Quality Circles at a glance "Use of Antibiotics in GP" WONCA October 2015

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Key Learning objectives- Participants and Facilitators

* Understand the scale of the problem of AB Resistance in Europe – why we should all be worried
* Antibiotic consumption in the European countries
* Explore what initiatives might help to combat AB resistance
* What you as individual GP prescribers can do to help
* Provide the tools to facilitate QC on Antibiotic prescribing in your country

5 minutes

* Scale of the problem of antibiotic resistance in your country and how you got to this point
* What is happening in your country to combat antibiotic resistance?
* What can you as an individual GP do?
* Do you have infection control guidelines?

“WHO’s first global report on antibiotic resistance reveals serious, worldwide threat to public health” APRIL 2014

“Without urgent, coordinated action by many stakeholders, the world is headed for a post-antibiotic era, in which common infections and minor injuries which have been treatable for decades can once again kill,” BBC WORLD NEWS

“WHO calls for urgent action to preserve power of antibiotics and make new ones”- THE GUARDIAN

“World faces huge public health threat that could affect anyone of any age, warns report into extent of antimicrobial resistance “NEW YORK TIMES

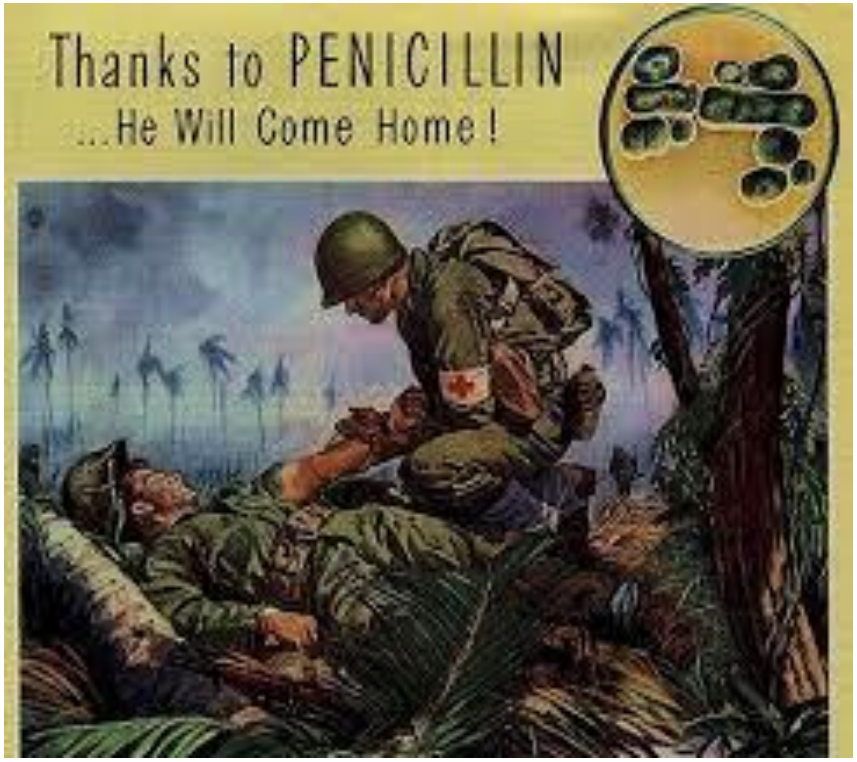
“World headed for ‘post-antibiotic era’ if no urgent action taken, WHO warns”

“New WHO report provides the most comprehensive picture of antibiotic resistance to date, with data from 114 countries” RTE NEWS

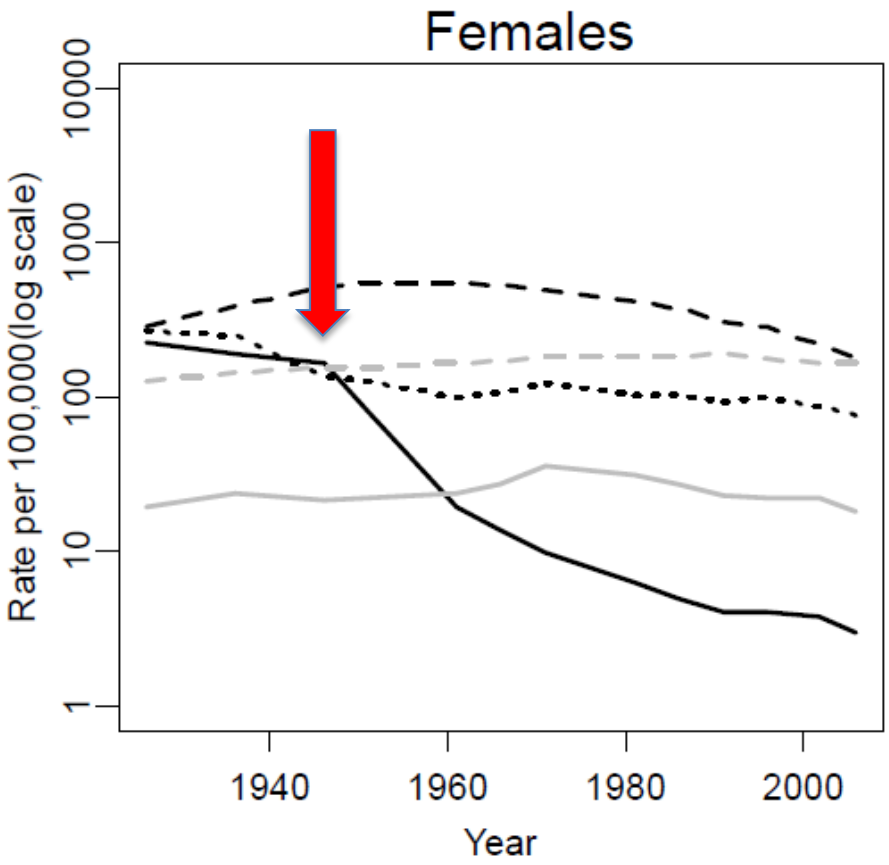
TIME IS RUNNING OUT……. .

We have limited expectations from a "renewable pipeline of products." We hope for some modest success, but the existing classes of antibiotics are probably the best we will ever have.

BMJ 2012 Antibiotic Research –Dr Martin Cormican , Dr Akke Vellinga

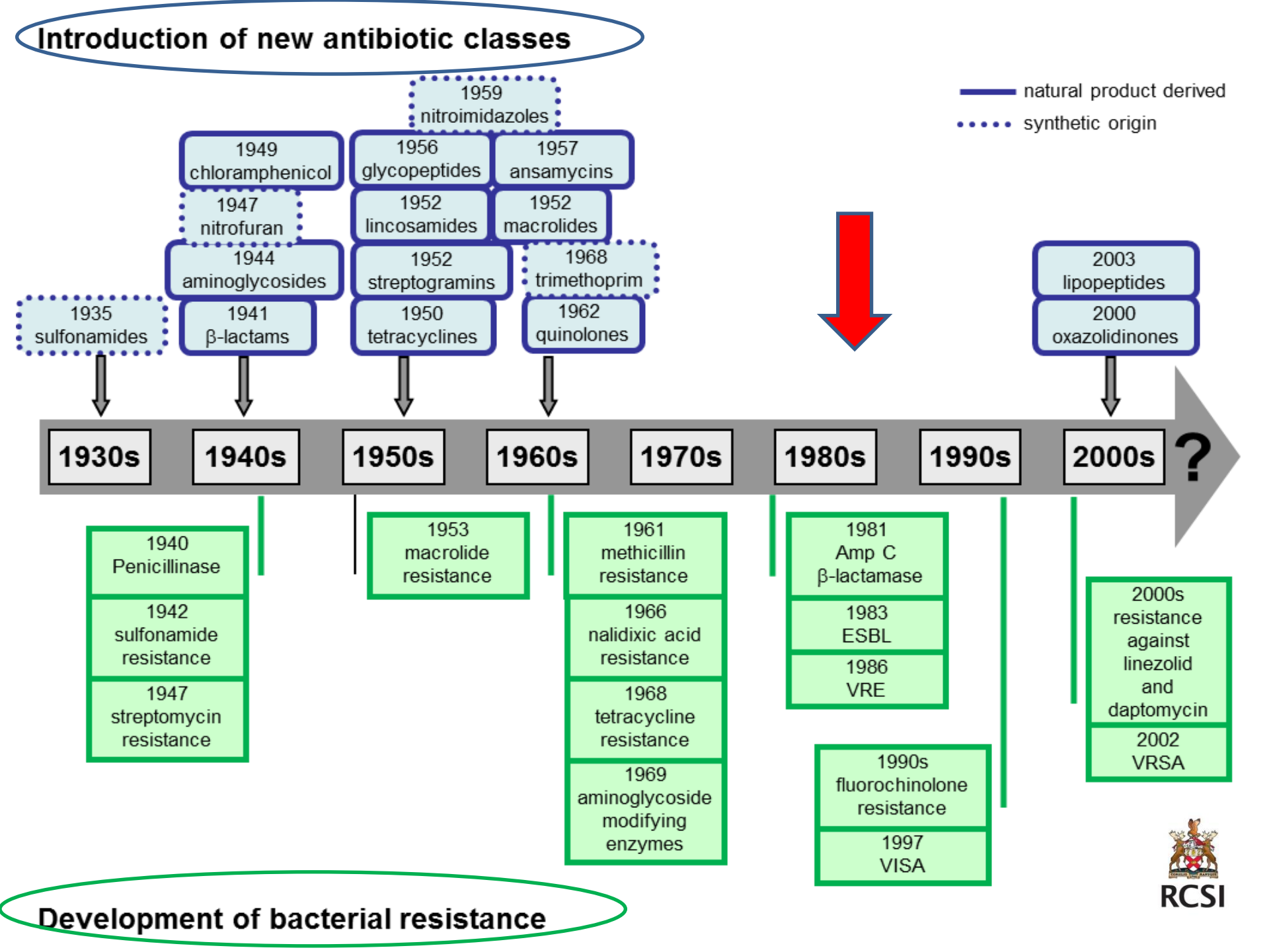


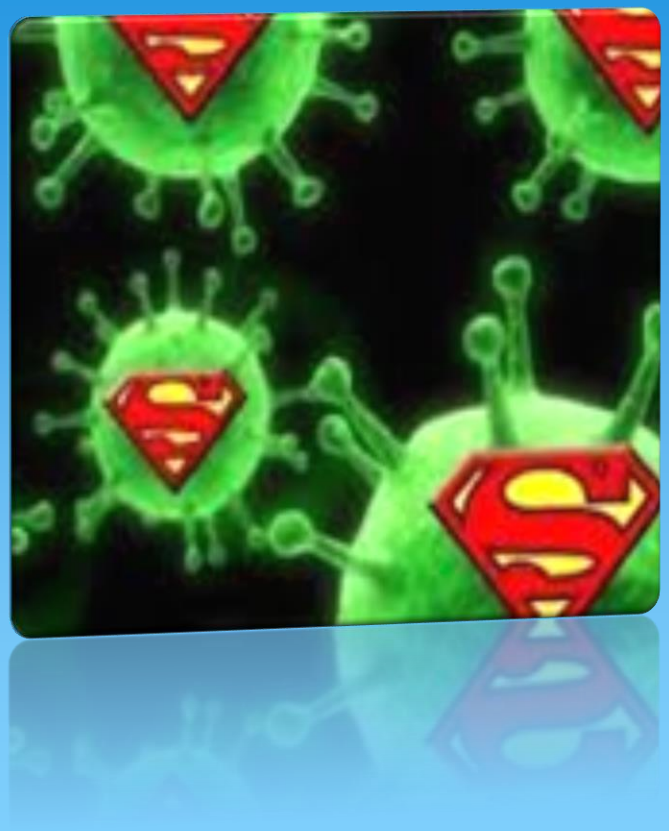
CAUSES OF DEATH
1926 - 2006



Infectious _____ **Circulatory** _ _ _ _ **Respiratory** ---------
External _____ **Cancer** _ _ _ _

Data source: Society of Actuaries in Ireland 2011 & Dr. Robert Cunney


Introduction of new antibiotic classes
natural product derived
synthetic origin
1935 sulfonamides
1941 β-lactams
1944 aminoglycosides
1947 nitrofuran
1949 chloramphenicol
1950 tetracyclines
1952 streptogramins
1952 lincosamides
1952 macrolides
1956 glycopeptides
1957 ansamycins
1959 nitroimidazoles
1962 quinolones
1968 trimethoprim
2000 oxazolidinones
2003 lipopeptides
1930s
1940s
1950s
1960s
1970s
1980s
1990s
2000s
?
1940 Penicillinase
1942 sulfonamide resistance
1947 streptomycin resistance
1953 macrolide resistance
1961 methicillin resistance
1966 nalidixic acid resistance
1968 tetracycline resistance
1969 aminoglycoside modifying enzymes
1981 Amp C β-lactamase
1983 ESBL
1986 VRE
1990s fluorochinolone resistance
1997 VISA
2000s resistance against linezolid and daptomycin
2002 VRSA
Development of bacterial resistance
RCSI

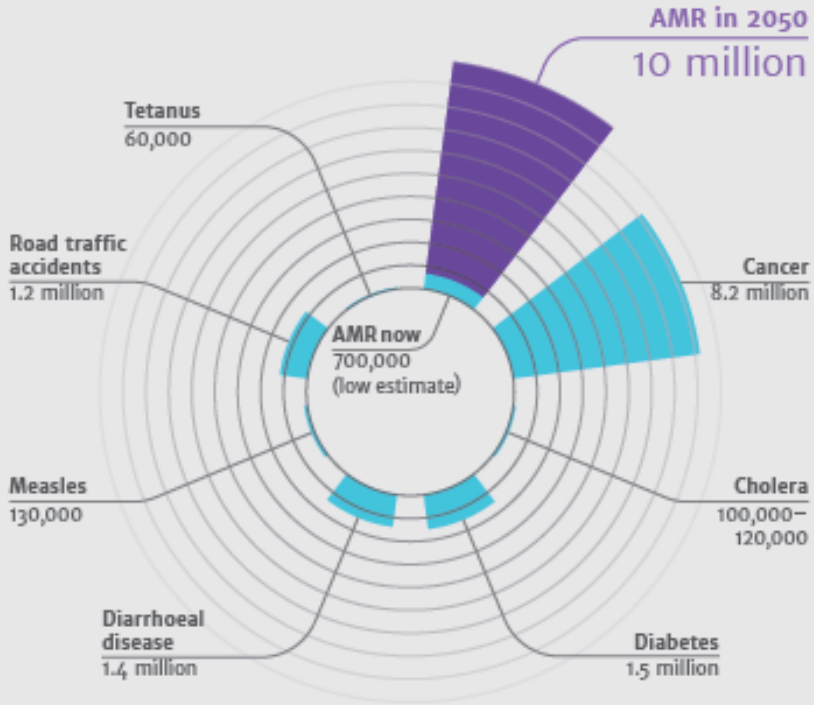


25,000 deaths from multi-drug resistant organisms each year in Europe

HCAI from resistant bacteria- Difficult to treat, prolonged illness, hospital stays, risk of death

“SUPERBUGS “

Deaths attributable to AMR every year
compared to other major causes of death

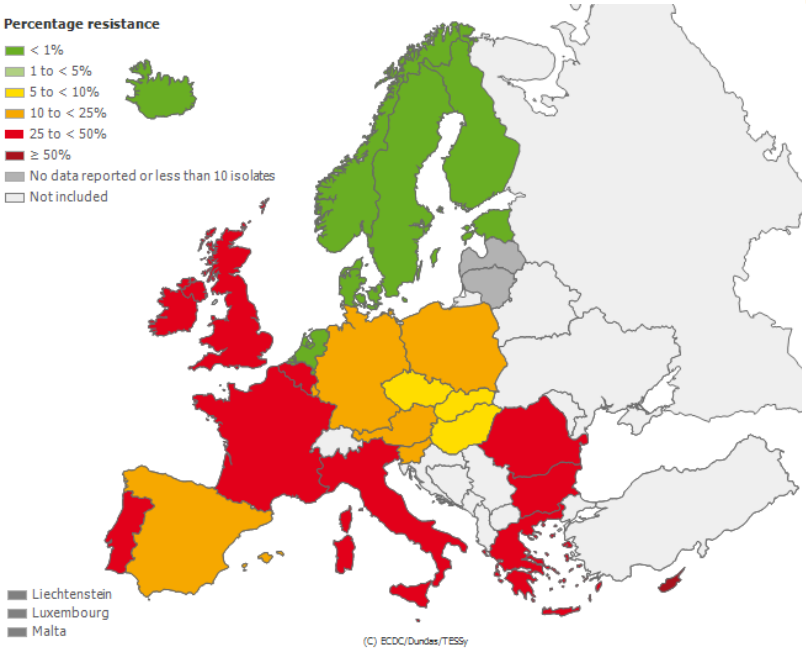


Sources

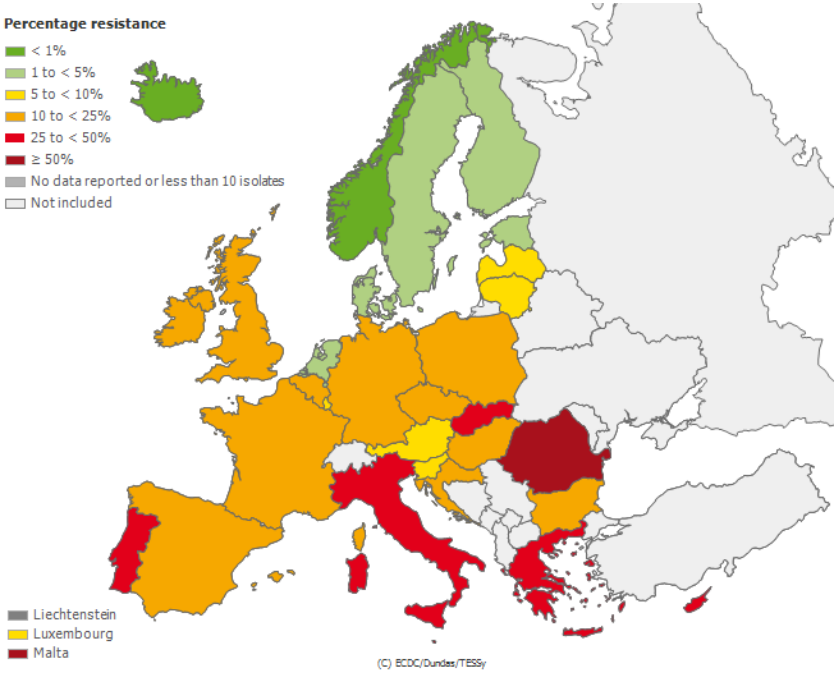
Diabetes	www.who.int/mediacentre/factsheets/fs312/en/	Measles	www.sciencedirect.com/science/article/pii/S0140673611616131/pdf
Cancer	www.who.int/mediacentre/factsheets/fs297/en/	Road traffic accidents	www.who.int/mediacentre/factsheets/fs358/en/
Cholera	www.who.int/mediacentre/factsheets/fs107/en/	Tetanus	www.sciencedirect.com/science/article/pii/S0140673611616131/pdf
Diarrhoeal disease	www.sciencedirect.com/science/article/pii/S0140673611616131/pdf		

Methicillin resistant Staphylococcus aureus (MRSA) isolates in participating countries

2002

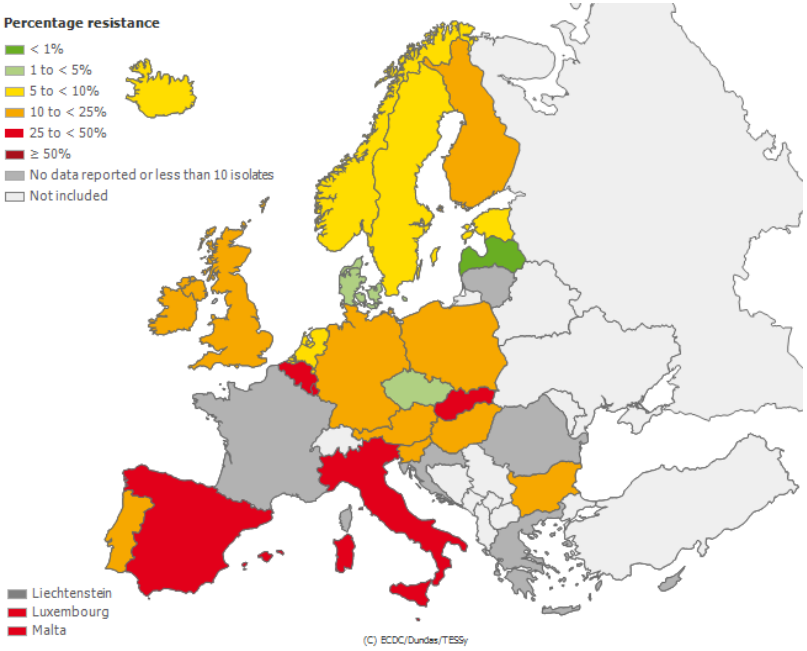


2013

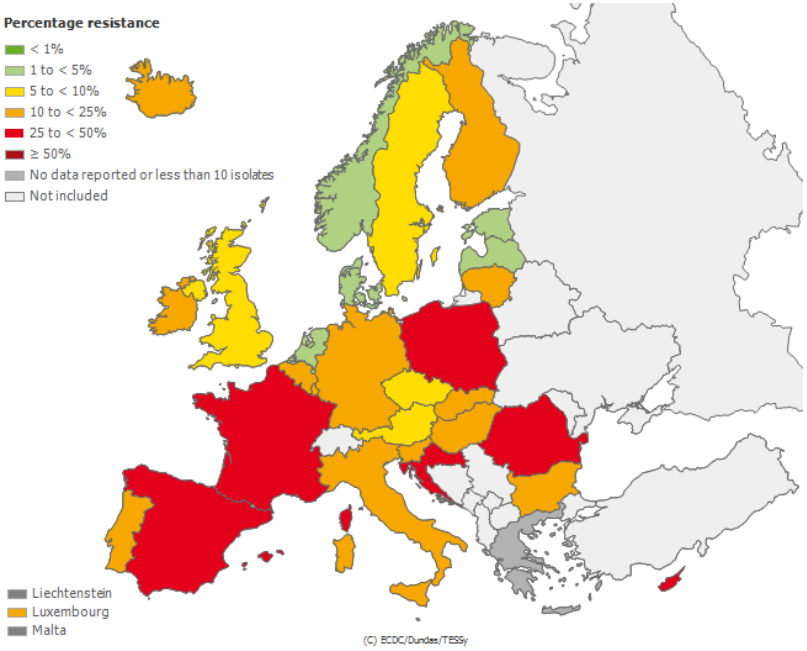


Macrolide Resistant (R) Streptococcus pneumoniae Isolates in Participating Countries

2004

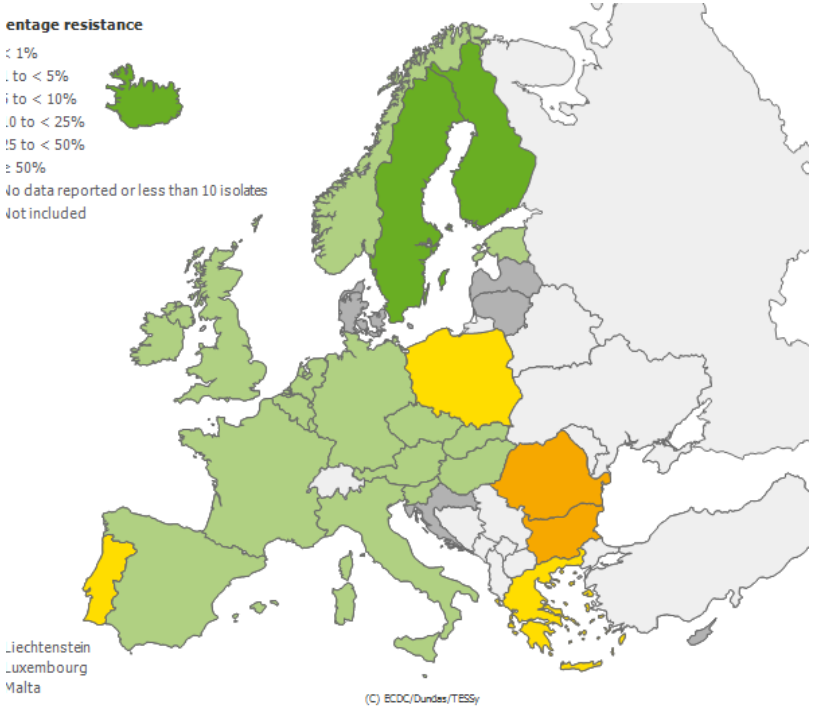


2013

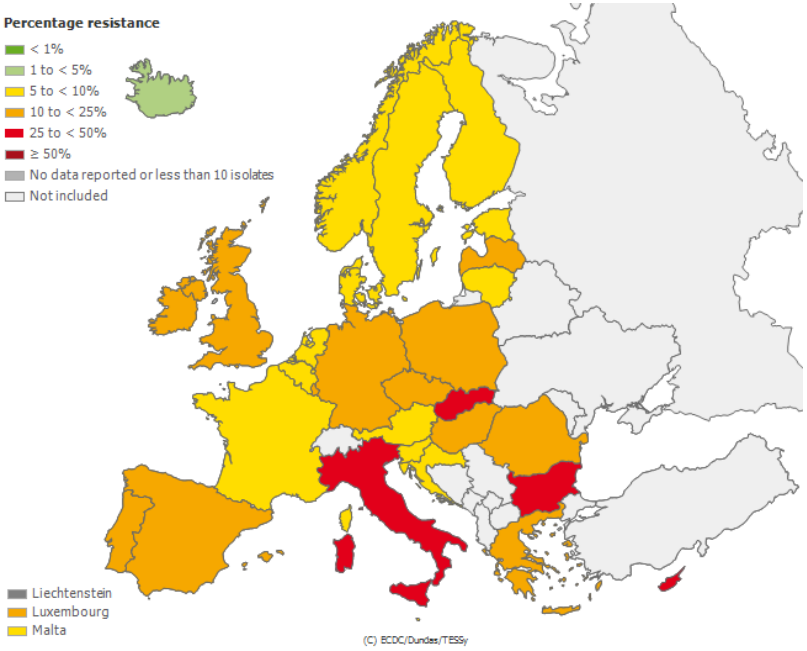


E.coli resistant to 3rd generation Cephalosporins

2002

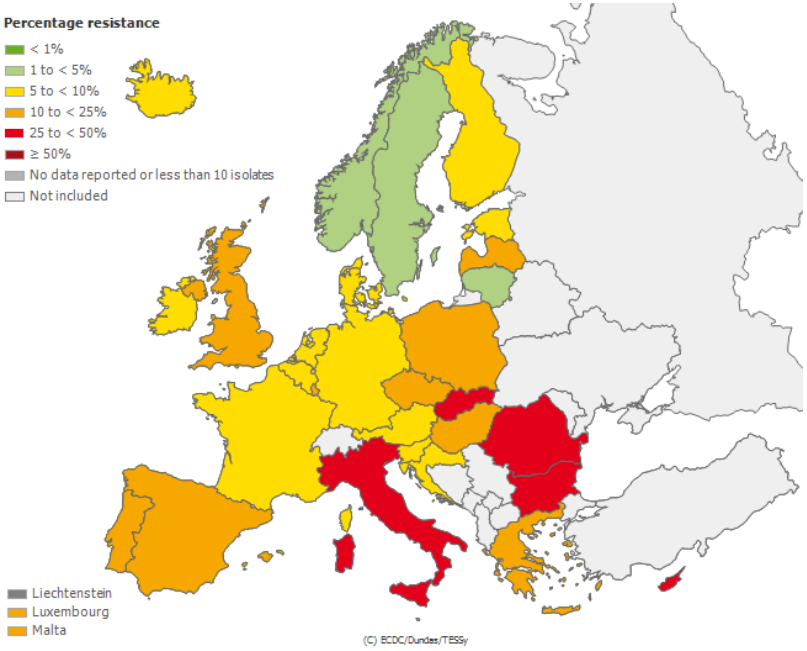


2013

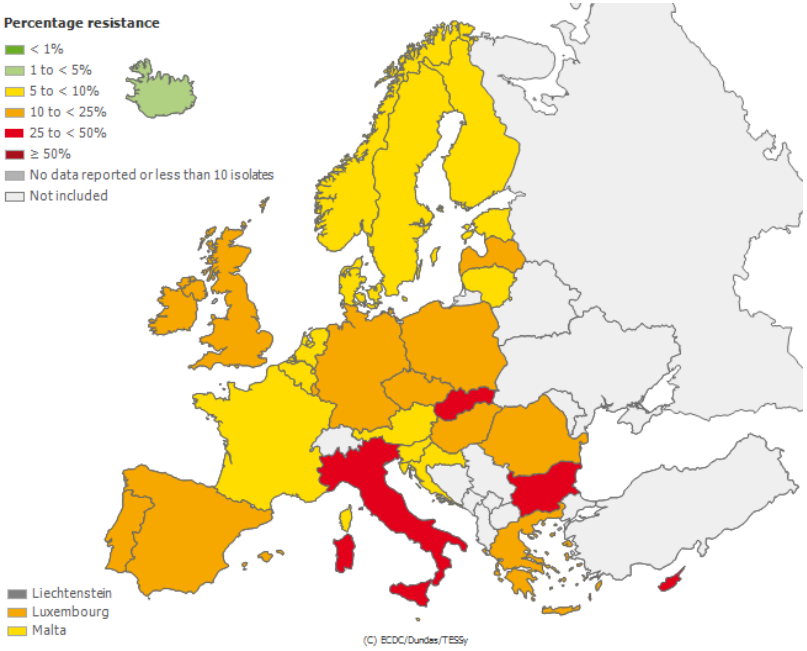


E.coli resistant to 3rd generation Cephalosporins

2012

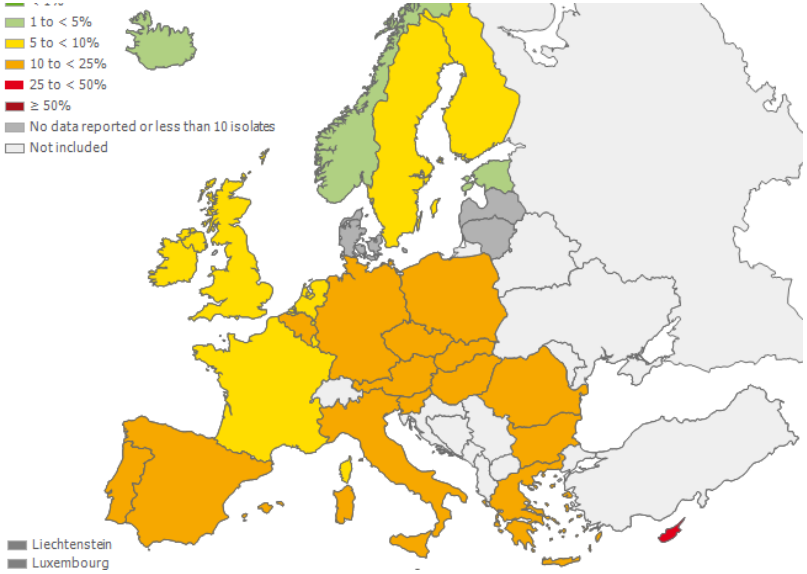


2013

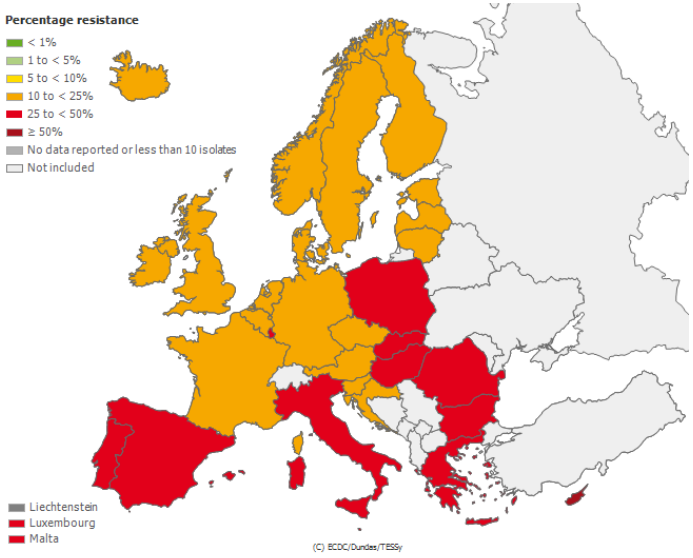


Fluoroquinolones (R) resistant Escherichia coli isolates in participating countries

2003 -2003

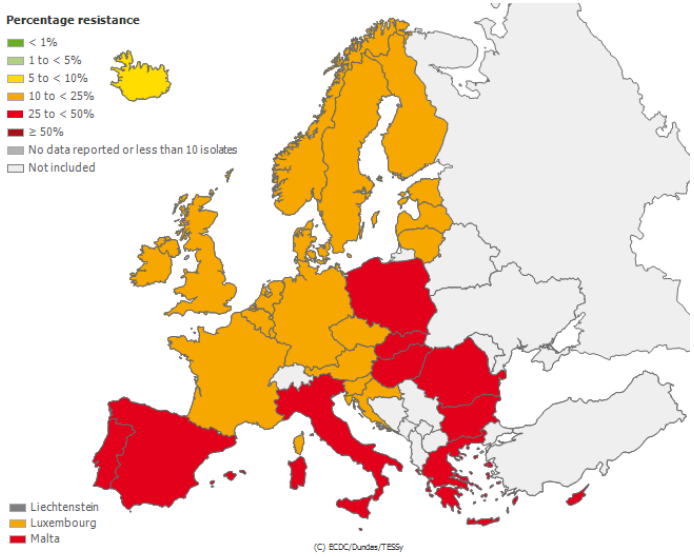


2013

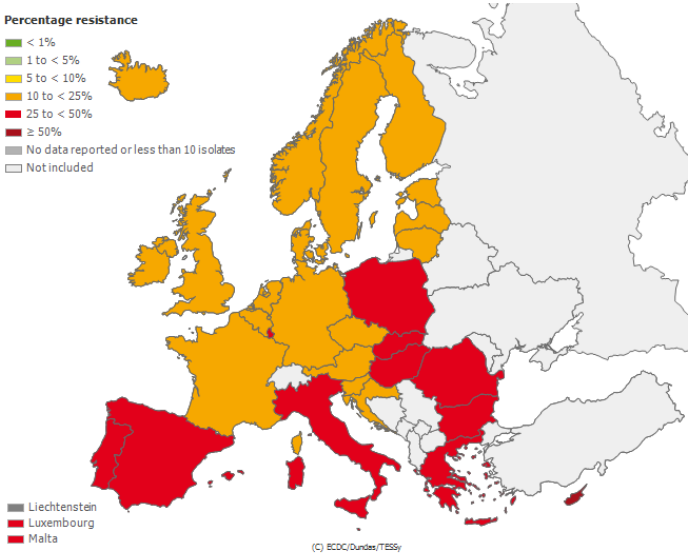


Fluoroquinolones (R) resistant Escherichia coli isolates in participating countries

2012

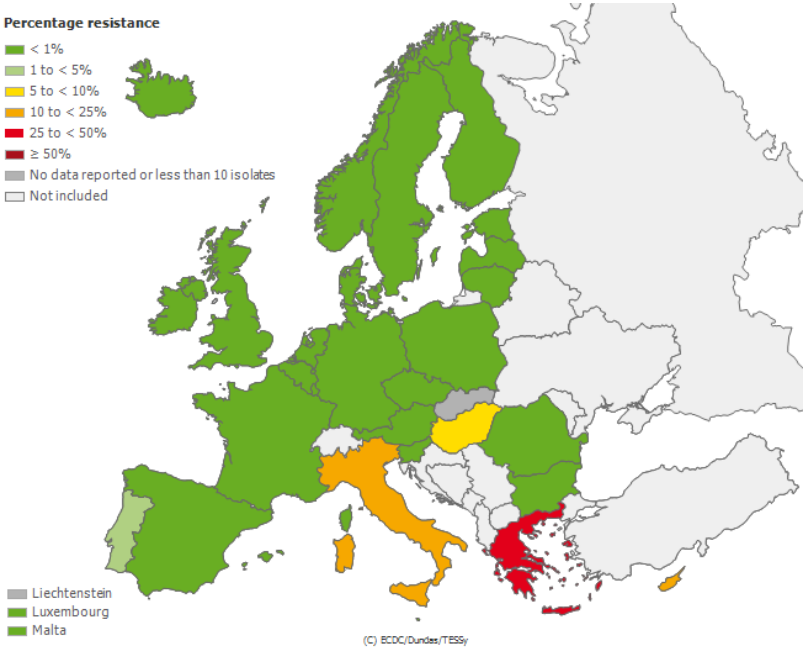


2013

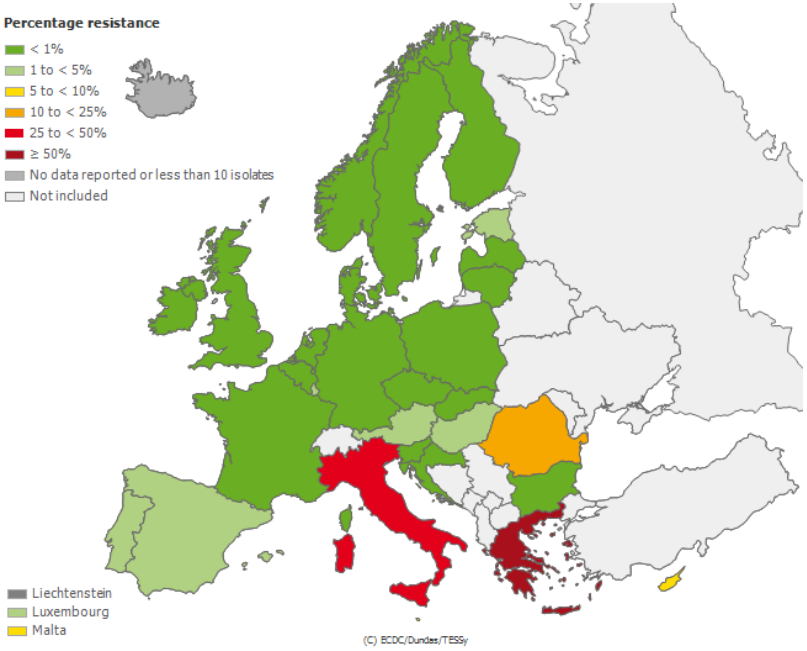


Carbapenem resistant *Klebsiella pneumoniae* (“CRE”) bloodstream infections in Europe

2010

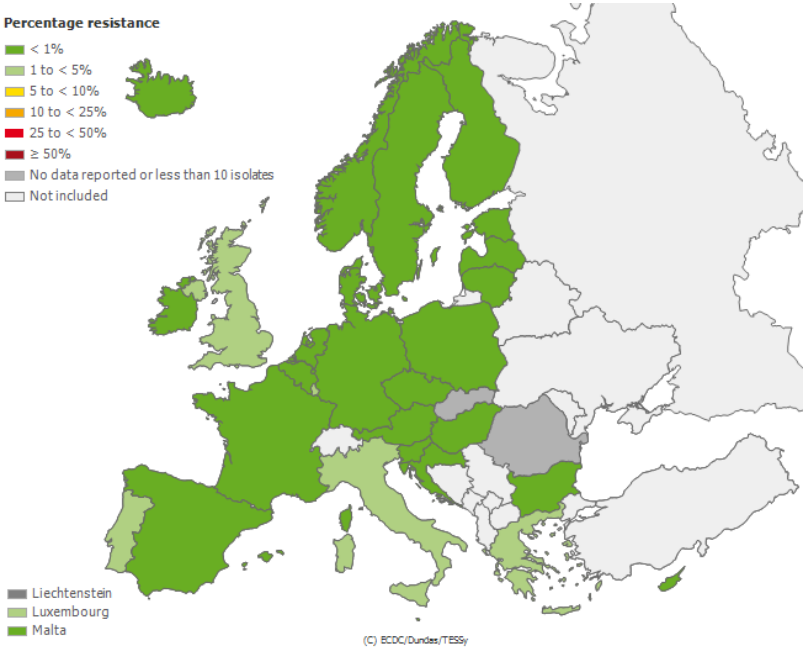


2013

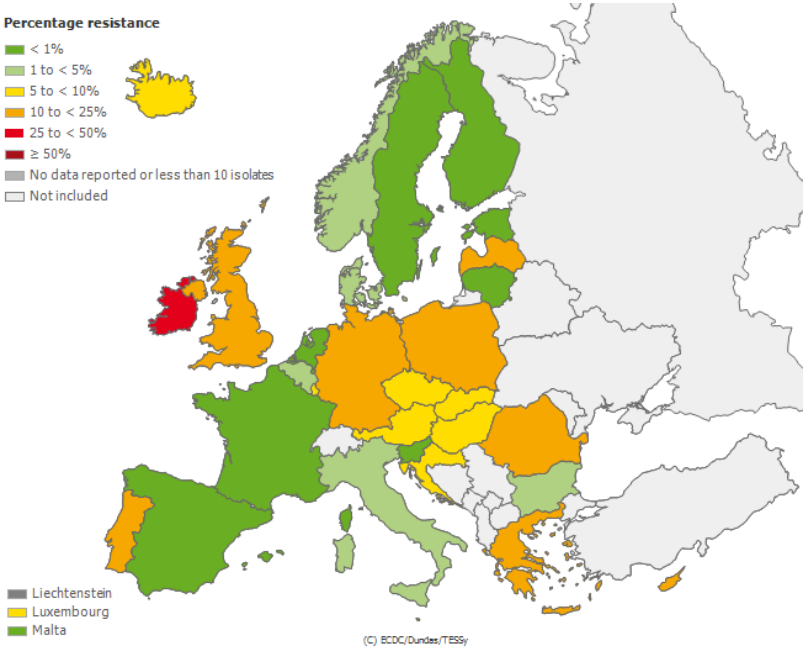


Proportion of Vancomycin Resistant (R) Enterococcus faecalis Isolates in Participating Countries

2010

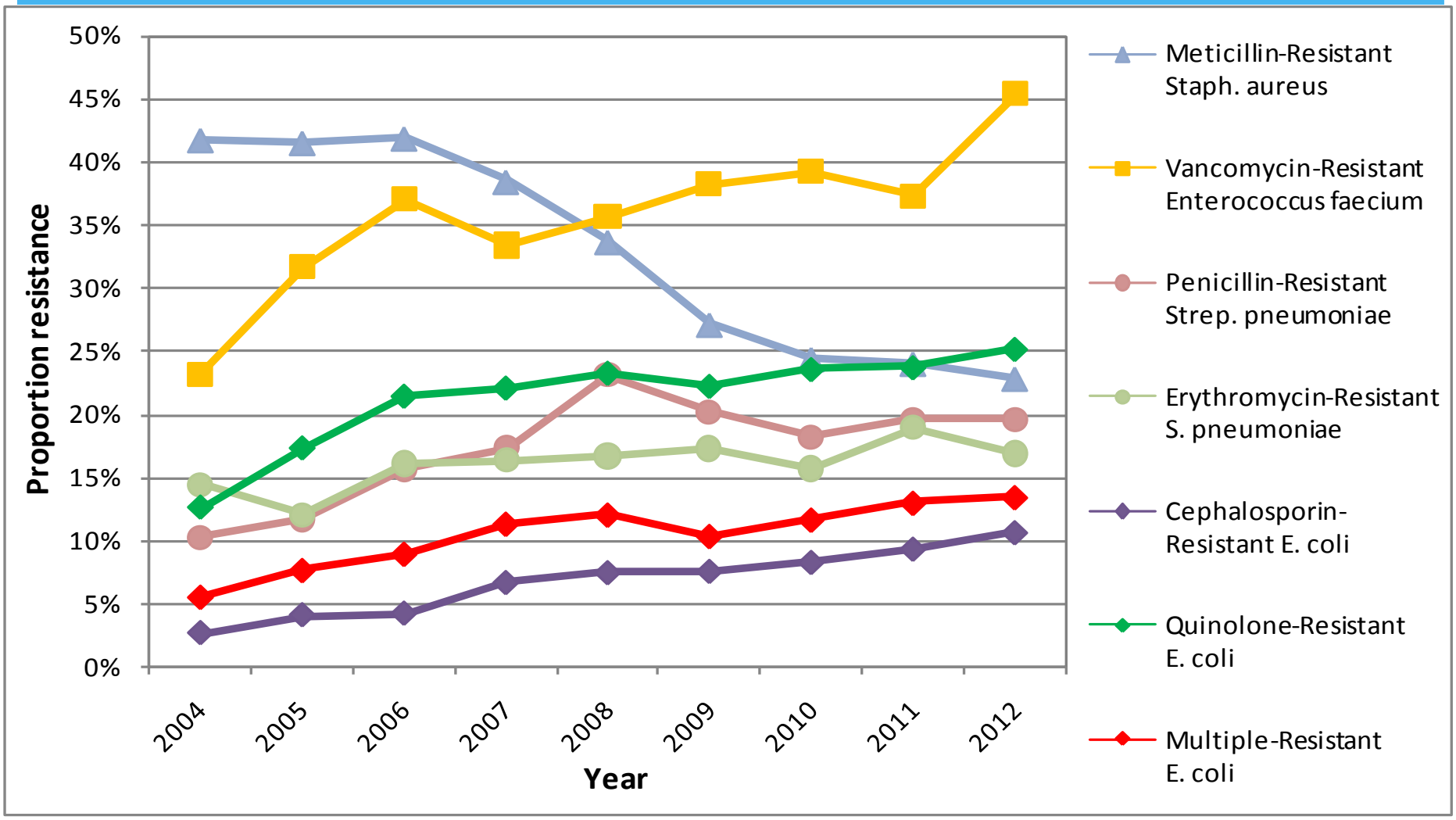


2013



Levels of AMR consistently correlate with the levels of antibiotic consumption

Antimicrobial resistance trends: Bloodstream infections in Ireland: 2002-2012



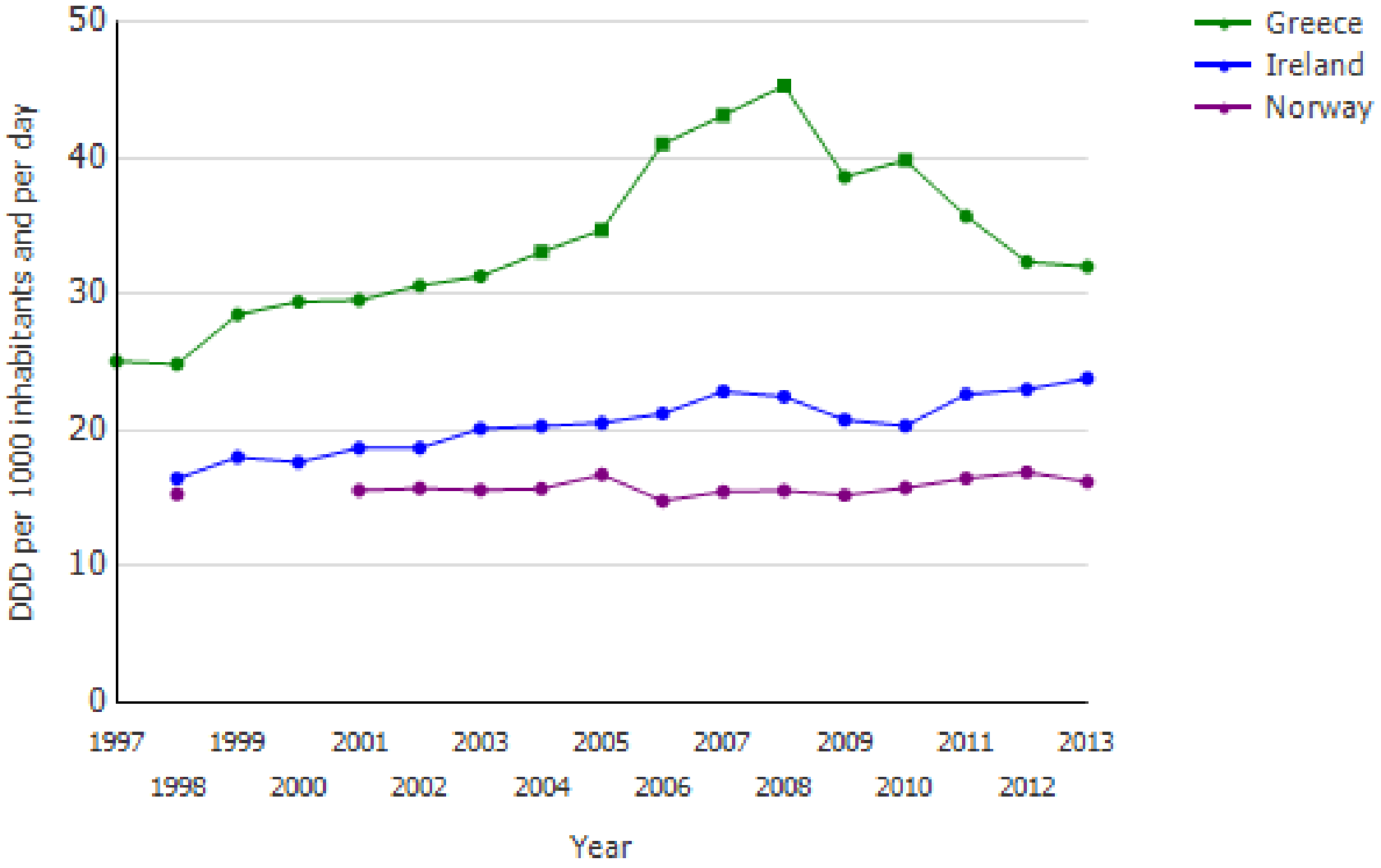
Data source: HPSC/EARS-Net

First Discussion

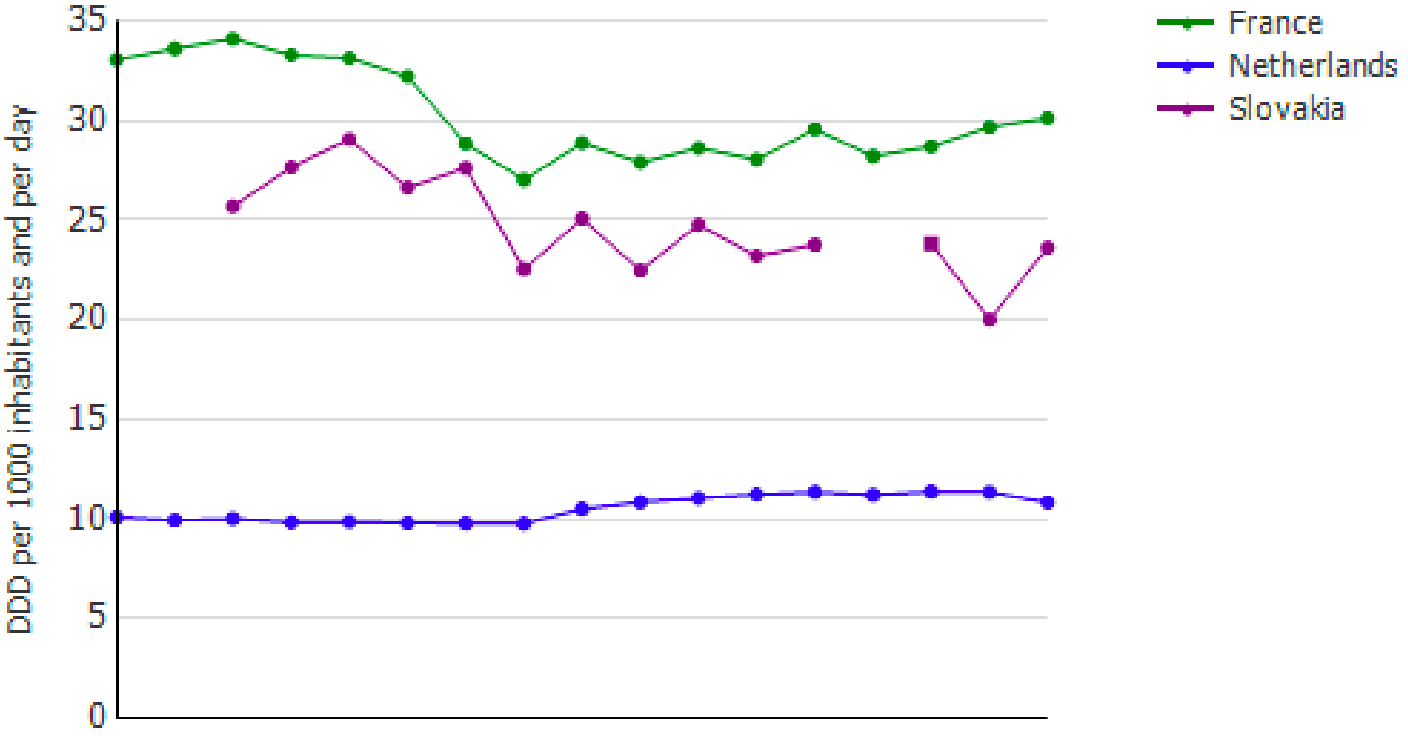
* Why are there such differences between countries ?
* What about the northern southern European divide ?
* Have you any idea about antibiotic consumption rates in your country ? *HINT –ECDC website*
* Were you aware of the scale of the problem we are facing with antimicrobial resistance ?
* Why has this problem arisen ? What factors other than antibiotic prescribing in the community might be involved ?

Consumption of antimicrobials of Antibacterials For Systemic Use (ATC group J01) in the community (primary care sector) in Europe, reporting year 2013

ANTIBIOTIC USE 1997 – 2013: GREECE, IRELAND, NORWAY



France v Netherlands v Slovakia



Why has this problem of Antibiotic resistance emerged? Multifactorial

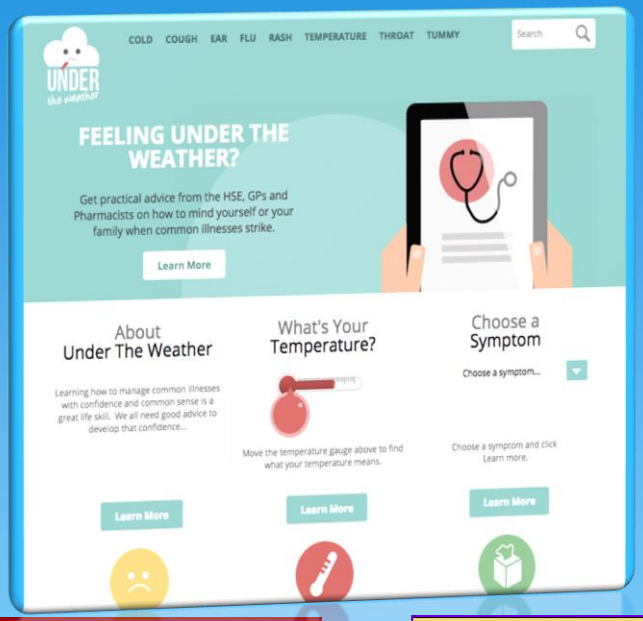
* Increasing complexity of healthcare
* Ageing population
* Concerns about 'missing sepsis'
* Overuse of broad spectrum agents
* Failure to de-escalate from broad spectrum to narrow spectrum
  * Not sending specimens to lab
  * Not acting on lab reports
* Overly lengthy treatment courses
* Lack of awareness about the issue of resistance among HCW
* Lack of patients awareness about the issue of resistance
* Patient compliance issues
* Time pressure
* Patient pressure
* High antimicrobial use in veterinary sector
* Lack of regulation of antimicrobial dispensing in some countries
* Poor sanitation in developing world

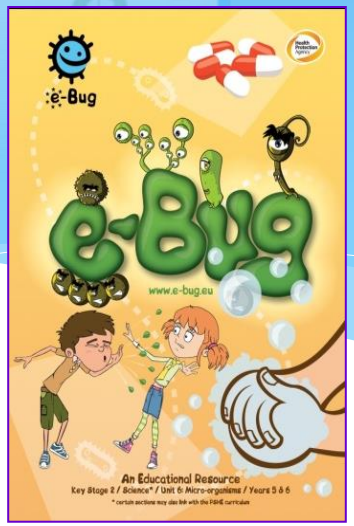
Second Discussion

* What can we do combat the problem of AB resistance ?
* Who is responsible ?

Public Antibiotic Awareness Campaign

Explain why we need to need to preserve this precious resource





Undertheweather.ie

What to look for

What can you do ?

When to seek help ?

KEY MESSAGES

Antibiotics can kill bacteria.

They have no effect on viruses such as head cold, flu, chickenpox.

They will not reduce a fever

They will not relieve pain.

Rest, fluids and TLC important part of recovery from all infections.

Do they know how to take them correctly?

http://www.hse.ie/antibiotics/

Not just all about reducing antibiotic usage
Other things patients can do to fight AMR

Immunisation

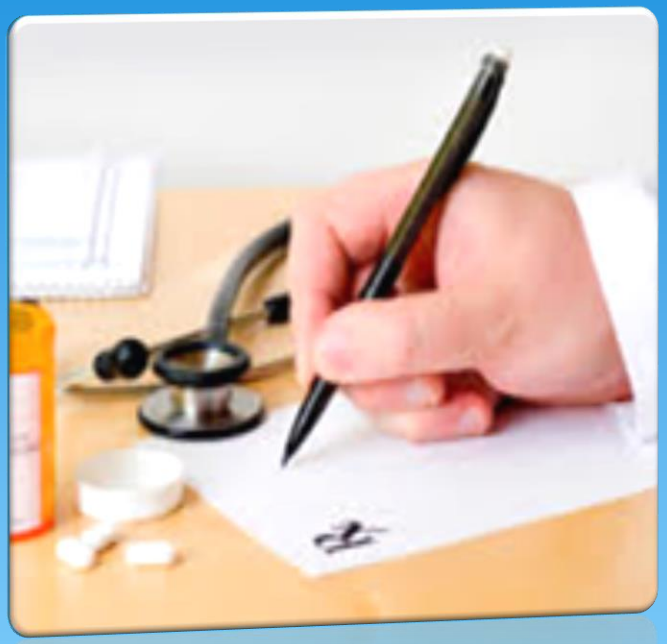
Flu and pneumonia ,Hib meningits C, hepatitis B , whooping cough ,measles , mumps ,rubella …the options increasing every year

Practice Good Infection Prevention Control Measures

Hand Hygiene,Cough Etiquette

Educate Parent and Children about infection prevention

Every time we consider prescribing GP's need to ask themselves ……



Is this antibiotic really necessary ?

If you decide to prescribe ask the following questions ?

- What condition?
- Right drug ?
- Right dose?
- Prescribed time?
- Any investigations?
- Do I know about guidelines and am I using them?

Narrow versus broad-spectrum

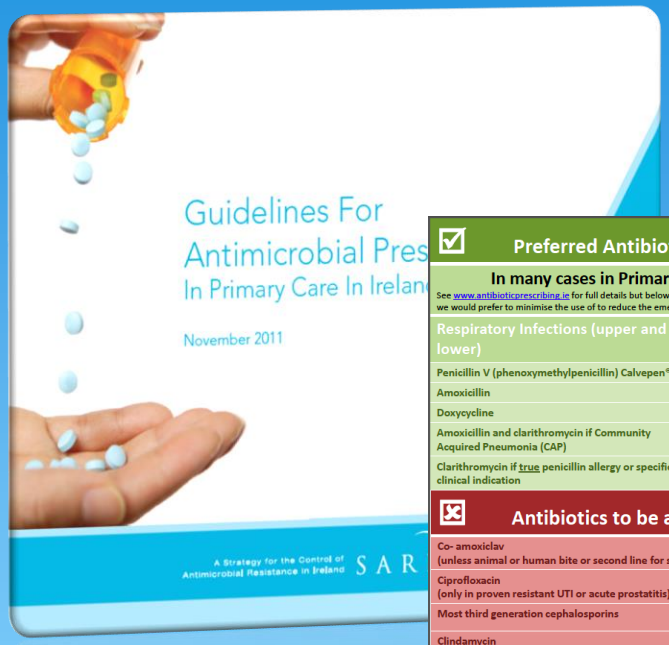
Penicillin V for strep throat

Co amoxiclav for strep throat

GP's need to think more scientifically – what are you treating ?

What can individual Gp's do to ensure safe antibiotic use?

Reflect on your individual prescribing habits .



Preferred Antibiotics in Primary Care

HCAI | Medicines Management Programme — Prescribing Tips and Tools

In many cases in Primary Care the *Preferred Antibiotic* is *No antibiotic*

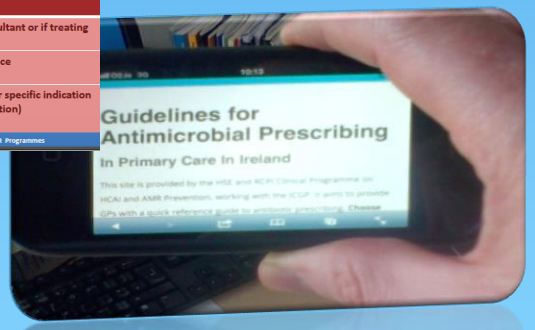
See www.antibioticprescribing.ie for full details but below are the preferred first line treatment choices when antibiotics are indicated and which antibiotics we would prefer to minimise the use of to reduce the emergence of resistance.

Respiratory Infections (upper and lower)	Urinary Tract Infections	Soft tissue infections – cellulitis, acne
Penicillin V (phenoxymethylpenicillin) Calvepen®	Trimethoprim	Flucloxacillin
Amoxicillin	Nitrofurantoin	Doxycycline
Doxycycline	Fosfomycin	Lymecycline (Tetralysal®)
Amoxicillin and clarithromycin if Community Acquired Pneumonia (CAP)	Cephalexin	Trimethoprim
Clarithromycin if true penicillin allergy or specific clinical indication		

Antibiotics to be avoided in Primary Care

Co- amoxiclav (unless animal or human bite or second line for some infections)	Azithromycin – only on advice of consultant or if treating STI
Ciprofloxacin (only in proven resistant UTI or acute prostatitis)	Moxifloxacin – only on consultant advice
Most third generation cephalosporins	Macrolides (unless penicillin allergic or specific indication e.g. mycoplasma, helicobacter eradication)
Clindamycin	

February 2015 — Medicines Management and HCAI/AMR Programmes



Have I consulted the antibiotic guidelines recently? www.antibioticprescribing.ie

Third discussion

* Where might you start in your country ?
* How might you change what you do in your clinical practice after today ?

Things you can do now to help reduce Antimicrobial Drug resistance

Do not prescribe antibiotics unless there is a definite clinical indication to do so

Prescribe first line preferred antibiotics

Co-amoxiclav is not a first-line drug for the common conditions encountered in General Practice

Prescribe phenoxymethylpenecillin for tonsillitis unless the patient is truly allergic to penicillin.

Restrict macrolides to patient with true penicillin allergy or definite clinical indication e.g mycoplasma

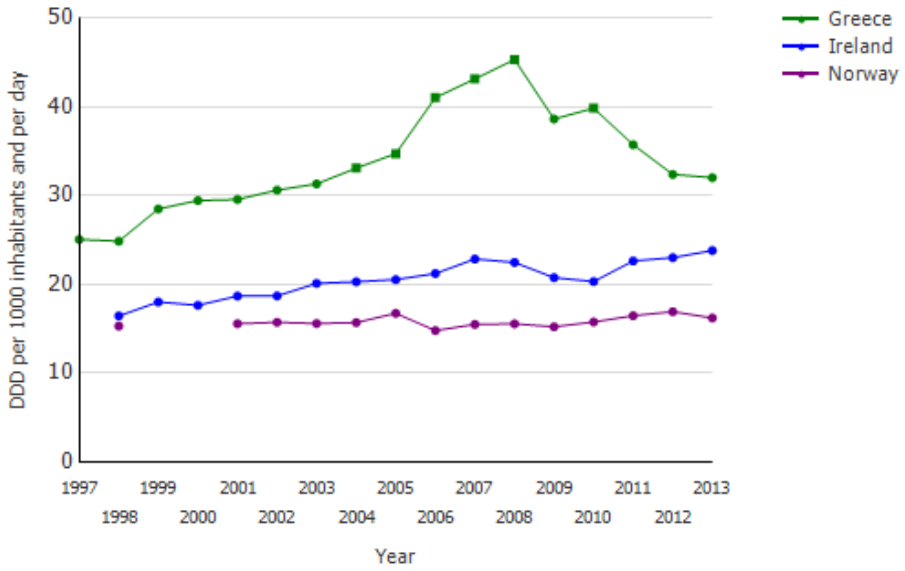
Review any patients in LTCF on prophylactic treatment for UTI

Develop simple antibiotic prescribing policy for your practice and for nursing home residents based on www.antibioticprescribing.ie

Possible idea for audit requirement's 2014/2015 cycle

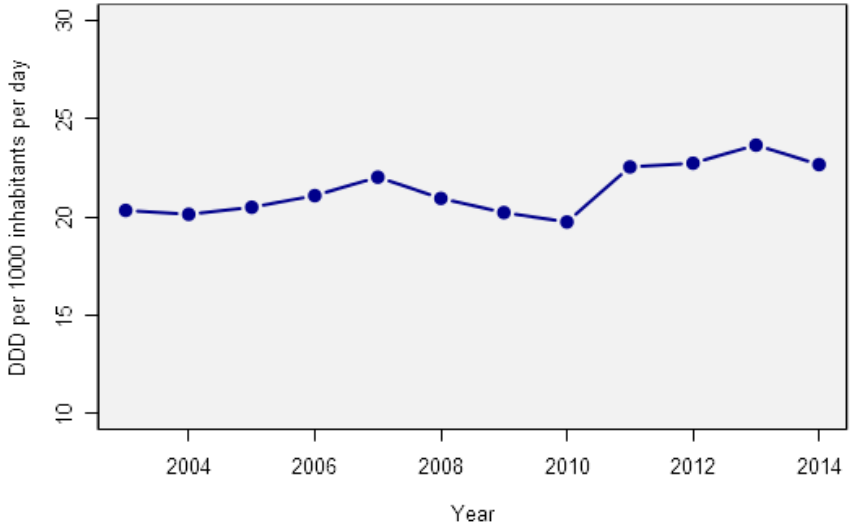
We can reduce consumption –look at Greece

Trend of the consumption of antimicrobials in ATC group J01 (antibacterials for systemic use) in the community (primary care sector) in Greece, Norway and Ireland from 1997 to 2013

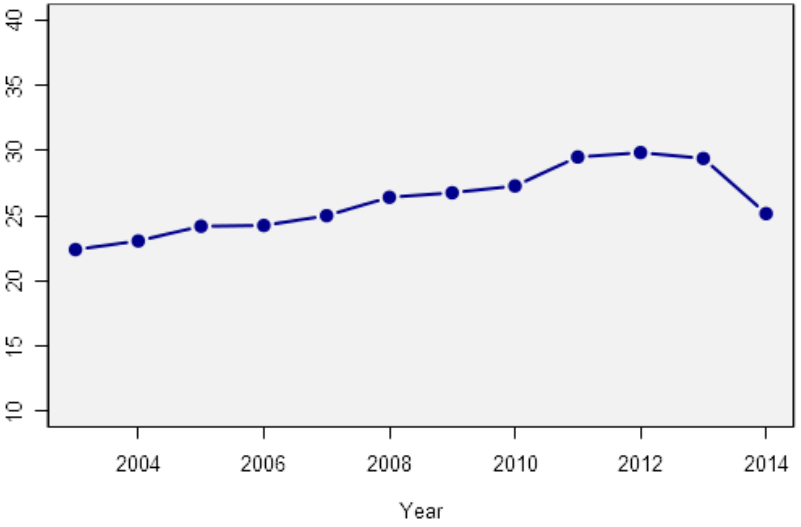


Ireland – We can improve the quality of a Antibiotic Prescribing

Community Antibiotic Consumption first half 2014

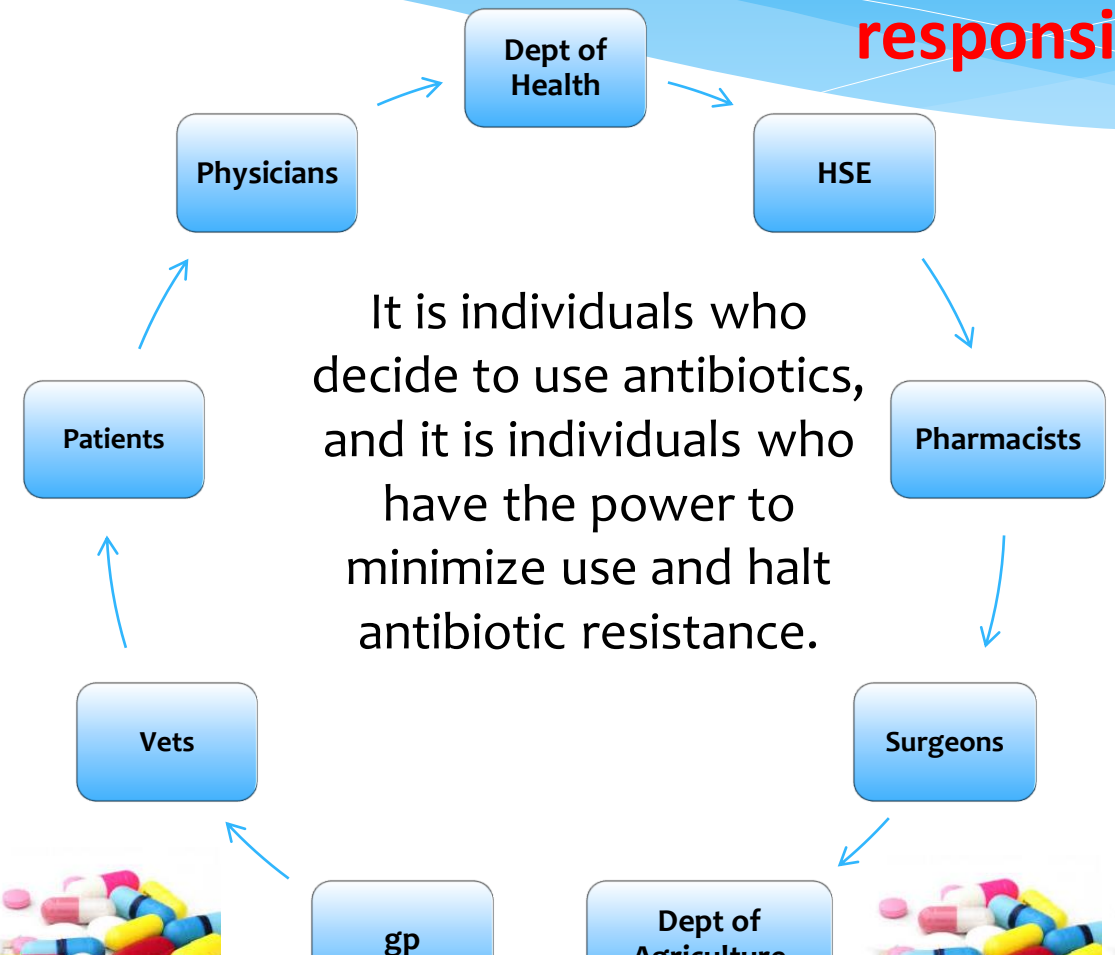


Use of co amoxiclav



Keeping Antibiotics Safe And Effective For Future Generations …

It's everyone's responsibility



It is individuals who decide to use antibiotics, and it is individuals who have the power to minimize use and halt antibiotic resistance.