OBJECTIVES

- Russian experience in the field of AB use and consumption surveillance
- Current landscape and barriers for AB utilization research
- Prospects of future collaboration
AB USE SURVEILLANCE: CONTRIBUTION OF EUROPEAN COLLABORATION

- AB consumption at European level, cross comparison between countries (1998-2001)
- ATC/DDD methodology acknowledgement and broad implementation
- AB use qualitative studies involvement and support (e.g. CHILDURG project)
AB USE SURVEILLANCE: CONTRIBUTION OF EUROPEAN COLLABORATION

- Continuous AM consumption surveillance in Europe (2001-2011)
- Point-prevalence surveys of AM use in hospitalized adults
- AM prescribing in nursing homes
- Quality appraisal of outpatient AB use (drug-specific quality indicators)
OUTPATIENT AB CONSUMPTION: RUSSIA vs EUROPEAN COUNTRIES, 2009

- DDD – defined daily dose
- OUTPATIENT AB CONSUMPTION: RUSSIA vs EUROPEAN COUNTRIES, 2009

Graph showing the consumption of different antibiotic classes in various countries. The y-axis represents DDD (defined daily dose) per 1000 inhabitants per day, ranging from 0 to 40. The x-axis lists countries, including GR, CY, FR, IT, LU, EE, SK, PL, PT, IL, MT, HR, IE, LT, ES, IS, 3G, CZ, FI, UK, HU, DK, AT, NO, DE, SI, SE, RU, NL, EE, LV, RO.

Legend:
- Other J01 classes (J01B+J01G+J01R+J01X)
- Sulfonamides and trimethoprim (J01E)
- Quinolones (J01M)
- Macrolides, lincosamides and streptogramins (J01F)
- Tetracyclines (J01A)
- Cephalosporins and other beta-lactams (J01D)
- Penicillins (J01C)

HOSPITAL AB CONSUMPTION: RUSSIA vs EUROPEAN COUNTRIES, 2009

ANTIBIOTIC CONSUMPTION TRENDS IN RUSSIA, 2003-2013

* DDD – defined daily dose

TRENDS OF OUTPATIENT ANTIBIOTIC CONSUMPTION IN RUSSIA, 2003-2013

* DDD – defined daily dose

- Other J01 classes
- Aminoglicosides (J01G)
- Sulfonamides and trimethoprim (J01E)
- Quinolones (J01M)
- Macrolides, lincosamides, streptogramins (J01F)
- Tetracyclines (J01A)
- Cephalosporins (J01DB-E)
- Carbapen, monobact (J01DF-H)
- Penicillins (J01C)

2. Data on file, 2015
TRENDS OF HOSPITAL ANTIMICROBIAL CONSUMPTION IN RUSSIA, 2003-2013

2. Data on file, 2015
SURVEILLANCE OF SYSTEMIC ANTIMICROBIALS USE AND PRESCRIPTION PATTERNS IN RUSSIA

Cross-sectional multi-center studies:

- Patterns of AM use in patients with CAP, upper RTI, UTI, sepsis, IAI, urogenital infections, SSTI, NI, perioperative prophylaxis
- Patterns of AM use in special groups of patients (pregnancy, early childhood)
- Delivery of care to adult patients with community acquired pneumonia: experience with the quality indicators
- Dispensing systemic AM for RTI by drug store personnel
- Optimization of systemic AM usage in multi-profile hospitals in Russia (OPTIMA project)
- Surveillance of AM usage in nosocomial infections (MARAPHON project), etc...
MAIN ISSUES OF ANTIMICROBIAL USAGE IN RUSSIA

Outpatients:

- High frequency of inappropriate AM prescription for infections with suspected viral origin
- Inappropriate empirical AM choice, inadequate regimens of therapy (dose, frequency, length of course)
- Common practice of self-medication with AM (RTI, urethritis, UTI)

Inpatients:

- High frequency of inappropriate AM prescription (medical/prolonged surgical prophylaxis)
- Inappropriate AM choice for empirical and targeted therapy, inadequate regimens of therapy (dose, frequency, length of course, combinations)
- Insufficient/inadequate culture & susceptibility testing
4952 children, 52% male, mean age 5.0±3.7 y.o., common cold (71%), acute bronchitis (10%), acute tonsillitis (7%), acute otitis media (4%), acute sinusitis (3%), CAP (2%), others (3%)

Patients with >1AB prescription

Common cold 68%
Acute otitis media 85%
Acute tonsillitis 92%
Acute bronchitis 94%

SELF-MEDICATION WITH ANTIBIOTICS IN SMOLENSK REGION, 2014-2015

N=615

“Do you have antibiotics at home medicine cabinet?”

<table>
<thead>
<tr>
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<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>%</td>
<td>38</td>
<td>62</td>
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</table>

“Do you take antibiotics without prescription?”

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>57</td>
<td>43</td>
</tr>
</tbody>
</table>
CONTINUOUS SURVEILLANCE OF AM USE IN MULTI-FIELD RUSSIAN HOSPITALS

OPTIMA project - long-term on-line surveillance of AM consumption and expenditures and patterns of their usage in the network of secondary care hospitals

22 hospitals in 16 cities
BENEFITS FOR “OPTIMA” PROJECT PARTICIPANTS

• To collect the data on systemic AM consumption and expenditures on the hospital level (ATC/DDD methodology, consumption expressed in DDD/100 bed-days)

• To collect the data on systemic AM consumption and expenditures in selected departments (high consumption/ expenditures, high rate of irrational prescriptions, education interventions, etc.)

• To stratify AM according to the patients profile (department level), resistance patterns, restriction policy into first choice, second choice, inappropriate options

• To perform continuous or selected audit of prescriptions (type of disease or AM, group of patients, etc.)
  - Technical and experts support
  - Self-generated reports for AM consumption & expenditures
  - Regular updates of ATC/DDD methodology, trade names of AM


MAIN GOAL

- Reduce misuse of systemic antimicrobials in outpatients with respiratory tract infections
TARGET GROUPS

• Primary care physicians (GPs, pediatricians, ENT specialists), medical students
• Drug store personnel
• Patients/parents of children with RTI
• General public
• Students
Антибиотик — надёжное оружие, если цель — бактериальная инфекция

Цель данной информационной кампании — увеличение числа уместных случаев умственного использования системных антибиотиков при респираторных инфекциях у детей и взрослых в возрастной группе.

Врачу

Инфекции верхних дыхательных путей и ЛОР-органов, такие как ринит, фарингит, риносinusит, средний отит относятся к наиболее распространенным заболеваниям в обычной медицине.

Провизору

Системные антибиотики в России, как и большинстве развитых стран мира, относятся к лекарственным препаратам рецептурного отпуска, однако это требование далеко не всегда соблюдается.

Пациенту

Антибиотики — это продукты жизнедеятельности микроорганизмов (чаще всего грибов) и их синтетические производные. Они либо истребляют гибель бактерий, либо препятствуют их росту.
STUDENTS AS A TARGET GROUP OF THE CAMPAIGN

Flash mob

Social media

Lectures delivered by Prof. R. Kozlov

Video and printed materials
POTENTIAL BARRIERS FOR AM USE SURVEILLANCE IN RUSSIA

- Shortage of electronic records of prescriptions
- Lack of clear program and appointed personnel to perform long-term AM use monitoring
- Insufficient support from decision makers
- Restricted funding from health care authorities
• Antimicrobials use surveillance in food animals
• Experts support in development and validation of drug-specific and/or diseases-specific quality indicators
• Experts review of antibiotic expert system based on clinical decision support algorithms
CLINICAL DECISION SUPPORT SYSTEM FOR AB USE IN HOSPITALS

- Patient-specific data
- Laboratory information system
- X-ray, ECG reports, etc.
- Pharmacy system

Clinical database

Knowledge database

Clinical decision support engine

Output: Medical decision

- appropriate AMs choice incl. PAP
- clinical standards compliance
- safety of AMT
- hospital-wide implementation of AMS
- inefficient expenditures for AMT