Openly accessible resources for the global antimicrobial R&D community

Guest speakers: Eva Garmendia, David Jenkins & Astrid Pentz-Murr
Moderator: Katie Prosen
Host: Victor Kouassi (GARDP)

10 June 2021
REVIVE

An online space to connect and support the antimicrobial discovery, research, and development community

THREE AIMS OF REVIVE:

- Facilitate learning
- Connect people
- Knowledge sharing
Webinar recordings

revive.gardp.org/webinars
Today’s speakers

Openly accessible resources for the global antimicrobial R&D community

David Jenkins
Consultant Medical Microbiologist and President of the British Society for Antimicrobial Chemotherapy
University Hospitals of Leicester NHS Trust (UK)

Eva Garmendia
Coordinator
Uppsala Antibiotic Center (Sweden)

Moderator:
Katie Prosen
Senior Associate
The Pew Charitable Trusts (US)

Astrid Pentz-Murr
Scientific Affairs Manager
Global Antibiotic Research & Development Partnership (Switzerland)
GARDP Revive Webinar: Openly Accessible Resources for the Global Antimicrobial R&D Community

10-June-2021
Market Challenges Jeopardize Antibiotic Access

It takes **10-15 years** and **$1.3 billion** to develop an antibiotic.

**Valley of death**

**Challenges at commercialization/once new antibiotic is approved**

**Market failure**

Every FDA-approved antibiotic in use today is based on a scientific discovery from 1984 or earlier.

**SPARK**

- **Users**: 800+
- **Countries**: 60+
- **Compounds**: ~160K
- **Total Datasets**: 287

**Datasets**

- **MIC**
  - #Datasets: 167
  - #Datapoints: 14,469

- **IC50**
  - #Datasets: 93
  - #Datapoints: 3,524

- **ACCUMULATION**
  - #Datasets: 14
  - #Datapoints: 1,117

**Pathways**

- Miscellaneous
- Chaperonins
- Agnostic
- Protein Synthesis & Transport
- Potentiators
- Natural Products
- Biofilms
- Antimicrobial Peptides
- Cell Wall Synthesis
- Efflux / Permeation / Accumulation
- Accumulation
- Fatty Acid Synthesis
- DNA synthesis

*MIC – Minimum inhibitory concentration, IC50 – Half maximal inhibitory concentration

**Timeline**

2018 to 2021

**Total**

- 287 Total Datasets
- ~160K Compounds
- 60+ Countries
- 800+ Users
KNOWLEDGE
- JPIAMR Knowledge Hub
- JPIAMR-VRI
- TGHN Knowledge Hub
- IKEEP
- CARB-X
- The Perfect Storm
- AMR Solutions
- Global AMR R&D Hub
- WHO Preclinical Pipeline
- Pew Clinical Pipeline

DATA & ANALYSIS
- SPARK
- Antimicrobial Index
- Reframe db
- CO-ADD db
- AntibioticDB
- CARD Ontology
- AMRFinderPlus
- eNTRyway
- ChemProp
- OpenSourceAntibiotics

SURVEILLANCE
- AMR Research Initiative
- EMBARK
- Resistance Map
- HealthMap
- ResistanceOpen

SERVICES & MATERIALS
- CO-ADD
  Send your compounds for screening
- CC4CARB
  Request compound synthesis or library access
- MMV Pathogen Box
  Receive compounds to screen
A LITTLE BIT ABOUT ME

science

coordination

communication
THE CENTER
What a multidisciplinary center has to offer

THE PODCAST
Stories and science one episode at a time

OUR MISSION
Hopes for the future
THE CENTER

What a multidisciplinary center has to offer
AMR IS A (VERY) COMPLEX ISSUE

NATURAL SCIENCES & TECHNOLOGY
New knowledge & innovation

HISTORY
the lessons learned

POLICY
How do we govern to live in a sustainable situation

SOCIAL SCIENCES
Our behaviour is ultimately at play
The Uppsala Antibiotic Center

The UAC was funded by Uppsala University in 2016 with a main goal

Help build a new generation of professionals with a unique perspective on the resistance problem and its possible sustainable solutions
MAIN UAC ACTIVITIES

**SEMINARS**
Research presentations for a mixed-background audience

**WORKSHOPS**
One day activity focused in teamwork and discussions

**SYMPOSIA**
Bringing together academia, industry and the health sector
02
THE PODCAST
Stories and science one episode at a time
“We are all storytellers. We all live in a network of stories. There isn’t a stronger connection between people than storytelling.” – JIMMY NEIL SMITH

“Science isn’t finished until it is communicated” – MARK WALPORT
CONTENT

INTERVIEWS
Personal stories from great professionals working on the AMR sphere

RESEARCH AND NEWS
Latest research and updates of the AMR world
36 episodes
9,615 plays
>50 countries
DISTRIBUTION OF PLAYS

- Sweden: 3605
- United States: 2354
- UK: 1044
- Canada: 365
- Switzerland: 210
- Germany: 214
- Finland: 163
- Norway: 172
- France: 109
- Spain: 107
- Australia: 100
- Others: 1172

*Data Range: November 2018 to June 2021
OUR AUDIENCE

STUDENTS
- Highschool & university

NEW TO AMR
- Changing fields & careers

RESEARCHERS
- Wanting to expand their knowledge & get inspired

HEALTH PROFESSIONALS
- Looking to learn more about AMR
OUR MISSION

Hopes for the future
INSPIRATION
MOTIVATION
COLLABORATION
SHARING
THANKS

eva.garmendia@uac.uu.se
www.uac.uu.se

bit.ly/UACnewslist
AMR resources for all: open access education, training and research from BSAC

Dr David R Jenkins
President, British Society for Antimicrobial Chemotherapy,
Consultant Medical Microbiologist, University Hospitals of Leicester NHS Trust,
Honorary Associate Professor, University of Leicester
david.jenkins@uhl-tr.nhs.uk
@DafyddSiencyns

www.bsac.org.uk
@BSACandJAC
Introduction to the British Society for Antimicrobial Chemotherapy - BSAC

Founded in 1971
3000 members in 135 countries around the world
A British society with a global outlook

What we do

- **Education**: Education saves lives. Our range of free online courses will change the way you see superbugs.
- **Events**: Bringing people together is what we do best. Join the global conversation at our latest events.
- **Political Engagements**: Advocating political solutions to the problem of antimicrobial resistance

**JAC-AMR**: Our industry leading journals exploring the complex issues surrounding infection.

**JAC**: Our industry leading journals exploring the complex issues surrounding infection.

**Stop Superbugs**: Find out more about how you can get involved in our international campaign to Stop Superbugs.
BSAC - a global educator

• Education is a powerful tool to counter the threat from antimicrobial resistance
• BSAC courses explore antimicrobial resistance from every angle
• The courses help join the dots between scientific research, practising clinicians and the public
The beginning of open access - e-Learning

2017 – Partnership agreements with

University of Dundee

Launch of the MOOC on Antimicrobial Stewardship
4 years on .......

Over 30 open access courses
Courses include:
Prevention, Diagnostics, Treatment and One Health
TOPOS so far

- Introduction to practical microbiology
  - English, Spanish language versions
- Infection prevention for vulnerable patients
- Fungal diagnostics in critically ill patients
- Challenges in antibiotic resistance:
  - Gram negative bacteria
  - Non-fermenting Gram negative bacteria
  - Point-prevalence survey
- Procalcitonin: PCT as a biomarker for antimicrobial stewardship
- Syndromic testing and antimicrobial stewardship
- Antimicrobial stewardship – English, Chinese, Russian, Spanish, Portuguese.
- Antimicrobial stewardship in veterinary practice
- Tackling antimicrobial resistance: A social science approach

Course length 2-4 weeks duration
BSAC webinars

- Joint BSAC/EWMA webinar: The impact of Covid-19 on chronic wound management and the effect on antimicrobial stewardship
- Syndromic Testing and Antimicrobial Stewardship
- Procalcitonin and COVID-19
- Doing better for UTI* patients, diagnostic tests for urine infections, the impact of COVID-19 on rapid testing
- COVID-19 and Antimicrobial Stewardship
- Pneumonia – diagnosis, treatment and stewardship challenges
- Treating sepsis – a pragmatic or utopian approach?
- Antimicrobial Surveillance and consumption data – how, what and why to measure to provide meaningful data
- The role of telemedicine during the COVID-19 crisis and the use in Antimicrobial Stewardship

*Urinary tract infection
GLOBAL REACH OF OPEN ACCESS E-LEARNING

8% North America
4% South America
18% Africa
42% Europe
3% Australia

34 NUMBER OF COURSES SINCE 2015
200,000+ UNIQUE LEARNERS AND DOWNLOADS

6 continents
215 countries
37,000+ learner locations

Met Expectations: 98%
Improved Knowledge: 98%
Improved Shared learning: 85%
Improved Applied learning: 83%

BSAC INFECTION LEARNING HUB

ANTIMICROBIAL CHEMOTHERAPY
ANTIMICROBIAL STEWARDSHIP
Future Learn
University of Dundee

25% Asia
Antimicrobial stewardship: From principles to practice

- A **FREE eBook** from the British Society for Antimicrobial Chemotherapy
- A global and highly practical primer on the wise use of antibiotics
- Available as a PDF or an EPUB file,

Provides

- An extensive overview of the day-to-day challenges posed by antimicrobial resistance
- Tools for setting up stewardship programmes
- Guidance on how to make the most of existing stewardship programmes
- Resources to apply the principles of stewardship to a wide range of professions, populations, and clinical/care settings
- Support for colleagues working in low and middle-income countries
- Advice on informing and influencing policymakers and journalists
- An interactive, multimedia, platform with links to many videos, podcasts, and PDFs
Our journals

- Original Article
- Review
- Viewpoint
- For Debate
- Brief Report
- Educational resource: non-commercial
Antimicrobial resistance and stewardship e-Learning Repository

- Database of peer and non-peer reviewed multi-media antimicrobial resistance and stewardship educational resources from differing health economies across the globe.
- The resources are classified according to the World Health Organisation national action plan classification system and are searchable using the filters.
- Some of these resources have been or will be selected for peer review and publication in JAC-Antimicrobial Resistance.
- If resources are already reviewed a link to the peer review publication has been provided.
The World Health Organization states that “Antibiotic resistance is one of the biggest threats to global health, food security, and development today.”

The Mould that Changed the World is a brand new musical theatre production which communicates the fundamental concept of antimicrobial resistance.
Conferences and events

Open access webinars

Antimicrobial Chemotherapy Conference with

GARDP
Global Antibiotic Research & Development Partnership
Collaborations including

EWMA

ICAN

ANTIMICROBIAL STEWARDSHIP EDUCATION INITIATIVE

BRITISH PHARMACOLOGICAL SOCIETY

GARDP

Global Antibiotic Research & Development Partnership

European Bank for Reconstruction and Development
REVIVE: Advancing antimicrobial R&D through education and collaboration

Astrid Pentz-Murr, Scientific Affairs Manager, GARDP

REVIVE webinar ‘Openly accessible resources for the global antimicrobial R&D community’ on 10 June 2021
REVIVE: Advancing antimicrobial R&D through education and collaboration

REVIVE was launched in 2018 to ensure knowledge is retained, and the antimicrobial R&D community is supported to connect, share, and acquire information.

As companies continue to leave the field of antibiotic development, many researchers have retired or re-focused their activities on other areas. REVIVE addresses this gap.

GARDP is helping to advance the development of new treatments: Scientific Affairs activities are hosted on REVIVE and freely accessible to all.
GARDP’s Scientific Affairs activities

- REVIVE webinars
- AMR Discussions
- GARDP Webinars
- Societies & Partners network
- REVIVE Expert network
- Antibiotic Discovery & Development Roadmap
- Conferences
- Resource Library
- Antimicrobial Viewpoints
- Antimicrobial Encyclopaedia
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GARDP's Scientific Affairs activities include various initiatives such as webinars, discussions, expert networks, resource libraries, and conferences. These activities are designed to support the development of antibiotics and combat antimicrobial resistance (AMR).
Our webinar series

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<thead>
<tr>
<th>REVIVE webinars</th>
<th>GARDP corporate webinars</th>
<th>AMR Discussions</th>
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</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td>Practical topics related to antimicrobial drug discovery &amp; development</td>
<td>Topics which are close to or feature GARDP’s work</td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>90 minutes; 1-5 presentation(s) with slides, moderated 30-45 minutes audience Q&amp;A</td>
<td>60-90 minutes; 3-4 presentations (slides not always used), curated panel discussion, audience Q&amp;A</td>
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<tr>
<td><strong>Audience</strong></td>
<td>Scientists from industry and academia, clinicians, regulators, NGOs</td>
<td>REVIVE audience, plus funders, governmental representatives, journalists, civils society</td>
</tr>
</tbody>
</table>
REVIVE webinars

Educational webinars on topics related to antimicrobial drug discovery and development.

revive.gardp.org/webinars
GARDP webinars

Presentations and panel discussions about topics related to GARDP’s focus areas.

revive.gardp.org/webinars

LIVE WEBINAR
16 June 2020, 5 - 6:30pm CEST
Bringing new treatments for drug-resistant infections to all who need them
Speakers: Sarmas O’Brien, R&D Director, GARDP
Francois Frerezeich, Asset Evaluation and Development Project Leader, GARDP
Sally Ellis, Children’s Antibiotics Project Leader, GARDP

LIVE WEBINAR
20 November 2020, 10:30am - 12pm CET
Saving children’s lives – treating neonatal sepsis
The webinar, organized in collaboration with WHO, is being held on the occasion of Universal Children’s Day and during World Antibiotic Awareness Week
Speakers: Aafke Bakeveld, Assistant Director, General for Antimicrobial Resistance, WHO
Dr. Monique Balagamwala, Executive Director, GARDP
Dr. Dhanya Dharmadasa, project assistant of the Global Action Plan on Antibiotics (GAPA), Malaria
Dr. Berna Nyange, Senior Clinical Project Manager, DND/Kenya

Recording Available!

LIVE WEBINAR
25 June 2020, 2-3pm CEST
Putting children first in the fight against antibiotic resistance
Speakers: Dr. Christian Otieno, Co-investigator, GARDP tuberculosis clinical trial, KAP, Kenya
Dr. Marco Bolognani, Executive Director, GARDP
Prof. Helen Bailey, Assistant Director General for Antimicrobial Resistance, WHO
Dr. Stefan Petersen, Chief of Health, UNICEF

LIVE WEBINAR
4 March 2021, 4 - 5:30pm CET
Learning from COVID-19 to tackle the silent pandemic of antibiotic resistance
Speakers: Dr. Monica Balagamwala - GARDP Executive Director
Dr. Marc Mtobala - Professor of Infectious Diseases and Head of the Division of Infectious Diseases, HHI Medicine at Groote Schuur Hospital, University of Cape Town
Dr. Josie Liu - Paediatric Emergency Physician at the University of Maryland and former International President of Medecin Sans Frontieres
New: AMR Discussions

Panel discussions about various topics related to AMR.

revive.gardp.org/webinars

AMR DISCUSSIONS
Balancing access to and stewardship of antimicrobials in LMICs

MODERATOR:

PHILIP HOWARD
Consultant Antimicrobial Pharmacist, Leeds Teaching Hospitals, UK and Vice President of British Society of Antimicrobial Chemotherapy

SPEAKERS:

DIREK LIMMATHUOTSAKUL
Head of Microbiology at Mahidol-Oxford Tropical Medicine Research Unit (MORU), Mahidol University, Thailand

SOUHA S. KANJ
Professor of Internal Medicine at American University of Beirut, Lebanon

SUJITH J. CHANDY
Director at ReAct Asia Pacific and Professor of Clinical Pharmacology at Christian Medical College, Vellore, India

1 July 2021, 10:00-11:00 am CEST
Our webinars are watched worldwide

Countries where our webinars are watched

- GARDP’s Scientific Affairs team has held 40 webinars so far with a total of 16,042 registrations and 7,431 live participants
- Our largest webinar so far has had 819 registrations and 398 live attendees
- Participants have joined from 114 countries all over the world

Data as of 1 June 2021
Conferences

ASM/ESCMID 2020 was cancelled; the planned Bootcamps were developed as REVIVE webinars:

GARPD’s and BSAC’s Antimicrobial Chemotherapy Conference:

Coming:

revive.gardp.org/conferences
Antimicrobial Viewpoints

Causes of antibiotic shortages and the solutions to address them by Enrico Baraldi

Learning from IPC strategies for COVID-19 to mitigate AMR in rural Nigerian communities by Rachael Osagie

A new cephalosporin has been approved by Ursula Theuretzbacher

revive.gardp.org/antimicrobial-viewpoints
This is done by molecular machines called efflux pumps.

revive.gardp.org/resources/antimicrobial-encyclopaedia
Resource Library

revive.gardp.org/resources/library
REVIVE is currently supported by 131 individuals with an expertise in antimicrobial research and development or its economics and regulation:

- **48 contributing experts**
  - Actively contribute to the development of content for REVIVE
- **83 endorsing experts**
  - Support REVIVE through promoting its activities, their colleagues, and providing suggestions.

Experts come from 21 countries including Australia, Belgium, Sweden, South Africa, and India.
Collaborating scientific societies and partner organizations

73 partner organizations and scientific societies all over the world collaborate by regularly sharing our content with their networks.

• These include international societies such as ESCMID, WSPID and the International Society for Infectious Diseases, as well as ‘umbrella’ societies such as FEMS.

• This also includes societies from 28 countries such as the Malaysian Society of Infectious Diseases and Chemotherapy and Argentina Society of Infectious Diseases.

• New collaborations are continually being created.

Countries with societies that share content

Data as of 1 June 2021
How to get involved

Reach out to us to

• propose to develop an Antimicrobial Viewpoint article or Encyclopaedia entry
• propose a webinar topic or speaker
• let us know which Encyclopaedia terms are urgently missing
• share valuable resources with us for the Library
• nominate experts for our network
• find out how you can spread the word about our activities
• ask any other questions or make suggestions!

Connect with us via

• Twitter: @gardp_amr
• LinkedIn: www.linkedin.com/company/gardp
Please keep up to date with our activities by subscribing to the REVIVE newsletter:

gardp.org/newsletter-subscription/
Thank you
Today’s speakers

Openly accessible resources for the global antimicrobial R&D community

Eva Garmendia
Coordinator
Uppsala Antibiotic Center (Sweden)

David Jenkins
Consultant Medical Microbiologist and President of the British Society for Antimicrobial Chemotherapy
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Astrid Pentz-Murr
Scientific Affairs Manager
Global Antibiotic Research & Development Partnership (Switzerland)

Moderator:
Katie Prosen
Senior Associate
The Pew Charitable Trusts (US)
Do you know of any other relevant resources?

Please let us know!

revive@gardp.org
Join us for our next webinar

AMR Discussion

1 July, 10:00-11:00 CEST

Balancing access to and stewardship of antimicrobials in LMICs

Speakers:
• Direk Limmathurotsakul, Mahidol University (Thailand)
• Souha S. Kanj, American University of Beirut Medical Center (Lebanon)
• Sujith J. Chandy, ReAct Asia Pacific (India)

Registration link and more information available on: revive.gardp.org/webinars
Thank you for joining us