Models of ASP: Government Hospitals and other hospitals

Dr Sanjeev Singh
Demography

334 Medical Colleges *
150 Govt Medical Colleges *
184 Pvt Medical Colleges *
148366 Sub-centres **
24049 PHCs **
4833 CHCs **
>70,000 Hospitals ***

* Medical Council of India Statistics
**Rural Health Statistics 2012
***Health Sector Report
Factors influencing primary care physicians to prescribe antibiotics in Delhi India

Anita Kotwani\textsuperscript{a,*}, Chand Wattal\textsuperscript{b}, Shashi Katewa\textsuperscript{c}, P C Joshi\textsuperscript{c} and Kathleen Holloway\textsuperscript{d}

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Received 14 January 2010; Revised 23 June 2010; Accepted 25 June 2010.

\textbf{Results.} Three broad themes identified were as follows: behavioral characteristics of doctors and patients; laxity in regulation of prescribing and dispensing antibiotics and intervention strategies to decrease misuse of, and resistance to, antibiotics. Important factors identified for antibiotic prescriptions by doctors were diagnostic uncertainty, perceived demand and expectation from the patients, practice sustainability and financial considerations, influence from medical representatives and inadequate knowledge. For public sector doctors, besides the above, overstocked and near-expiry drugs and lack of time were the factors that promoted antibiotic overuse. Doctors also identified certain patient behaviour characteristics and laxity in regulation for prescribing and dispensing of antibiotics as aggravating the problem of antibiotic misuse. Interventions like Continuing Medical Educations for doctors, awareness raising of patients, shared decision making and stricter rules and regulations were suggested to promote rational use of antibiotics in the community.
Antimicrobial Stewardship in Institutions and Office Practices

Raju C. Shah and Pratima Shah

Ankur Institute of Child Health, Smt NHL Mun Medical College, Ahmedabad; ‘Department of Pediatrics, S.B.K.S. Medical college, Pipalia Gujarat, India

(i) Prospective audit with intervention and feedback
Prospective audit of antimicrobial use with direct interaction and feedback to the prescriber, performed by either an infectious diseases physician or a clinical pharmacist with infectious diseases training, can result in reduced inappropriate use of antimicrobials (A-I).

(ii) Formulary restriction and preauthorization
Formulary restriction and preauthorization requirements can lead to immediate and significant reductions in antimicrobial use and cost (A-II) and may be beneficial as part of a multifaceted response to a nosocomial outbreak of infection (B-II)

• The following elements may be considered and prioritized as supplements to the core active antimicrobial stewardship strategies based on local practice patterns and resources.
  • Education.
  • Guidelines and clinical pathways.
  • Antimicrobial cycling.
  • Antimicrobial order forms.
  • Combination therapy.
  • Streamlining or de-escalation of therapy.
  • Dose optimization.
  • Parenteral to oral conversion.

Patient education is also important, especially about the hazards of misuse and over-use of antibiotics (as in self medication and/or OTC purchase) leading to treatment failure, chronic infection, suppression of normal flora and selection of resistant bacteria. The importance of patient's compliance should be emphasized, especially for long course therapy, such as for tuberculosis. Finally, encouraging vaccination is important in preventing morbidity and mortality.
Strategies to improve: Direct interaction and feedback to prescribers; formulary restrictions, pre-authorisation of certain antimicrobials, education activities, clinical protocols for empirical treatment, de-escalation, dose optimization and parental to oral timely conversion.
Impact of Antimicrobial Stewardship Programme on Carbapenem Resistance in Gram Negative Isolates in an Indian Tertiary Care Hospital

1Namita Jaggi, 2Pushpa Sissodia and 3Lalit Sharma
1Department of Lab Services and Infection Control, Artemis Health Institute, Sector 51, Gurgaon, Haryana
2Department of Lab Services, Artemis Health Institute, Sector 51, Gurgaon, Haryana

Fig. 1: Carbapenem resistance in gram negatives
Prescribing and Dispensing determinants

Fig. 3. Prescribing determinants of antibiotics. 
*Sources*: Ref. 56.

Fig. 4. Dispensing determinants of antibiotics. 
*Source*: Ref. 56.

Rationalizing antibiotic use to limit antibiotic resistance in India: GARP; Indian J Med Res 134, September 2011, pp 281-294
Increase in UG seats: 5000
Increase in PG seats: 3X
## Types of Nursing Programs

<table>
<thead>
<tr>
<th>Nursing Programs</th>
<th>Training Duration</th>
<th>Examination</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auxiliary Nurse &amp; Midwife</td>
<td>2 years</td>
<td>Nursing Examination Board</td>
<td>R.ANM</td>
</tr>
<tr>
<td>General Nursing &amp; Midwifery</td>
<td>3 and 1/2 years</td>
<td>Nursing Examination Board</td>
<td>R.N &amp; R.M</td>
</tr>
<tr>
<td>B.Sc (Basic)</td>
<td>4 years</td>
<td>University</td>
<td>R.N &amp; R.M</td>
</tr>
<tr>
<td>B.Sc (Post Basic)</td>
<td>Regular: 2 yrs Distance: 3 yrs</td>
<td>University</td>
<td>Additional Qualification</td>
</tr>
<tr>
<td>M.Sc</td>
<td>2 years</td>
<td>University</td>
<td>Additional Qualification</td>
</tr>
<tr>
<td>M.Phil</td>
<td>1 year (Full time) 2 years (part time)</td>
<td>University</td>
<td>Additional Qualification</td>
</tr>
<tr>
<td>Ph.D</td>
<td>3-5 years</td>
<td>University</td>
<td>Additional Qualification</td>
</tr>
</tbody>
</table>
Indian Council of Medical Research

Epidemiology and Communicable Diseases Division

The Division acts as the administrative division in respect of seventeen Institutes/Centres, namely, Centre for Research in Medical Entomology, Madurai / Enterovirus Research Centre, Mumbai / Microbial Containment Complex, Pune / National AIDS Research Institute, Pune / National Institute of Cholera & Enteric Diseases, Kolkata / National Institute of Epidemiology, Chennai / National Institute of Malaria Research, New Delhi / National Institute of Medical Statistics New Delhi / National Institute of Virology Pune / National JALMA Institute for Leprosy and other Mycobacterial Diseases, Agra / Regional Medical Research Centre, Bhubaneswar / Regional Medical Research Centre, Port Blair / Regional Medical Research Centre for Tribals, Jabalpur / Rajendra Memorial Research Institute of Medical Sciences, Patna / National Institute for Research in Tuberculosis, Chennai / Vector Control Research Centre, Puducherry / ICMR Virus Unit, Kolkata.

It also oversees research in the areas of bacterial diseases, diarrhoeal diseases, outbreak investigations, other microbial infections, vector biology, viral diseases through the funding of extramural research in different medical colleges and research institutes of the country.

Collaboratives:

**GNB**: Klebsiella, Aceinatobacter, Pseudomonas, E Coli, Enterococcus,

**GPC**: Staph Aureus
Indian Network for Surveillance of Antimicrobial Resistance (INSAR)

Indian J Med Res 137, February 2013, pp 363-369

Methicillin resistant *Staphylococcus aureus* (MRSA) in India: Prevalence & susceptibility pattern

Indian Network for Surveillance of Antimicrobial Resistance (INSAR) group, India

Received July 26, 2011

*Background & objectives:* Methicillin resistant *Staphylococcus aureus* (MRSA) is endemic in India and is a dangerous pathogen for hospital acquired infections. This study was conducted in 15 Indian tertiary care centres during a two year period from January 2008 to December 2009 to determine the prevalence of MRSA and susceptibility pattern of *S. aureus* isolates in India.

*Methods:* All *S. aureus* isolates obtained during the study period in the participating centres were included in the study. Each centre compiled their data in a predefined template which included data of the antimicrobial susceptibility pattern, location of the patient and specimen type. The data in the submitted templates were collated and analysed.

*Results:* A total of 26310 isolates were included in the study. The overall prevalence of methicillin resistance during the study period was 41 per cent. Isolation rates for MRSA from outpatients, ward inpatients and ICU were 28, 42 and 43 per cent, respectively in 2008 and 27, 49 and 47 per cent, respectively in 2009. The majority of *S. aureus* isolates was obtained from patients with skin and soft tissue infections followed by those suffering from blood stream infections and respiratory infections. Susceptibility to ciprofloxacin was low in both MSSA (53%) and MRSA (21%). MSSA isolates showed a higher susceptibility to gentamicin, co-trimoxazole, erythromycin and clindamycin as compared to MRSA isolates. No isolate was found resistant to vancomycin or linezolid.

*Interpretation & conclusions:* The study showed a high level of MRSA in our country. There is a need to study epidemiology of such infections. Robust antimicrobial stewardship and strengthened infection control measures are required to prevent spread and reduce emergence of resistance.
National Centre for Disease Control

National Program on Containment of Anti-Microbial Resistance

Introduction
Antimicrobial resistance in pathogens causing important communicable diseases has become a matter of great public health concern globally including our country. Resistance has emerged to more & more resistant antimicrobial agents like Carbapenems.

Objectives

1. To establish a laboratory based surveillance system by strengthening laboratories for AMR in the country and to generate quality data on antimicrobial resistance for pathogens of public health importance.
2. To generate awareness among healthcare providers and in the community regarding rational use of antibiotics.

Activities

1. To strengthen infection control guidelines and practices and promote rational use of antibiotics.
2. Surveillance for Antimicrobial Resistance
3. Rational use of antibiotics
4. Development & implementation of national infection control guidelines
5. Training & Capacity Building of professionals in relevant sectors
6. EBC dissemination of information about rational use of antibiotics
7. National policy on Containment of Antimicrobial Resistance

International Collaboration

Indo-Swedish collaboration on antibiotic resistance:
Antimicrobial resistance (AMR) in pathogens has become a matter of great public health concern globally including our country. The factors responsible for this are widespread use and availability of practically all the antibiotics over the counter meant for human, animal and industrial consumption & inadequate compliance with the hospital infection control policies. AMR containment is an important challenge for the country as many new antibiotics are emerging and if antibiotic and hospital infection control policies are not adequately implemented we globally may end up in a pre-antibiotic era.

The agreement on cooperation in the field of healthcare and public health between India and Sweden was signed on 24th of February 2009 which encourages cooperation to promote other health issues, communicable diseases and antimicrobial resistance.

Mutual goals under the collaboration are:

1. Overall awareness among professionals and the general public of the problem with antibiotic resistance by cooperation in the fields of:
   a) Antibiotic resistance surveillance
   b) Monitoring of antibiotic use
   c) Awareness raising among professionals
   d) Improvements of infection control practices in hospitals

The memorandum of intent between India and Sweden signed on the 16th of May 2011 where the respective countries, represented by the National Centre for Disease Control with its Director Dr. L. S. Chauhan and the Swedish Institute for Communicable Disease Control with its Director Dr. J. Carlson record their intentions to increase bilateral cooperation in the field of sharing knowledge regarding working models for containment of antibiotic resistance and rational use of antibiotics and identification of the area for joint activities concerning innovative preventive measures, building on the current situation and experience from several antibiotics in this field related to broader areas.
Under the Drugs & Cosmetics Rules, drugs specified under Schedule H and Schedule X are required to be sold by retail on the prescription of a Registered Medical Practitioner only. At present Schedule H & Schedule X contains 510 & 15 drugs, respectively. Recently, a new Schedule H1 has been introduced through Gazette notification GSR 588 (E) dated 30-08-2013, which contain certain 3rd and 4th generation antibiotics, certain habit forming drugs and anti-TB drugs. These drugs are required to be sold in the country with the following conditions:

1. The supply of a drug specified in Schedule H1 shall be recorded in a separate register at the time of the supply giving the name and address of the prescriber, the name of the patient, the name of the drug and the quantity supplied and such records shall be maintained for three years and be open for inspection.

2. The drug specified in Schedule H1 shall be labelled with the symbol Rx which shall be in red and conspicuously displayed on the left top corner of the label, and shall also be labelled with the following words in a box with a red border:

"Schedule H1 Drug-Warning:
- It is dangerous to take this preparation except in accordance with the medical advice."
National Accreditation (NABH)

HIC 2: An appropriate antibiotic policy is established and implemented – based on institutional antibiogram, reviewed (may be once in three months) but at least every year.
KPIs for accreditation: PUBLIC & PVT HOSPITALS (NDR)
Skill Development

37 courses approved; 24 curriculum prepared; 8 released
# National Occupational Standards

## Healthcare Sector Skill Council – Key Building Blocks

### National Occupational Standards for Allied Health & Paramedics

<table>
<thead>
<tr>
<th>List of Job-roles for which Occupational Standards released</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Duty Assistant</td>
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<tr>
<td>2. EMT- Basic</td>
</tr>
<tr>
<td>3. EMT- Advanced</td>
</tr>
<tr>
<td>4. Vision Technician</td>
</tr>
<tr>
<td>5. Refractionalist</td>
</tr>
<tr>
<td>6. Cardiac Care Technician</td>
</tr>
<tr>
<td>7. Radiology Technician</td>
</tr>
<tr>
<td>8. Medical Laboratory Technician</td>
</tr>
<tr>
<td>9. Histotechnician</td>
</tr>
<tr>
<td>10. Phlebotomy Technician</td>
</tr>
<tr>
<td>11. Blood Bank Technician</td>
</tr>
<tr>
<td>12. Anesthesia Technician</td>
</tr>
<tr>
<td>13. Dialysis Technician</td>
</tr>
<tr>
<td>14. Operating Theatre Technician</td>
</tr>
<tr>
<td>15. Diabetes Educator</td>
</tr>
</tbody>
</table>

### National Occupational Standards released

- Skilled Workforce for the Healthcare Sector: An Impetus for Effective Healthcare and Sustainable Growth
- Medicine & Healthcare Summit 2013
Drug Safety Council: Action against Spurious and Not of Standard Quality (NSQ) drugs
Pharmaco-vigilance and Anti-microbial vigilance
Training of trainers of select individuals of all medical colleges on IPC and ASP
Indian Medical Association

BAN ANTIBIOTICS IN INDIAN POULTRY SECTOR, SAYS IMA

Jagran Post News Desk | Jagran Post Editorial | Last Updated: 02 Aug 2014, 15:47

IMA to ask doctors not to over-prescribe antibiotics

BINDU SHAJAN PERAPPADAN

"Self-medication is now a growing trend" The culprits are many and most of us know them by heart. So be it Erythromycin, Amoxicillin or Ciprofloxacin, self-medication with antibiotics is now a growing trend among the general population, warn doctors.

But this time around, the Indian Medical Association is not looking at targeting the general population to curb the ‘menace’. They are now proposing to aggressively target doctors to ensure that they don’t over-prescribe antibiotics.

On Sunday, the Association launched a nation-wide campaign which will include workshops, talks and a pledge on rational use of antibiotics being put up on the Association’s website that can be downloaded by doctors.

Related Articles

- Indian Medical Association panel to ensure drug quality
- Add Goel throws pitch for Tetra Pack’s fight to keep ‘food safe in India’
- Bacterial staphylococcus: Maharashtra Medical Officer Association calls on strike on Thursday
- Health policy beneficiaries suffering due to insurance firms
- Telangana doctors on collision course with IMA
- EARS awake campaign for rational antibiotic use ends
- Free blood to sickle cell, thalassemia patients

Featured Today in India

IMA will also ask fellow practitioners to avoid unnecessary prescriptions such as recommending antibiotics for patients with fever and cold which are generally caused by viral infections.

Advisory Body:

Internal Medicine, General Surgery, OB GYN and Pediatrics
## Kerala ASP Model (MCs, DHs, Pvt)

### ASP Calendar

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase</strong></td>
<td>Qr1 &amp; 2</td>
<td>Qr 3 &amp; 4</td>
<td>Qr1 &amp; 2</td>
</tr>
<tr>
<td><strong>Phase 1</strong></td>
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<td><strong>Phase 4</strong></td>
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<tr>
<td><strong>CQI</strong></td>
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</tr>
</tbody>
</table>

### Qr 1

| **Sensitization at State level** | **Sensitization at institutional level** | **Finalization of antibiotic policy** | **Compliance on antibiotic policy recorded** |

### Qr 2

| **Development of formats for collection of reports** | **Meeting of all concerned faculty members** | **Meeting of all concerned on finalized antibiotic policy** | **Compliance report shared** |

### Qr 3

| **Sensitization of microbiologists for preparing of antiograms** | **Format preparation for antibiotic policy** | **Format preparation on audit forms for antibiotic prescription** | **Antibiotic Justification (Peer review)** |

### Qr 4

| **Getting a rough draft on antibiotic policy (empirical & targeted)** | **Getting prospective audit started** | **Sharing of the pilot study with Institutional heads & State Govt** |  |
Bucks may stop here...

1) Top down approach:
   - Health Secy, DHS, DME, Mission Director sanction
   - **Govt order (GO)** to be issued
   - DM / DMO to follow up for each District
   - Supdt and HODs commitment
   - Medical College to become champions
What more can be done.....

2) Developing Antibiotic Policy:
   Patient type
   Site and type of infection
   Causative pathogens
   Sensitivity of antimicrobials
Labs need support.....

3) Strengthening Labs:
   - Procuring equipments
   - Standardized reporting
   - Trained manpower
   - Coordination with clinicians
Shared decision making....

4) Constitution of Empowered Committee:
   - IPC
   - ABS Committee
   - Champions: Administrators, Physicians, Intensivists, Microbiologists, ICNs, Pharmacy
   - National Data Repository (IDSP – Plus ??)
Steps towards ASP....

5) **Education & Sensitization:**
   - Antibiotic guidelines
   - Necessity of sending cultures
   - Presumptive therapy
   - Early initiation
   - Appropriateness: Dose, Duration, Route, PK/PD
   - De-escalation and IV to PO
   - Surgical Prophylaxis
Steps towards ASP....

6) Prospective Audit and Feedback:
   Documentation of clinical signs
   Appropriateness of clinical specimens
   Prescription in accordance to guidelines
   Review on Day....
   Adaptation of treatment as per the reports
   Evaluation of final outcomes
Wrap Up...Interventions to stop mis-use

- Education: CMEs
- Educating patients
- Issuing guidelines for appropriate use
- Strengthening Labs
- Clinico-lab coordinated decision making
Thank You