*, Minati Choudhury², Arti Kapil³ and Akshay Kumar Bisoı¹

Conclusions: Forty-eight hours of a prophylactic antibiotic combination using a third-generation cephalosporin and an aminoglycoside is as effective as a 72 h regimen for preventing surgical site infection in patients undergoing CABG and valve surgery.
Antibiotic prophylaxis in the management of vesicoureteric reflux: a randomized double-blind placebo-controlled trial

Pankaj Hari · Smriti Hari · Aditi Sinha · Rakesh Kumar · Arti Kapil · Ravindra Mohan Pandey · Arvind Bagga

Fig. 2 Kaplan-Meier graph showing time to first UTI (log rank test \( P=0.02 \)). UTI urinary tract infection

<table>
<thead>
<tr>
<th></th>
<th>Antibiotic</th>
<th>Placebo</th>
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<tr>
<td>0</td>
<td>47</td>
<td>46</td>
</tr>
<tr>
<td>10</td>
<td>43</td>
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<td>31</td>
<td>42</td>
</tr>
<tr>
<td>180</td>
<td>29</td>
<td>42</td>
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Evaluation of Predictors of Adverse Outcome in Febrile Neutropenic Episodes in Pediatric Oncology Patients

Meenakshi Bothra · Rachna Seth · Arti Kapil · S. N. Dwivedi · Shinjini Bhatnagar · Immaculata Xess

Table 2  Multivariate analysis

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Categories</th>
<th>$P$ Value</th>
<th>Adjusted odds ratio with 95% CI</th>
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<tbody>
<tr>
<td>No. of Previous Episodes</td>
<td>0</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>1–2</td>
<td>0.395</td>
<td>1.43 (0.62–3.33)</td>
</tr>
<tr>
<td></td>
<td>≥3</td>
<td>0.004</td>
<td>4.82 (1.65–14.10)</td>
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<tr>
<td>On Oral Antibiotics</td>
<td>No</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>0.011</td>
<td>2.88 (1.28–6.48)</td>
</tr>
<tr>
<td>Chest Radiograph</td>
<td>Normal</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Abnormal</td>
<td>0.005</td>
<td>3.26 (1.44–7.37)</td>
</tr>
</tbody>
</table>
Way Forward- Local Level

- Multidisciplinary committees
- Implement ASP in a stepwise manner
- Determine the impact by measuring quantifiable outcomes
What can be Quantifiable Evidence?

• Study cost to the healthcare facility
• Collect evidence on prescribing practices
• Monitor antibiotic prophylaxis use
National Level

- Regulatory framework (including use outside human medicine)
- Capacity building at peripheral healthcare systems, including POC test
- Training of healthcare professionals
- Public awareness
Thank you

All India Institute of Medical Sciences – New Delhi