



Joint Programming Initiative on Antimicrobial Resistance

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- JPIAMR – background, members, governance etc
- Priorities and implementation
- International cooperation
- Comments on the proposed governance of the EU-CELAC *Joint Initiative on Research and Innovation*

Why Joint Programming?

Establishing the ERA – “a European research area in which researchers, scientific knowledge and technology circulate freely, and encouraging it to become more competitive...” */

Addressing the grand challenges

Structural
Societal
Scientific
Health



*The time may come when penicillin can be bought by anyone in the shops. Then there is the danger that the ignorant man may easily underdose himself **and by exposing his microbes to non-lethal quantities of the drug make them resistant.***

Alexander Fleming, 1945

Total antibiotic use DDD / 1000 population/day



World Health
Organization

***Antibiotic resistance:
"One of the Greatest Threats
to Public Health***

***A major societal challenge
requiring joint and coordinated
actions***

JPIAMR – background, members, governance etc

The Vision

In the next fifteen years, a significant number of Member States and Associated Countries will be required to focus on a specific research area

in the field of antimicrobial resistance, the best European research and necessary clinical and scientific and antimicrobial research leading to new drugs for infectious diseases.

“...the focus of this JPI should be on **bacterial antibiotic resistance** and **human medicine** and that both basic and applied research is relevant. However, **veterinary medicine with relevance to humans should be included** and no areas or pathogens should specifically be excluded at this stage.

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(From the Vision Document, April 14, 2011)



The Joint Programming Initiative
on Antimicrobial Resistance

- 2009 First proposal for a future JPI
- 2010 Formal proposal submitted
- 2011 Formally established
- 2013 Strategic Research Agenda adopted
- 2014 First Joint Call
- 2014- Implementation phase

JPIAMR Participating countries (19)



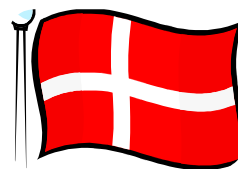
Belgium



Canada



Czech
Republic

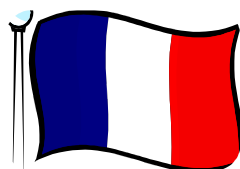


Denmark



Finland

+ European
Commisson



France



Germany



Greece



Israel



Italy



Netherlands



Norway



Poland



Romania



Spain



Sweden



Switzerland



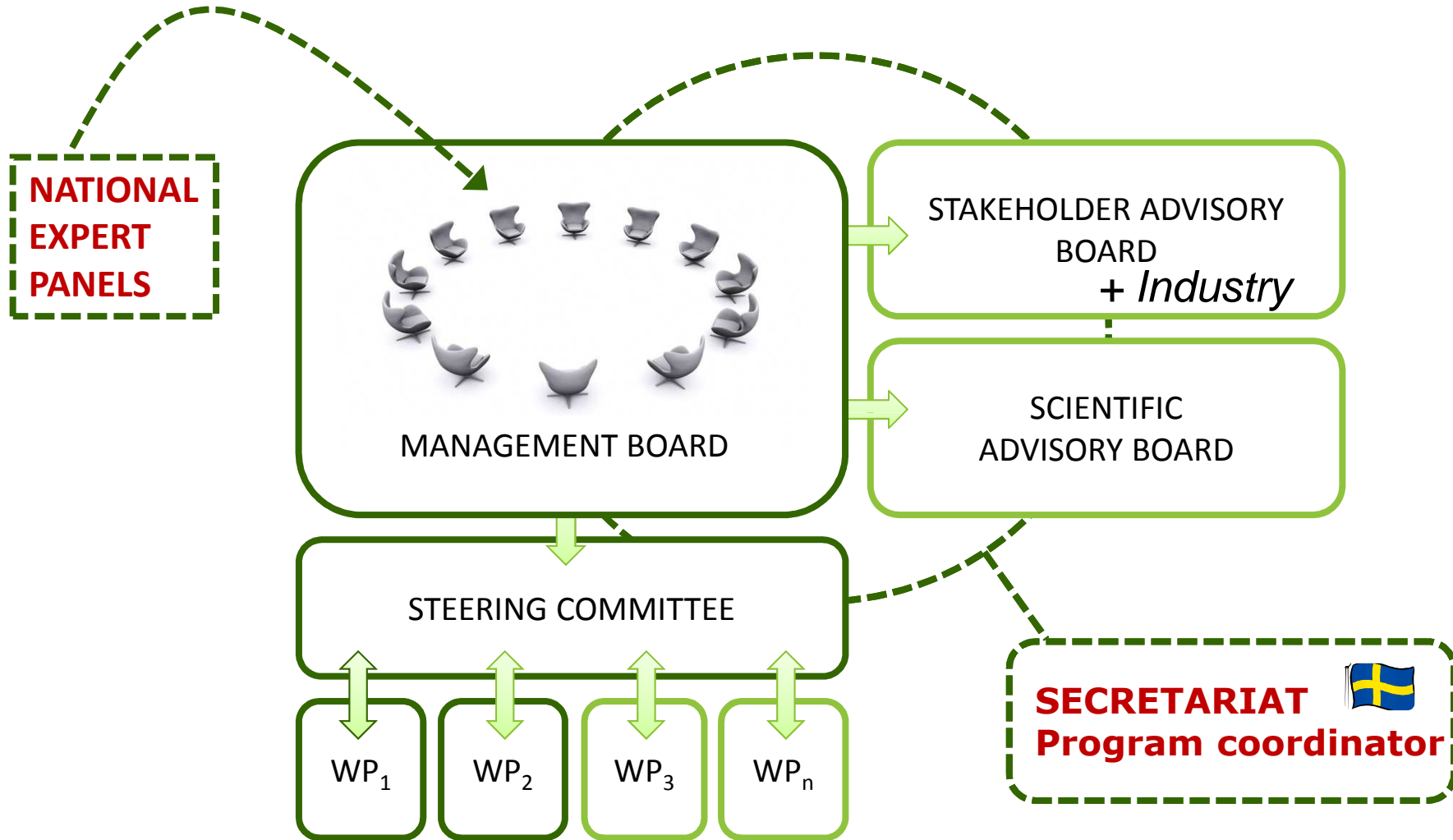
Turkey



United Kingdom

+ Estonia

Governance Structure



Priorities and implementation

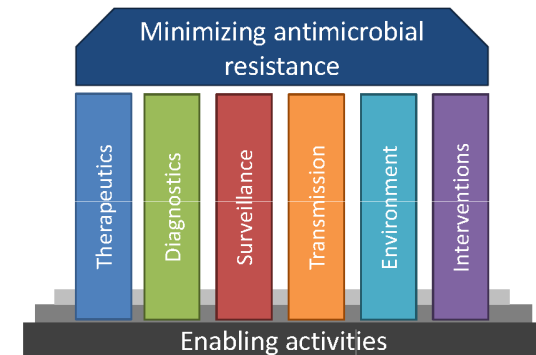


Strategic Research Agenda

- Scientific Advisory Board
- National expert panels
- Online consultation
- Stakeholder involvement

Implementation phase started

- A first Joint Call
- Mapping & Gap analysis
- AMR research output study
- Workshops
- Working Groups on e.g. evaluation, alignment, internationalisation
- Globalization



Priority topics

THERAPEUTICS: Development of **novel antibiotics** and alternatives for antibiotics – from basic research to the market.

DIAGNOSTICS: Design strategies to improve treatment and prevention of infections by **developing new diagnostics**.

SURVEILLANCE: Implementation of a publicly funded global antibiotic resistance **surveillance program**.

TRANSMISSION: **Transmission dynamics**.

ENVIRONMENT: The role of the **environment and sewage as a source for the emergence and spread of antimicrobial resistance**.

INTERVENTIONS: Designing and testing **interventions to prevent acquisition, transmission and infection** caused by antibiotic-resistant bacteria.



Therapeutics

Development of novel antibiotics and alternatives for antibiotics - from basic research to the market

Research objectives and activities

New antibiotics and alternatives to antibiotics

- Basic and translational **research to provide leads, targets, and candidate compounds** that can be exploited to develop novel antibiotics and anti-infective strategies (including immunotherapy, vaccines and anti-virulence or anti-colonisation approaches and combinations of different therapeutics).
- Research aimed at **re-sensitising resistant bacteria** to conventional antibiotics.
- Mechanistic studies into the **molecular mechanisms that lead to AMR.**



Therapeutics

Development of novel antibiotics and alternatives for antibiotics - from basic research to the market

Research objectives and activities

Improve existing antibiotics

- Research on **previously discovered, but neglected, drug compounds** with the aim to improve the clinical efficacy and reduce side effects, and to develop them into safe and effective antimicrobial drugs for modern clinical practice.
- Research to **optimise drug use, dosage, and delivery** to improve the antibacterial efficacy of existing antibiotics and to reduce their adverse impact on the normal microbiota.
- Research focusing on the **pharmacokinetic/pharmacodynamic properties** of neglected antibiotics



Therapeutics

Development of novel antibiotics and alternatives for antibiotics - from basic research to the market

Research objectives and activities

Regulatory and economic aspects

- Activities aiming at streamlining **regulatory processes** and removing **economic barriers** in order to facilitate the rapid and successful introduction of novel antibiotics and antimicrobials to the market.

Next steps:

Implementation

= transforming the Strategic Research Agenda
into actions

Challenges...

Prioritization

Commitment

Agreeing on how

Actions to follow existing funds

or

Funds & actions to follow "needs"

International cooperation

Subra Suresh (*Nature* 2012):

Global challenges need global solutions

“Without a coordinated global response, humanity will not overcome the challenges it faces.”

...and AMR is a truly global problem!

Worldwide spread of the 23F clone of penicillin resistant pneumococci



JPIAMR - Participating states

Belgium

Canada

Denmark

Finland

France

Greece

Israel

Italy

the Netherlands

Norway

Poland

Romania

**Strategic
Research Agenda**

Sweden

Czech Republic

Turkey

**Global Research
Agenda**

Estonia (observer)

European Commission

Pending /

Discussions ongoing:

- **Argentina**
- **Australia**
- **Latvia**
- **India**
- **South Africa**
- **WHO**

COMMENT

MEDICINE Microbial genome sequencing brings precision prescribing p.557

ASTROPHYSICS Exhilarating account of the hunt for dark matter p.560



TELEVISION Neil deGrasse Tyson reflects on impact of *Cosmos* series p.562

OBITUARY Douglas Coleman, obesity biochemist, remembered p.564



Unregulated sales of medicines in developing countries contribute to the rise in antimicrobial resistance.

An intergovernmental panel on antimicrobial resistance

Drug-resistant microbes are spreading. A coordinated, global effort is needed to keep drugs working and develop alternatives, say **Mark Woolhouse** and **Jeremy Farrar**.

“Creating an effective IPAMR will be a huge undertaking, but the successful global campaign to eradicate smallpox, led by the WHO, demonstrates that a coordinated, international response to a public-health threat can work. The attempt must be made — otherwise, the massive health gains made possible by antimicrobial drugs will be lost .”

Comments on the proposed governance of the EU-CELAC *Joint Initiative on Research*

Key people

Political commitment



Where is the money?

Joint programming or a
joint initiative is about
much more than money!



Back to square one?
Let's go beyond statements!



Professor Anne Glover
Chief Scientific Adviser
to the President of the
European Commission

ESOF – EuroScience Open Forum
Copenhagen, June 2014

Thank you

More information at:
<http://www.jpiamr.eu/>