Building Capacity
for Integrated Surveillance of Antimicrobial Resistance

WHO approach

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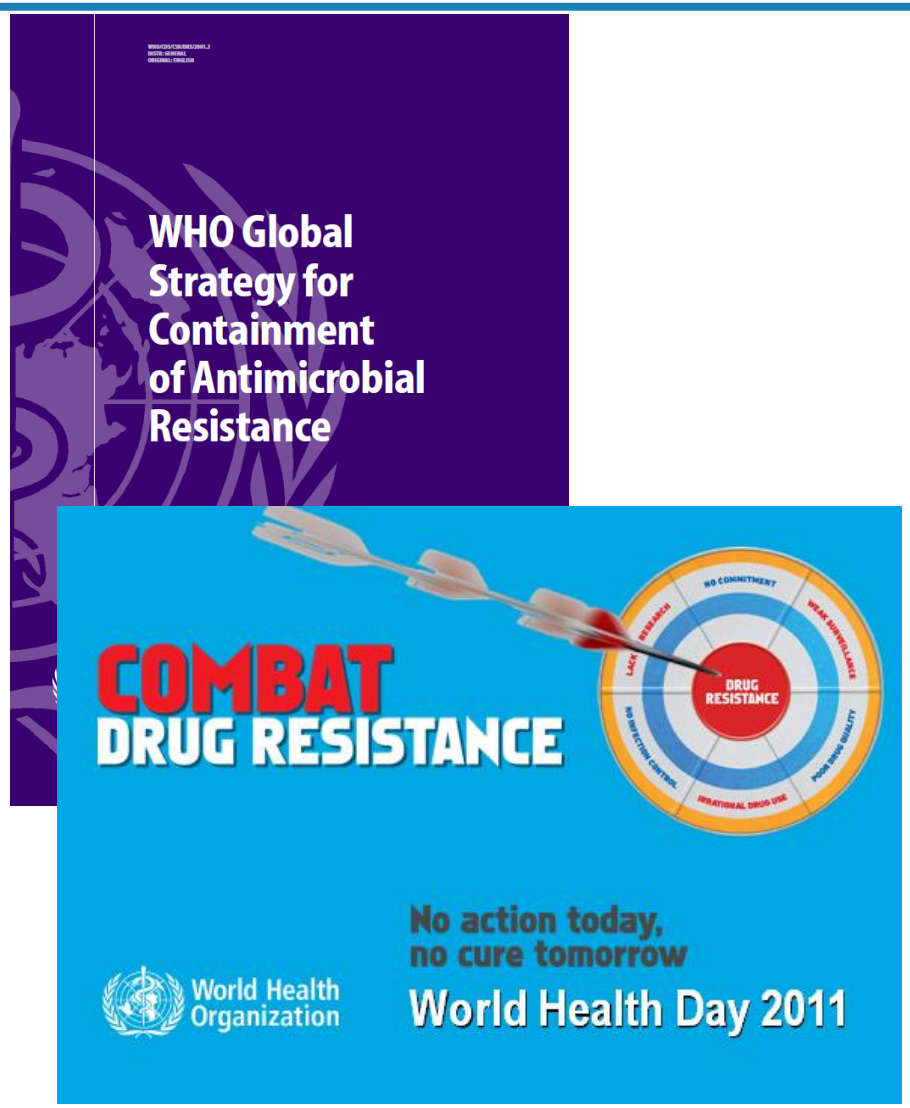
WHO AMR Containment Strategy



- Comprehensive national plans, accountability, civil society engagement
- Strengthen surveillance and laboratory capacity
- Access to essential medicines of assured quality
- Rational use of medicines
- Enhance infection prevention and control
- Foster innovation and R&D for new tools

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Capacity Building -AMR from Food Chain

- Trough the Global Foodborne Infections Network (GFN)
  - Training courses
  - External Quality Assurance Systems (EQAS)
  - Reference services
  - Focused research projects
  - Tools and protocols

- Trough the WHO-Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR)
  - Country pilot projects
  - Focused research projects
  - Technical support to WHO member countries for setting up a national program for integrated surveillance of AMR

Global Foodborne Infections Network

A network of institutions and individuals working in veterinary, food and public health disciplines committed to enhancing capacity of countries to conduct integrated foodborne and other enteric infections surveillance

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GFN Mission and steering committee

- Enhance the capacity of countries to detect, respond, and prevent foodborne and other enteric infections (inc.AMR).
- Foster intersectoral collaboration
  - human health, veterinary, and food-related disciplines
- To promote integrated, laboratory-based surveillance

GFN Steering Committee

oz food net
CDC Centers for Disease Control and Prevention
World Health Organization
international network Institut Pasteur
DTU Food National Food Institute
Public Health Agency of Canada / Agence de la santé publique du Canada
FDA
ecdc European Centre for Disease Prevention and Control
Central Veterinary Institute Wageningen UR
PulseNet International — The International Molecular Subtyping Network for Foodborne Disease Surveillance

GFN main activities

- (Inter)national Training Activities
- External Quality Assurance System (EQAS)
- Country Data Bank (CDB)
- Focused Regional and National Projects
- Reference Services
- Communication

- ~ 1 400 Members
- > 700 Institutions
- 166 Member States

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International Training Courses

Microbiology training

- *Salmonella* diagnostics
- *Campylobacter* diagnostics
- Region-specific pathogens
  (e.g. *E. coli O157, Vibrio Cholerae, S. Typhi, Bacillus anthracis, Brucella, Shigella*)
- Antimicrobial Susceptibility Testing

Epidemiology training

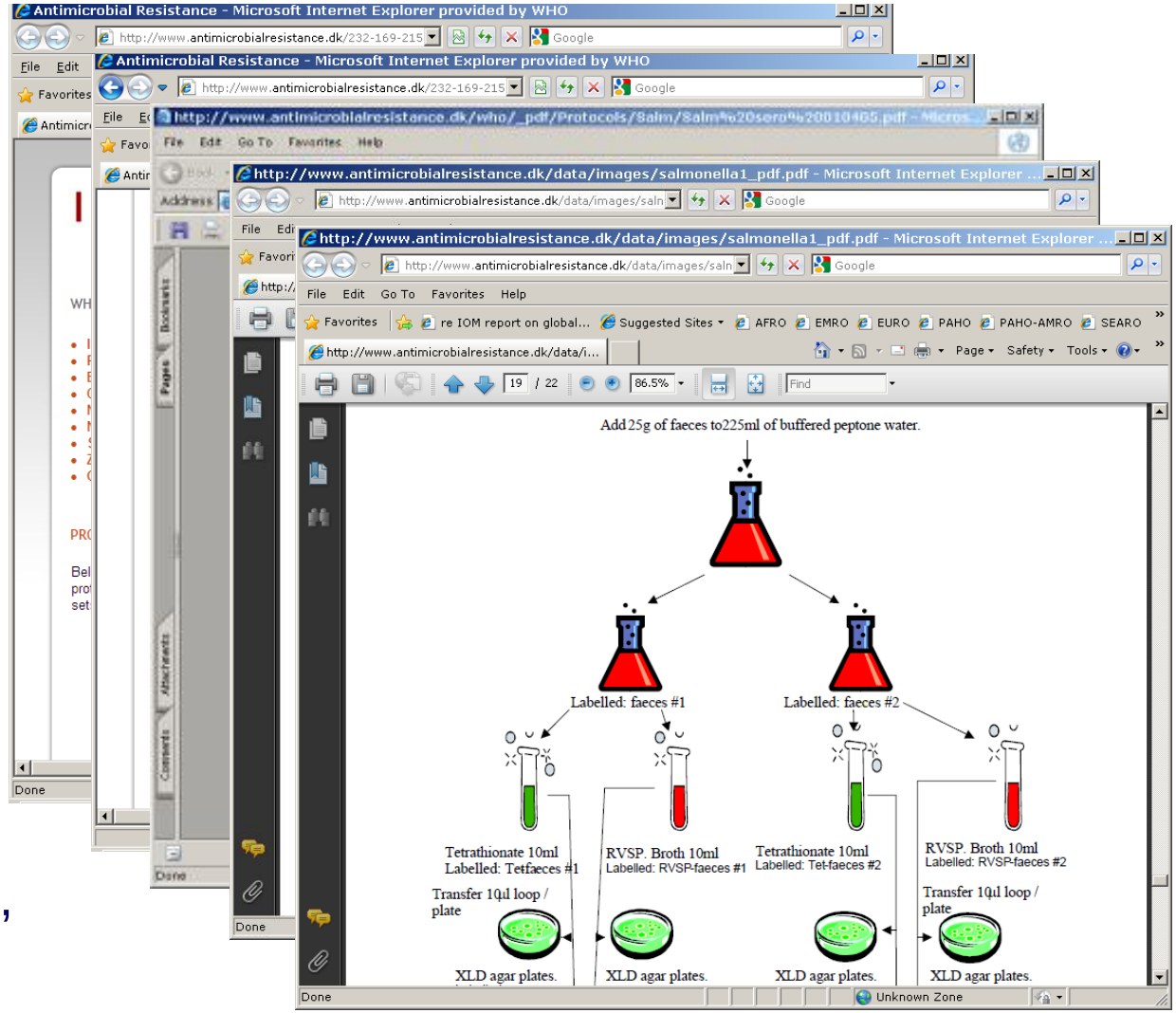
- Outbreak detection and response
- Evaluation of surveillance systems
- Study design
- Source attribution
- Burden of disease

Joint Epidemiology and Laboratory

- Integrated surveillance
- Risk assessment
- Country Plans of Action
- Advocacy and communication
- Information sharing networks

GFN Laboratory Manuals

- By pathogen
  - *Salmonella*
  - *Campylobacter*
  - *E. coli O157*
  - *Shigella*
- By basic and molecular methods
  - Isolation, ID, Serotyping
  - AST, PCR, PFGE
- Various languages
  - English, French, Spanish, Russian, Chinese



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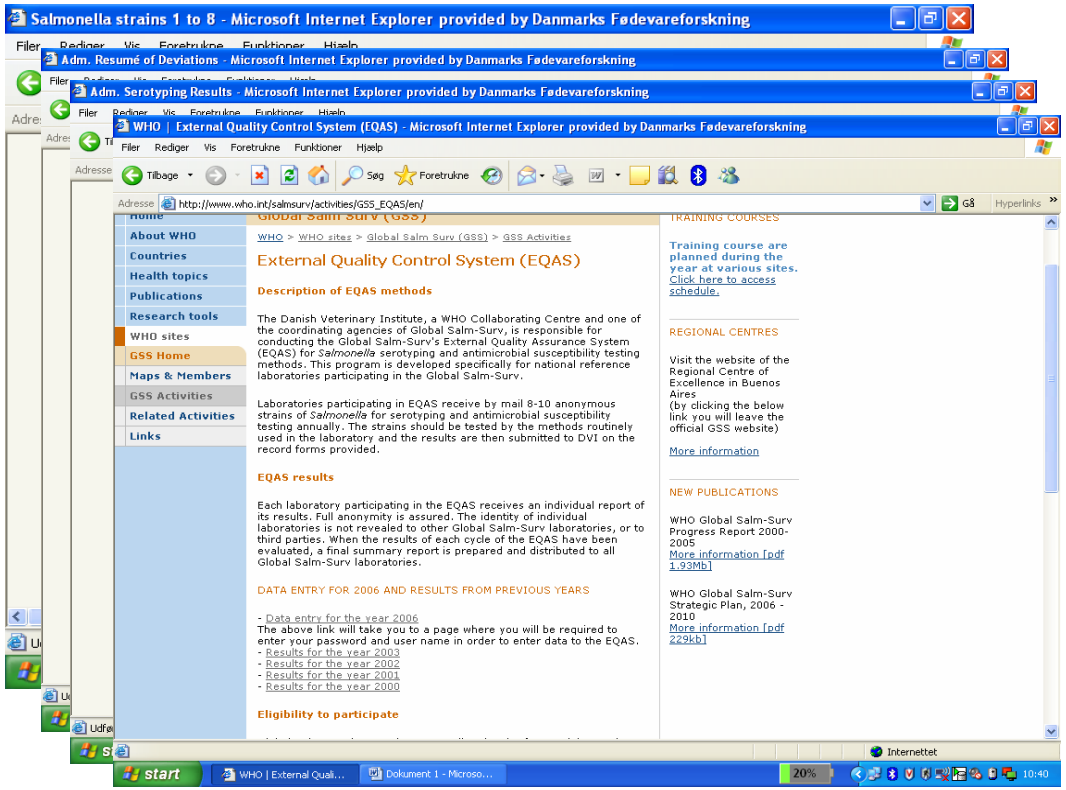
GFN External Quality Assurance System

- ~ 150 labs from ~ 80 countries participate annually

- Proficiency test
  - Serotyping / AST *Salmonella* strains
  - Id of 2 *Campylobacter* strains
  - 1 blank sample
  - Supplier of ref. strain ATCC 25922

- Results
  - submitted through secure website
  - Instant individual evaluation reports

- Yearly over-all evaluation reports posted on the web



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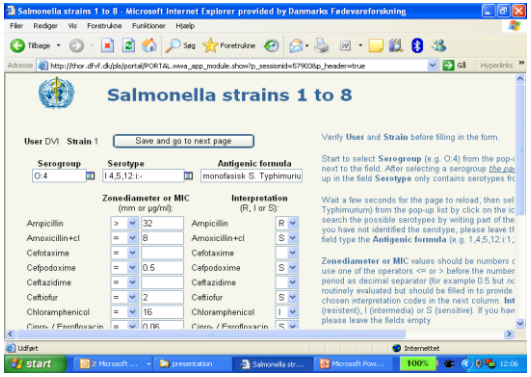
Opportunities to Apply Skills from Training



External Quality Assurance System

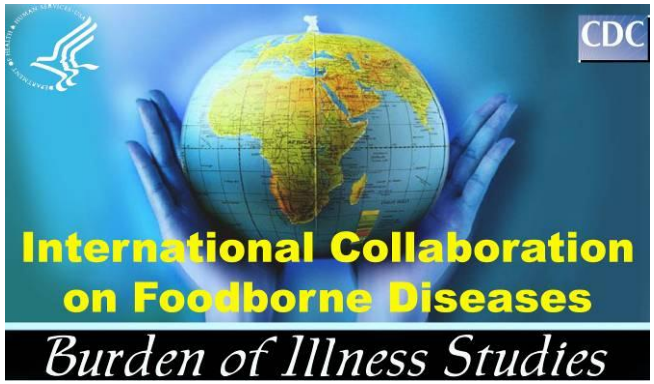
- Results entered at secured website
- Instant report with suggestions for corrective action

Focused Regional /National Projects

- Pathogen-specific Projects (e.g. S Weltevreden, S Lamphun, S Corvalis)
- Burden of Illness Studies (e.g. Jordan, Slovenia, the Caribbean)
- Enhanced Surveillance Studies (e.g. China, Fiji, Philippines, Kazakhstan)

Reference Services

- Verification of findings
- Reply to questions
- Individual lab. courses or site visits
- Participation in regional projects



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Examples of Regional and National Projects

- *S.*Weltevreden: Characterization by PFGE and risk factor study – Southeast Asia, Western Pacific, North America and Denmark.
- *S.*Corvallis: Characterization of ESBL resistance and clonality – Bulgaria, Thailand and Denmark.
- *S.* Concord*:* description of spread of multidrug resistant S. Concord in Europe and the US among children adopted from Ethiopia
- *S.*Typhimurium: Characterization of ESBL resistance and clonality - Gomel region, Belarus.
- *S.*Schwarzengrund: Clonality study in relation to trade in strains from Thailand, Denmark and the US.
- *Campylobacter spp.:* MIC determination of strains collected by AFRIMS in Thailand.

Communication

Electronic Discussion Group

- Moderated listserv in English, Spanish, French, Portugese, Chinese, Russian
- Since 2000 ca. 200 messages sent on foodborne diseases, programmatic issues, training information, and outbreaks

Newsletter

- Update on GFN activities
- In English, French, Chinese, Spanish, Arabic

Web sites

- www.who.int/salmsurv/en/ (English)
- www.panalimentos.org/salmsurv/ (Spanish)
- whogss.eu (English)
- www.antimicrobialresistance.dk/who/protocols.html (laboratory protocols, English)

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Perspectives

- Assure sustainability
- Liaise with other WHO and International Health Regulation (IHR) activities
  - Help countries meet IHR core-capacities
- Liaise with FAO, OIE and others (e.g. EFSA)
- Increase input to the CDB
- Increase impact
  - National and regional political support
  - Region-relevant programme
  - Participants (train-the-trainer)
- Increase output of programme
  - Update and translate training manuals
  - Newsletter, update website(s), EDG messages, articles, social media

Perspectives

- Regionalize activities
- Target new geographical areas for training and EQAS
- Capacity-building platform
  - IHR (i.e. core capacities)
  - One Health
  - E-learning
  - Burden of Disease
  - Early Warning & Emergency Communication (i.e. INFOSAN, GLEWS, FOSCOLLAB)

- More information:

www.who.int/salmsurv

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Advisory Group on Integrated Surveillance of Antimicrobial Resistance - AGISAR

Tackling foodborne antimicrobial resistance through integrated surveillance

- 31 Members, FAO, OIE
- Subcommittees
  - Antimicrobial Usage Monitoring
  - Antimicrobial Resistance Surveillance
  - Capacity Building & Pilot Projects
  - Data Management and Communication
- Technical support:
  - Monitoring Usage in Animals and Human.
  - Surveillance of AMR in animals, food and humans.
  - Data analysis/integration to support policy

AGISAR Country Pilot Projects Objectives

- Supplement the work of AGISAR by providing data from various parts of the world, particularly from developing countries.
- Contribute in strengthening the capacities of countries to establish their own program on integrated surveillance of AMR and antimicrobial drug use.
- Foster communication and collaboration between animal, food and health sectors.
- Increase awareness and commitment among countries to implement strategies for prevention and control of foodborne diseases and containment of AMR.
- Use data generated at country level to influence policy

Key achievements in 2011-2012

- • AMR projects currently conducted in
  - oLatin America (Uruguay Paraguay, Argentina, Venezuela and Costa Rica)
  - oAsia (Cambodia)
  - oAfrica (Burkina Faso, Cameroon, Senegal)
- • Kenya country pilot project finalized with tangible outputs ; establishment of a national cross –sectoral AMR task force and development of national guidelines on prudent use of antibiotics in food producing animals
- • AMR Training has been provided (through GFN) over 200 microbiologists /epidemiologists more than 60 countries yearly.
- • Customization of WHONET for surveillance of enteric pathogens from food and animal sources
- • Guidance documents on integrated surveillance of AMR finalized

Plans for 2013-2014

- New country pilot projects : Kosovo, Lebanon, India, Vietnam (Aquaculture)
- New Focused projects : Tanzania, Ethiopia, Sri Lanka
- Start AMR data collection using the customized WHONET
- New Edition of the WHO list of Critically Important Antimicrobials (AGISAR annual meeting, Colombia, Sept 2013)
- Expert advice to WHO member countries for setting up a national program on integrated surveillance of AMR
- AMR trainings through GFN

Thank you for your attention

More information at :

www.agisar.org•

http://www.who.int/foodborne_disease/resistance/agisar/en/index.html•

http://www.who.int/gfn/en/index.html•