



Joint Action  
Antimicrobial Resistance and  
Healthcare-Associated Infections



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Health Programme  
of the European Union

# Antimicrobial resistance: what economic incentives are needed? European Policy Center

Work Package 9, Research & innovation  
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## Mission of the EU-JAMRAI



EU-JAMRAI is a European Union Joint Action on Antimicrobial Resistance (AMR) and Healthcare-Associated Infections (HCAI) that brings together 44 partners from 28 countries and more than 30 stakeholders. Our mission is to **foster synergies** among EU Member States by **developing and implementing effective *One Health* policies** to fight the rising threat of AMR and to reduce HCAI.

1. To ensure that national processes for research and innovation priority-setting are grounded in a broad *One Health* approach and that both EU **Member States' research priorities and knowledge gaps** are addressed in the development of strategic research agendas
2. To explore and detail **European strategies to implement mechanisms to increase innovation** and other means to fight against AMR and HCAI
3. To ensure that national procedures are in place to **translate research findings into public health policies and practices** related to combating AMR and HCAI

# Technologies and practices needed to combat AMR



Public awareness



Sanitation and hygiene



Antibiotics in agriculture and the environment



Vaccines and alternatives



Surveillance



Rapid diagnostics



Human capital



Drugs



Global Innovation Fund



International coalition for action

EU-JAMRAI WP9 aims to promote *One Health* innovation across many technologies and practices, including a focus on healthcare-associated infections.

# Stimulating antibiotic innovation



Review on Antimicrobial

COMITÉ INTERMINISTÉRIEL POUR LA SANTÉ

1<sup>ère</sup> RÉUNION DU COMITÉ INTERMINISTÉRIEL POUR LA SANTÉ  
MAÎTRISER LA RÉSISTANCE BACTÉRIENNE AUX ANTIMIOTIQUES

13 GRANDES MESURES INTERMINISTÉRIELLES  
40 ACTIONS

17 novembre 2016

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TACKLING DRUG RESISTANT INFECTIONS GLOBAL FINAL REPORT AND RECOMMENDATIONS

THE REVIEW ON ANTIMICROBIAL RESISTANCE  
CHAIR BY JIM O'NEILL  
MAY 2016

BCG  
THE BOSTON CONSULTING GROUP

Federal Ministry of Health

FOLLOW-UP REPORT FOR THE GERMAN GUARD INITIATIVE  
**Breaking through the Wall**  
A Call for Concerted Action on Antibiotics Research and Development

Full Report

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Simon Charzwicki (Consultant)  
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Berlin, February 2017

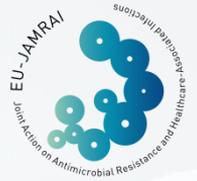
DRIVE-AB REPORT

**Revitalizing the antibiotic pipeline**

Stimulating innovation while driving sustainable use and global access

DRIVE AB  
RE-INVESTMENT  
IN R&D AND RESPONSIBLE  
ANTIBIOTIC USE

# Need for both “push” and “pull” incentives



- Push reduces the R&D costs and removes risk.
- Pull incentivizes the private sector to invest.
  - Public sector financing of antibiotic R&D = \$ 550 million per year (OECD, 2017)
  - Private sector financing = \$ 2 billion in 2016 (AMR Industry Alliance, 2018)

## Coordination

- G20 AMR R&D Hub

## Push

- CARB-X grants (USD 500m)
- GARDP partnerships (ca. € 60m)
- EIB InnovFin loans (€20m + €20m)
- REPAIR by Novo Nordisk loans (USD 165m)
- Increasing investments in JPIAMR grants
- And more

## Pull

- Potential national pilots in Sweden and UK

Since the cost of developing new antibiotics is large, the financing for stimulating innovation is also large, requiring coordination across countries.

Two or more pilots to assess:

- Sustainable use evidence - unit sales volumes, use of diagnostics, empiric use, and more
- Geographic roll-out, availability, and unit prices
- Coordination and collaboration mechanisms

# “Innovative” antibiotics currently in clinical pipeline



Antibiotic Candidate	Developer	Base	CT	Critical	High	Form
Afabicin (Debio 1450)	Debiopharm	Switz	2		<i>S. aureus</i>	IV & oral
Brilacidin	Innovation Pharma	USA	2		<i>S. aureus</i>	IV
CG400549	Crystal Genomics	Korea	2		<i>S. aureus</i>	Oral
Gepotidacin	GSK	Global	2		<i>N. gonorrhoeae</i> , <i>S. aureus</i>	IV & oral
Lefamulin	Nabriva	Ireland	3		<i>S. aureus</i>	IV & oral
Murepavadin (POL7080)	Polyphor	Switz	3	CRPA		IV
VNRX-5133 + unknown antibiotic	VenatoRx	USA	1	CRE, CRPA, CRAB		IV
Zoliflodacin (ETX0914)	Entasis	USA	2		<i>N. gonorrhoeae</i>	Oral

# Member Countries' aims for increasing antibiotic innovation



- “**Provide** innovative products and technologies contributing to the control of antimicrobial resistance with a set of regulatory and financial incentive mechanisms.” - **France**
- “The government will participate actively in the international **debate** about incentive schemes for the development of new antibiotics, while supporting efforts to develop vaccines.” - **Norway**
- “**Study** incentive mechanisms for research projects based on the identified needs.” - **Spain**
- “Sweden to contribute to the **development of knowledge** about new business models and financial incentives to stimulate the development of new antibiotics and other treatment options.” - **Sweden**
- “Actions needed...are...addressing the commercial viability issues that are hampering investment in antibiotic development, **assessing the relative merits** of possible incentives to stimulate research and development in new antibiotics and other products, and fast-track priority review arrangements for new antimicrobials.” - **United Kingdom**

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