

MSD - pioneering in anti-infective discovery

Milestones in MSD's History of Anti-Infectives

Sixty years ago, an experimental powder known as penicillin was developed at the Merck laboratory. Since that day, countless people have been able to live longer, healthier lives.

Penicillin was supplemented by generations of new and more potent antibiotics that represent dramatic advances in treating serious infections.

1938
sulfamerazine

1942
potassium penicillin G
succinylsulfathiazole

1947
dihydrostreptomycin

1978
MEFOXIN™
(cefoxitin)

1984
ZIENAM™
(imipenem/cilastatin sodium)

1996
CRIXIVAN™
(indinavir sulfate)

1999
STOCRIN™
(efavirenz)

2001
CANCIDAS™
(caspofungin acetate)

INVANZ™
(ertapenem sodium)

1939
sulfamethazine

1946
streptomycin
phthalylsulfathiazole

1956
vobiocin

1983
NOROXIN™
(norfloxacin)

1987
MECTIZAN™
(ivermectin)



Acute Care

Each year in the U.S., at least **2 million people** become infected with bacteria that are resistant to antibiotics. At least **23,000 people** die each year as a direct result of these infections.

2 million =

combined populations of San Francisco, CA and Dallas, TX.



At any time over **1.4 million people** worldwide suffer from infectious complications acquired in a hospital.



1.4 million people is greater than the population of Dublin, Ireland



The annual costs of hospital-acquired infections in the U.S. alone is between

\$28.4 and \$45 billion



In high-income countries, approximately **30%** of patients in intensive care units (ICU) are affected by at least one infection caused by receiving medical care.

Of every 100 hospitalized patients at any given time:



7 in developed countries



10 in developing countries

will acquire at least one health care-associated infection



MSD Acute Care
As dedicated as you are

"We are the only pharmaceutical company that has made a strategic decision to build a portfolio that addresses acute care in the hospital setting."

– Dalya Gayed, executive director, Hospital Acute Care



PROBLEMA = AMR

SOLUTIA = AMS

The Purpose of Antimicrobial Stewardship

AMS is intended to:

1. Ensure that patients receive the appropriate antimicrobial.
2. Reduce antimicrobial resistance.
3. Decrease morbidity / mortality.
4. Decrease length of stay.
5. Optimize clinical outcomes.
6. Minimize unintended consequences of antimicrobial use.



Impact of AMS



FIVE RIGHTS

Right Drug

Right Patient

Right Dose

Right Route

Right Time



ANTIBIOTIC RESISTANCE THE GLOBAL THREAT

Antibiotic resistance – when bacteria change and cause antibiotics to fail – is happening **RIGHT NOW**, across the world

The full impact is unknown. There is no system in place to track antibiotic resistance globally



Without urgent action, many modern medicines could become obsolete, turning even common infections into deadly threats.



A GROWING CRISIS WORLDWIDE

In the EUROPEAN UNION, antibiotic resistance causes 25,000 deaths per year and 2.5m extra hospital days¹



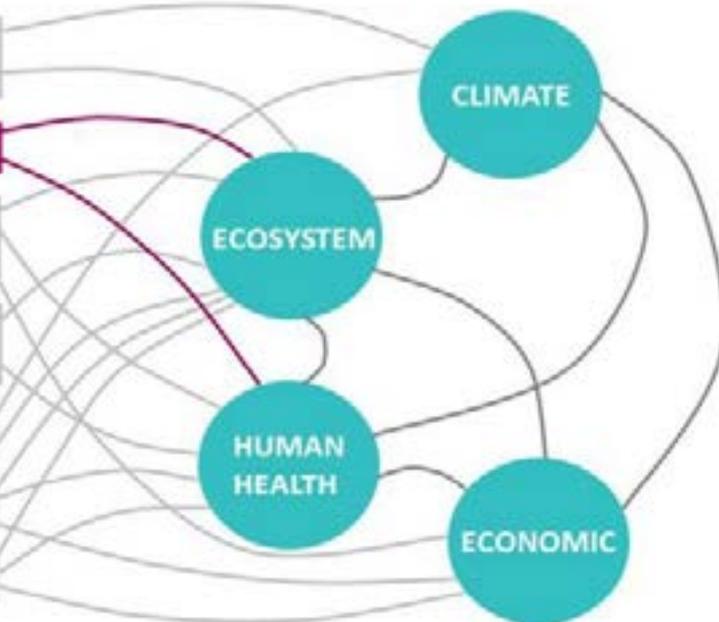
Alert

Top 7 Threats to the Human Race

Global Drivers

- Changed C/N cycles & rising atmospheric GHG concentration
- Increasing antibiotic resistance**
- Increasing connectivity (economic, social, ecological)
- Rising human numbers & urbanization
- Increasing per capita resource use
- Nuclear proliferation
- International terrorism

Unwanted Outcomes



The trusted partner in implementing AntiMicrobial Stewardship



Review on Antimicrobial Resistance

Tackling drug-resistant infections globally

Kenneth C. Frazier, Chairman and Chief Executive, Merck & Co., Inc., Kenilworth, New Jersey, USA, said:

"Antibiotic resistance is an urgent public health issue requiring a comprehensive, global approach. Assuring availability and proper use of effective antibiotics are shared responsibilities and we fully embrace the principles outlined in this declaration."

PRESS NOTICE

21 January 2016

GLOBAL PHARMACEUTICAL INDUSTRY CALLS ON GOVERNMENTS TO WORK WITH THEM TO BEAT THE RISING THREAT OF DRUG RESISTANCE

More than 80 leading international pharmaceutical, generics, diagnostics and biotechnology companies, as well as key industry bodies, have come together to call on governments and industry to work in parallel in taking comprehensive action against drug-resistant infections – so-called 'superbugs' – with a joint declaration launched today at the World Economic Forum in Davos, Switzerland. The statement sets out for the first time how governments and industry need to work together to support sustained investment in the new products needed to beat the challenges of rising drug resistance.

Global coordination, local action.

We call for a global commitment to coordinated action on stewardship, conservation, hygiene, and the creation and use of new commercial models for antibiotics and diagnostics. As noted above, we recognize **different models may be appropriate for different countries, health systems, and products**. All parties should commit to allocating funding and finding paths that work for their situation. We are ready to work stepwise with countries to implement such models.

Ministry of Health, press release - 2016, Feb.8th

Nosocomial infections surveillance and control national plan

Antibiotics use and antibiotic-resistance monitoring



Structura • Informații • Comunicare • Contacte • Căutare

MINISTERUL SĂNĂTĂȚII

Comunicare > Comunicate de presă

Ministerul Sănătății a expus, astăzi, Planul național de supraveghere și control al infecțiilor nosocomiale și monitorizarea a utilizării antibioticelor și a antibiotic-resistenței.

Ministerul Sănătății a organizat în această perioadă un grup de lucru format din specialiști epidemiologi, microbiologi, de boli infecțioase și de sănătate publică care au elaborat un document programatic privind principalele direcții de acțiune care trebuie urmate în perioada următoare în cele mai importante spitale din țara noastră unde pot apărea mai frecvent infecții nosocomiale și unde se înregistrează cele mai mari consumuri de antibiotice să fie achese în acest efort organizatoric, profesional și material.

“În următoarele 2 luni vom începe în 70 de spitale de urgență, institute, spitale mari mai multe evaluări pe baza unor chestionare care vor fi analizate de către specialiștii Institutului Național de Sănătate Publică pentru a se identifica un calendar de măsuri privind resursele umane, dezvoltarea de ghiduri și metodologii de diagnostic și supraveghere a infecțiilor nosocomiale și rezistenței la antibiotice, modificării în structura organizatorică și de personal a unităților sanitare și completarea echipamentelor și dotărilor necesare activității în aceste domenii. Vrem să dezvoltăm programul de supraveghere și control al infecțiilor nosocomiale existent, care este în acest moment un program restrâns” au declarat conf.dr. ViCTOR STRĂMBU, secretar de stat în Ministerul Sănătății.

Secretarul de stat a adăugat că, pe termen mediu, se instruționează dezvoltarea în spitale a unor activități care să permită utilizarea judicioasă a antibioticelor, supravegherea și intervenția efecăe, dar și încurajarea raportării infecțiilor nosocomiale, pe baza unor indicatori măsurabili.

Obiectivele și principalele direcții de acțiune ale Planului MS sunt următoarele:

Obiectiv:

- I. Creșterea capacității de diagnostic, prevenire și control al infecțiilor nosocomiale; îmbunătățirea raportării infecțiilor nosocomiale
- II. Îmbunătățirea activității de supraveghere și limitarea rezistenței bacteriene al antimicrobiene în mediul spitalicesc

GUIDING PRINCIPLES:

- ✓ **Increase identifying of patients infected/colonized with germs representing high epidemiological risk** (improve of microbiology labs activity for a better clinical orientation on NI)
- ✓ **Better prevention activities for NI** (improve hospitals reporting for an updated situation at National level)
- ✓ **Improve AB prescribing in hospitals** (prescribing protocols implementation, standardized guidelines)
- ✓ **Raise NI awareness through medical education among HCP** (better diagnosis rate)

Romanian Government, through the Ministry of Health, declared limitation of AMR and hospitals capacity improvement for detection and surveillance of NI a National Health PRIORITY!

The problem: Anti Microbial Resistance
The solution: Anti Microbial Stewardship

FIVE RIGHTS



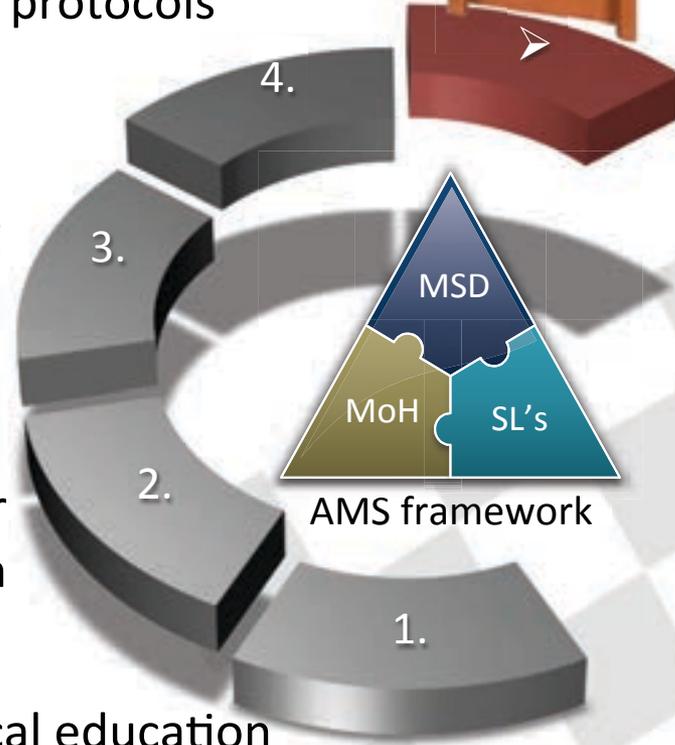
Patients access to new AB's

AB's prescribing protocols

Improve data reporting
@national/hospital level

Support laboratories for
results standardization

Raise awareness on AMS importance - medical education



Vă mulțumesc!