Improving Antimicrobial Use and Awareness in Korea

Submitted by: Asia Pacific Foundation for Infectious Diseases
Improving antimicrobial use and awareness in Korea

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Chief, Division of Infectious Diseases
Director, Center for Infection Prevention and Control, Samsung Medical Center

Secretary General, Asia Pacific Foundation for Infectious Diseases (APFID)
Outline

- Korean Healthcare System
- Appropriateness of antimicrobial usage
- Antimicrobial stewardship in the community
- Antimicrobial stewardship in hospitals
- Awareness
Korean Healthcare System

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary Hospital</td>
<td>44</td>
</tr>
<tr>
<td>(≥400 beds)</td>
<td></td>
</tr>
<tr>
<td>General Hospital</td>
<td>273</td>
</tr>
<tr>
<td>(100~399 beds)</td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>1,287</td>
</tr>
<tr>
<td>(30~99 beds)</td>
<td></td>
</tr>
<tr>
<td>Clinic</td>
<td>27,325</td>
</tr>
<tr>
<td>(&lt;30 beds)</td>
<td></td>
</tr>
</tbody>
</table>

June, 2010
Evidence of a Broken Healthcare Delivery System in Korea: Unnecessary Hospital Outpatient Utilization among Patients with a Single Chronic Disease Without Complications

“85% of patients received unnecessary hospital services”
Health care system in Korea

Medical service provider

Public sector

10%

Private sector

90%

Korean Healthcare System

1977 National Health Insurance

1989 Universal Health Insurance
2000 Pharmaceutical Policy Reform:
Separation of prescription and dispensation of drugs in outpatient care
Outline

• Korean Healthcare System
• Appropriateness of antimicrobial usage
• Antimicrobial stewardship in the community
• Antimicrobial stewardship in hospitals
• Awareness
Antimicrobial usage in Korea

Total antimicrobial consumption for human use in Korea

1997

DDD/1,000 habitants/day

33.2

OECD average
Antimicrobial usage in Korea

Sale of antibiotics
Through the pharmacy
Without prescription:

48.7% of total antibiotic consumption
Antimicrobial usage in Korea

Proportion of episodes prescribing antibiotics for URI (viral diseases)

Proportion (%)

Jan 2000

80.3

A retrospective study in Korea in 2004—only 0.8% of the patients who underwent a major surgery received appropriate prophylactic antibiotics. (Choi WS, et al. Infect Control Hosp Epidemiol 2007;28:997-1002)
• Korean Healthcare System

• Appropriateness of antimicrobial usage

• Antimicrobial stewardship in the community

• Antimicrobial stewardship in hospitals

• Awareness
No antibiotics without doctor’s prescription since 2000

Consumption of antibiotics:
Decrease by about 30%

A report from the Korea Institute for Health and Social Affairs
Antimicrobial stewardship in the community

Total antimicrobial consumption for human use in Korea

<table>
<thead>
<tr>
<th>Year</th>
<th>DDD/1,000 habitants/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>33.0</td>
</tr>
<tr>
<td>2003</td>
<td>27.0</td>
</tr>
<tr>
<td>2004</td>
<td>26.0</td>
</tr>
<tr>
<td>2005</td>
<td>25.0</td>
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<tr>
<td>2006</td>
<td>24.0</td>
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<tr>
<td>2007</td>
<td>22.0</td>
</tr>
<tr>
<td>2009</td>
<td>31.0</td>
</tr>
<tr>
<td>2010</td>
<td>28.0</td>
</tr>
</tbody>
</table>

OECD average

Separating drug prescription from dispensing

Korea Ministry of Health & Welfare
Antimicrobial stewardship in the community
Pharmaceutical policy reform in 2000

Change in proportion of episodes prescribing antibiotics for URI (viral diseases) after policy reform

Antimicrobial stewardship in the community
Assessment of antibiotic prescription for URI

Change in proportion of episodes prescribing antibiotics for acute URI after opening the data for each hospital to the public

![Graph showing change in proportion of episodes prescribing antibiotics for URI from 2002 to 2006.](chart.png)
Antimicrobial stewardship in the community
Assessment of antibiotic prescription for URI

<table>
<thead>
<tr>
<th>행생제</th>
<th>항생제 항목(으)로 총 12개 병원이 검색 되었습니다.</th>
</tr>
</thead>
<tbody>
<tr>
<td>전체(12)</td>
<td>상급종합(1)</td>
</tr>
<tr>
<td>11</td>
<td>강아비인후과의원</td>
</tr>
<tr>
<td>10</td>
<td>동선소아과의원</td>
</tr>
<tr>
<td>9</td>
<td>박종진이비인후과의원</td>
</tr>
<tr>
<td>8</td>
<td>삼성밖은안과의원</td>
</tr>
</tbody>
</table>

서울특별시 강남구 일원로 95 3층 (일원동, 신영프라자)
서울특별시 강남구 양재대로55길 631 2-1호 (일원동, 수서1단지상가)
서울특별시 강남구 일원로 33 (일원동)
서울특별시 강남구 일원로 95 501,502 호 (일원동, 신영프라자)
Domestic strategy and action plans

Goals 2015 - 2020

- Antimicrobial consumption 20%
- Antibiotic prescription rate for URI 50%
- Antibiotic prescription rate for respiratory disease 20%
- Enforcement of assessment of appropriateness of antibiotic use
- Development and distribution of antibiotic treatment guidelines
Treatment guideline for acute URI in children

(KCDC, Nov. 2016)
Outline

- Korean Healthcare System
- Appropriateness of antimicrobial usage
- Antimicrobial stewardship in the community
- Antimicrobial stewardship in hospitals
- Awareness
Antibiotic Treatment Guidelines

- Community-acquired pneumonia
- Urinary tract infection
- Cardiovascular infection
- Gastrointestinal infection
- Skin and soft tissue infection
- Bone and joint infection
- Central nervous system infection
- Sepsis
Antimicrobial stewardship in hospitals
Assessment of antibiotic use for surgical prophylaxis

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Use within 1 h before incision (%)</td>
<td>68.4</td>
<td>75.6</td>
<td>80.7</td>
<td>86.7</td>
<td>84.8</td>
<td>68.4</td>
<td>68.4</td>
</tr>
<tr>
<td>Use of AG (%)</td>
<td>38.6</td>
<td>32.3</td>
<td>26.5</td>
<td>11.6</td>
<td>4.8</td>
<td>14.5</td>
<td>10.1</td>
</tr>
<tr>
<td>Use of 3rd G Cepha. (%)</td>
<td>48.5</td>
<td>14.5</td>
<td>10.1</td>
<td>7.0</td>
<td>0.7</td>
<td>3.0</td>
<td>3.03</td>
</tr>
<tr>
<td>Combined use (%)</td>
<td>84.4</td>
<td>58.1</td>
<td>46.6</td>
<td>29.5</td>
<td>19.8</td>
<td>17.9</td>
<td>17.9</td>
</tr>
<tr>
<td>Antibiotics at discharge (%)</td>
<td>61.0</td>
<td>51.9</td>
<td>45.8</td>
<td>35.9</td>
<td>27.0</td>
<td>20.1</td>
<td>20.1</td>
</tr>
<tr>
<td>Avg. days of antibiotics</td>
<td>11.5</td>
<td>7.5</td>
<td>5.7</td>
<td>5.8</td>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Antimicrobial stewardship in hospitals
Assessment of antibiotic use for surgical prophylaxis
A Survey of Antimicrobial Stewardship Programs in Korea, 2015

54 hospitals with ID specialists
On-line survey, 2015

Hospital beds

- >1,000 beds: 22%
- 501-1,000 beds: 65%
- 200-500 beds: 13%

A Survey of Antimicrobial Stewardship Programs in Korea, 2015

54 hospitals with ID specialists
On-line survey, 2015

<table>
<thead>
<tr>
<th></th>
<th>2006 (n=44)</th>
<th>2012 (n=40)</th>
<th>2015 (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASPs</strong></td>
<td>95.5%</td>
<td>87.5%</td>
<td>92.6%</td>
</tr>
<tr>
<td><strong>Restriction on antibiotic use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selected reporting of antimicrobial susceptibility results</td>
<td>7 (16.7%)</td>
<td>7 (20.0%)</td>
<td>16 (32.0%)</td>
</tr>
<tr>
<td>Automatic stop order</td>
<td>17 (40.5%)</td>
<td>26 (52.0%)</td>
<td></td>
</tr>
<tr>
<td>Formulary restriction</td>
<td>10 (23.8%)</td>
<td>7 (20.0%)</td>
<td>9 (18.0%)</td>
</tr>
<tr>
<td>Restriction on inappropriate antibiotic combination</td>
<td></td>
<td></td>
<td>15 (30.0%)</td>
</tr>
<tr>
<td>Restriction on long-term antibiotic use</td>
<td></td>
<td></td>
<td>23 (46.0%)</td>
</tr>
<tr>
<td>Computerized system for control</td>
<td>26 (59.1%)</td>
<td>34 (85.0%)</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>
A Survey of Antimicrobial Stewardship Programs in Korea, 2015

### Antimicrobial stewardship in hospitals

**Computerized decision support system**

<table>
<thead>
<tr>
<th>Year</th>
<th>Hospital Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>Asan Medical Center</td>
</tr>
<tr>
<td>2002</td>
<td>Korea University Anam Hospital</td>
</tr>
<tr>
<td>2003</td>
<td>Samsung Medical Center (optional)</td>
</tr>
<tr>
<td>2003</td>
<td>Seoul National University</td>
</tr>
<tr>
<td></td>
<td>Bundang Hospital &amp; SNUH</td>
</tr>
<tr>
<td>2005</td>
<td>Dongkuk Univ. Ilsan Hospital</td>
</tr>
<tr>
<td>2006</td>
<td>Hallym University Medical Center</td>
</tr>
<tr>
<td></td>
<td>(5 hospitals)</td>
</tr>
<tr>
<td>2008</td>
<td>Samsung Medical Center (new ver.)</td>
</tr>
</tbody>
</table>

11 out of 44 tertiary hospitals
Korean Healthcare System

- Tertiary Hospital (≥400 beds)
- General Hospital (100~399 beds)
- Hospital (30~99 beds)
- Clinic (<30 beds)

- Healthcare Accreditation System
- Assessment of antibiotic prescription for URI
- Assessment of surgical antibiotic prophylaxis
- Antibiotic sub-committee
- Antibiotic restriction

June, 2010
Samsung Medical Center, Seoul, Korea

- 2,000-bed tertiary hospital
- Affiliated with Sungkyunkwan University School of Medicine

- 11 ID physicians (6 faculties & 5 fellows)
- 4 Ped. ID physicians (1 faculty & 3 fellows)
- 2 Clinical microbiologists
- 1 Pharmacist
- Antimicrobial Stewardship Committee
Antimicrobial formulary restriction

Determining antimicrobials requiring approval

Antimicrobial Stewardship Committee
Samsung Medical Center

Reviewing antimicrobial usage data

Reviewing antimicrobial resistance of major pathogens
Approval systems in SMC

**Post-prescription**
- Carbapenems
- Glycopeptides
- Linezolid
- Amikacin
- Aztreonam
- Arbekacin
- Colistin
- Tigecycline

**Pre-prescription**
- Liposomal amphotericin B
- Itraconazole IV
- Voriconazole
- Posaconazole
- Caspofungin
- Micafungin
- Anidulafungin
- Valganciclovir
Samsung Integrated Antimicrobial Stewardship System

SIASS

Samsung Antimicrobial Use Evaluation System (SAUSES)

Samsung Antimicrobial Resistance Monitoring System (SAREMS)

Samsung Antibiotic Prescription System (SAPS)
Samsung Antibiotic Prescription System (SAPS)

Empiric Prophylactic Definitive

Search

Target organisms

Antimicrobials

Order Adults

Estimated Ccr

Remarks

Duration

Dx.

Select

Select

SAMSUNG MEDICAL CENTER
## Samsung Antibiotic Prescription System (SAPS)

The Samsung Antibiotic Prescription System (SAPS) is a software tool designed to assist healthcare professionals in selecting appropriate antibiotics for various infections. It provides a comprehensive database of target organisms, antimicrobials, and dosage information to aid in empiric therapy.

### Diagnosis for empiric therapy

- **Bone & joint infections**
- **Cardiothoracic infections**
- **CNS infections**
  - **Meningitis**
    - Age 15-50 years
    - Age > 50 years / Alcoholism / Impaired
    - Post-neurosurgery
    - Post-head trauma
    - VP shunt infection
  - **Positive CSF Gram stains**
  - **Positive CSF cultures**
- **Brain abscesses**
- **Subdural empyema**
- **Cerebellar abscess**
- **Encephalitis**
- **Neurocysticercosis**
- **ENT infections**
- **Eye infections**
- **Gastrointestinal infections**
- **Genital tract infections: female**
- **Genital tract infections: male**
- **Oral cavity, head and neck infections**
- **Respiratory tract infections**
- **Sexually transmitted diseases**
- **Skin & soft tissue infections**
- **Urinary tract infections**

### Target organisms

- **Streptococcus pneumoniae**
- **Gram-negative bacilli**
- **Listeria monocytogenes**

### Antimicrobials

**Antimicrobials**

1. Vancomycin (inj) + Ceftriaxone (inj)
2. Vancomycin (inj) + Ceftriaxone (inj) + Ampicillin (inj)

### Order

<table>
<thead>
<tr>
<th>Code</th>
<th>Product</th>
<th>Antimicrobial</th>
<th>Content</th>
<th>Unit</th>
<th>Dose</th>
<th>Freq</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYVNC1</td>
<td>씨제이 염소반(QStringLiteral)</td>
<td>Vancomycin (iv)</td>
<td>1 g</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1 IV</td>
</tr>
<tr>
<td>X50W2</td>
<td>씨제이 5% 포도당 주사</td>
<td>200 ml</td>
<td>200</td>
<td>2</td>
<td>1 IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XCRX2</td>
<td>셰프트리약존 주 2g</td>
<td>Ceftriaxone</td>
<td>2 g</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>IV</td>
</tr>
<tr>
<td>XAMP</td>
<td>펜브랙스 주사 500mg</td>
<td>Ampicillin (iv)</td>
<td>500 mg</td>
<td>500</td>
<td>4</td>
<td>1</td>
<td>INF</td>
</tr>
</tbody>
</table>

**Estimated Ccr**: 61.58 ml/min

### Remarks

- **Duration**: 21 d
- **Dx.**: 600.9
- **Bacterial meningitis**

---

*SAMSUNG MEDICAL CENTER*
## Selection of Antimicrobials

<table>
<thead>
<tr>
<th>Vancomycin (inj)</th>
<th>Ceftriaxone (inj)</th>
<th>Ampicillin (inj)</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Others

- Primaquine
- Prothionamide
- Pyrazinamide
- Pyrazinamide
- Quinupristin/dalfopristin
- Ribavirin
- Rifabutin
- Rifampicin
- Rifampicin
- Rifampicin
- Roxithromycin
- Saxacillin

### Reason for choosing others

01 교과서적으로 지정된 허용하는 경우
02 추천 항생제를 사용하더라도 추가로 이 항생제의 복용이 필요하다
03 추천 항생제에 대한 부작용으로 인해 기타 항생제 처방이 불가피함
04 교과서적인 처방이 아닌 경우만 이 환자에서 처방이 필요함
09 기타(직접 입력)
Samsung Antibiotic Prescription System (SAPS)

Prophylactic antibiotics

- Surgical prophylaxis
  - Dental
  - ENT
  - GS
  - NS
  - OB/GY
  - OS
  - Ophthalmic surgery
  - PS
  - TS
  - Urologic surgery
- Procedural prophylaxis
- Post-exposure prophylaxis (PEP)
- Chemoprophylaxis
- Active immunization (Vaccination)
- Passive immunizations
- Travel medicine
Samsung Antibiotic Prescription System (SAPS)

Prophylactic antibiotics

Operation or procedure:
- Surgical prophylaxis
  - Dental
  - ENT
  - GS
  - NS
  - DB/GY
  - DS
  - Ophthamic surgery
  - PS
  - TS
- Diaphragm
- Chest wall
- Esophagus
- Heart
  - CABG with autograft (CL)
  - Correction of CHD (CL)
  - Others (CL)
  - CABG with artificial graft (CL)
  - Correction of CHD with artificial g
  - Valvular repair (CL)
  - Valvular replacement (CL)
  - Ventricular wall aneurysmectomy (CL)
  - Intracardiac thrombi removal (CL)
  - Others with implant (CL)
- Mediastinum

Prev. orders:
- duration
  - 2 d

Search:
- Empirical
- Prophylactic
- Definitive
- Prev. orders

Checkmark:
- duration

SAMSUNG MEDICAL CENTER
Definitive antibiotic therapy

<table>
<thead>
<tr>
<th>Culture requested</th>
<th>Culture report</th>
<th>Select antibiotics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Many Gram positive cocci. WBC: &gt; 10 /HPF</td>
<td>Staphylococcus aureus Oxacillin</td>
</tr>
<tr>
<td></td>
<td>Epithelial cell: 0 - 1 /HPF</td>
<td>Clindamycin S &lt;=0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Erythromycin S &lt;=0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fusidic acid S &lt;=0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gentamicin S &lt;=0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rifampin S &lt;=0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tetracycline S &lt;=1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trimethoprim S &lt;=10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prev. orders</th>
<th>Culture report</th>
<th>Select antibiotics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Isolate: #01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organism: Staphylococcus aureus, many</td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<td></td>
<td>Isolate: #01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organism: Staphylococcus aureus, many</td>
<td></td>
</tr>
</tbody>
</table>
Definitive antibiotic therapy

Selection of antibiotics based on susceptibility

<table>
<thead>
<tr>
<th>Select</th>
<th>Microorganism</th>
<th>Antibiotic</th>
<th>RIS</th>
<th>MIC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staphylococcus aureus</td>
<td>Oxacillin</td>
<td>S</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Clindamycin</td>
<td>S</td>
<td>&lt;=0.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Erythromycin</td>
<td>S</td>
<td>&lt;=0.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fusidic acid</td>
<td>S</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gentamicin</td>
<td>S</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rifampin</td>
<td>S</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tetracycline</td>
<td>S</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trimethoprim/Sulfamethoxazole</td>
<td>S</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ciprofloxacin</td>
<td>S</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Levofloxacin</td>
<td>S</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moxifloxacin</td>
<td>S</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nebekacin</td>
<td>S</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teicoplanin</td>
<td>S</td>
<td>&lt;=0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vancomycin</td>
<td>S</td>
<td>&lt;=1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linezolid</td>
<td>S</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quinupristin/Dalfopristin</td>
<td>S</td>
<td>&lt;=0.25</td>
<td></td>
</tr>
</tbody>
</table>
Samsung Antibiotic Prescription System (SAPS)

- Total
  - Third G cephalosporin
- Aminoglycoside
- Vancomycin

ESBL + *E. coli*

Meropenem-resistant *Pseudomonas aeruginosa*

MRSA

Outline

• Korean Healthcare System
• Appropriateness of antimicrobial usage
• Antimicrobial stewardship in the community
• Antimicrobial stewardship in hospitals
• Awareness
Q1) Do you think taking antibiotics improve the condition of having a cold?

Q2) When your ill symptoms improve after taking prescribed antibiotics, do you think it is okay to stop taking antibiotics?

Q3) Have you ever taken any antibiotics that have been kept at home for treating fever without visiting a doctor?

[Song JH. KFDA. 2010]
[Song JH. KCDC. 2012]
[APFID. 2015]
Public Campaign

The Korean Society of Infectious Diseases
The Korean Society for Chemotherapy

2011-2012

Supported by

Korea CDC
The Korean Society of Pediatric Infectious Diseases
Asia Pacific Foundation for Infectious Diseases (APFID)
항생제 올바로 쓰기 캠페인은
대한감염학회, 대한화학요법학회에서 주관하는 항생제 내성 극복을 위한 캠페인입니다.

항생제 내성의 심각성
세계보건기구(WHO)는 지금 미루기 가능한 많은 감염증들의 치료가 10년후에는 불가능해질 수 있다고 경고합니다.

감기와 항생제
감기는 바이러스에 의한 질환으로 항생제를 쓰는 것은 효과가 없습니다.
신중하고, 올바른 사용이 필요합니다.

미션
항생제 올바로 쓰기를 통한 항생제 내성 역제의 방법으로 국민보건 정상화 기여적

비전
한국과 외국인들의 향양에 대한 항생제 내성 문제의 극복에 도움을 주고자 합니다.

이 캠페인은 질병관리본부, 한국소아감염병학회, 아시아 대생양 길의재단에서 후원합니다. 일부 자료는 아시아 대생양 길의재단의 Case 캠페인(www.icaseproject.org)에서 지원하였습니다.
Public Campaign
Public Campaign

e-learning

Appropriate use of antibiotics

01 Antibiotics are not a cure-all
02 Appropriate use of antibiotics is most important
03 Antibiotic resistance prevention starts with these basics tips
Public Campaign

e-learning
Public Campaign

Education of school nurses
WORLD ANTIBIOTIC AWARENESS WEEK
14-20 NOVEMBER 2016

항생제 내성예방
2016. 11. 14.(월) 14:00-17:00
서울여성의료가 이트을 뿌리(서울 동작구)

항생제는 감기도 아닙니다

항생제 내성예방 캠페인
2016.11.14.(월) 14:00-17:00
서울여성의료가 이트을 뿌리(서울 동작구)
Summary

- Pharmaceutical policy reform separating prescription and dispensation of drugs, assessment and public reporting of antibiotic prescription rate for URI and surgical antibiotic prophylaxis for each institution have been very effective to improve antibiotic usage.

- Antimicrobial stewardship programs in hospitals, mostly dependent on restriction and approval system have been used in most tertiary hospitals and a small proportion of general hospitals.

- Computerized decision support system for antibiotic prescription has been developed and utilized successfully in some tertiary hospitals.

- Public campaign for appropriate antibiotic use has been launched and will be in alignment with implementation of domestic action plans.