



European Antibiotic Awareness Campaign 2016 November Webinar Series on Antibiotic Prescribing

How is Ireland performing on antibiotic prescribing?

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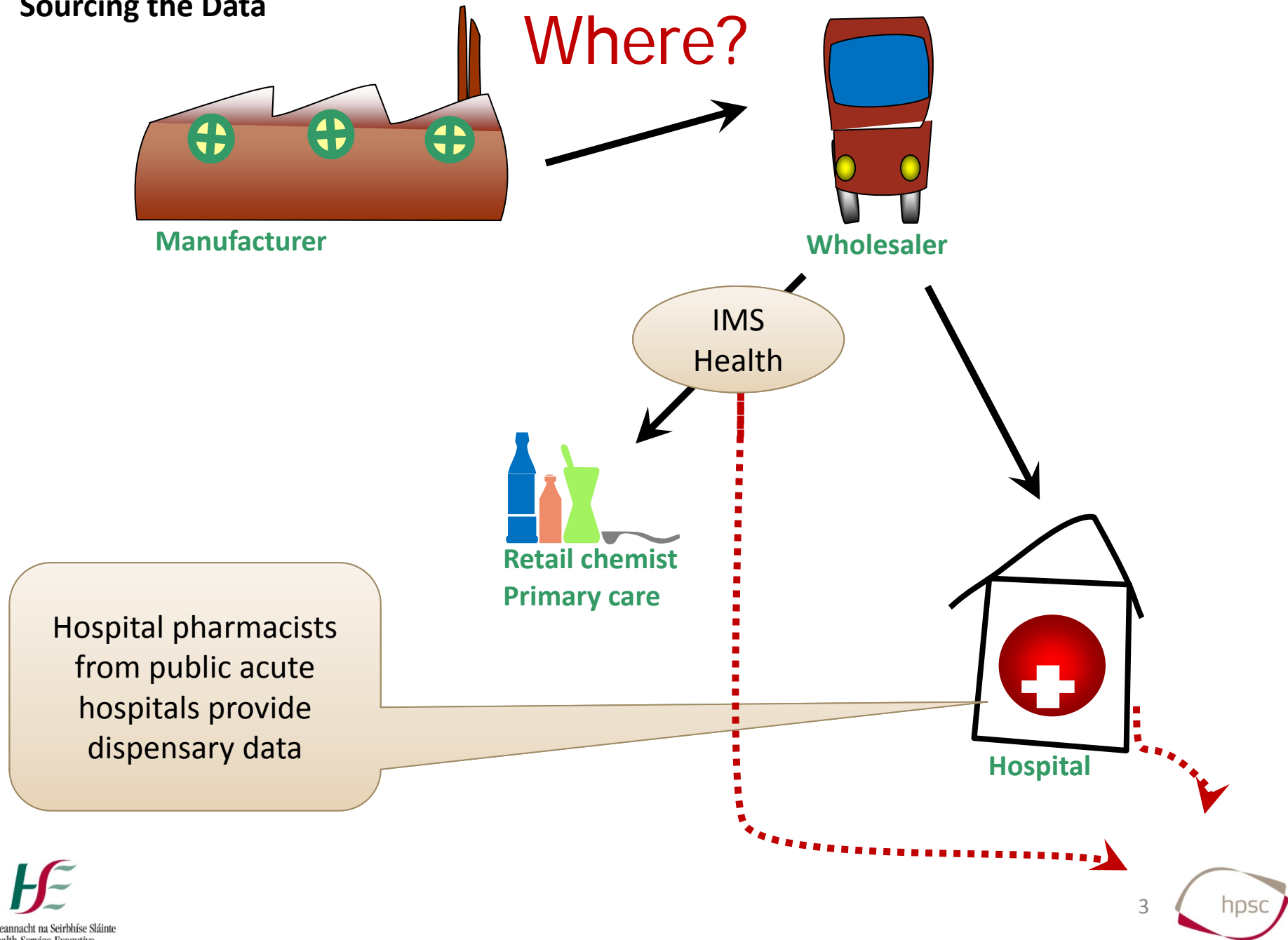
HSE-Health Protection Surveillance Centre

Why?

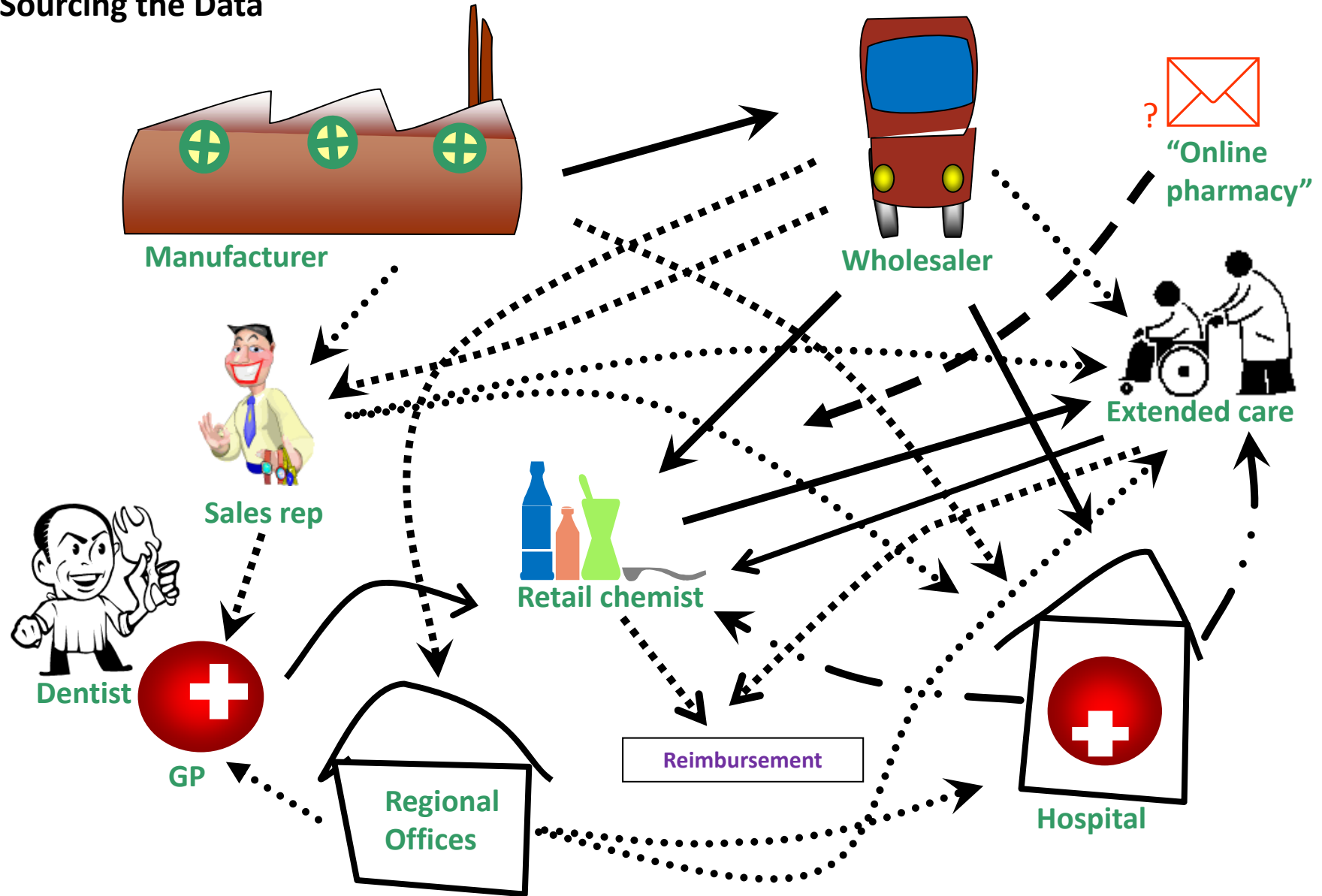
- Resistance to antibiotics in bacteria is increasing
- Multi-drug resistance is increasing
- Novel drug discovery is slowing down
 - Very few new antibiotics in the pipeline!
- Therefore, use what we have prudently

....but first measure what we use

Sourcing the Data

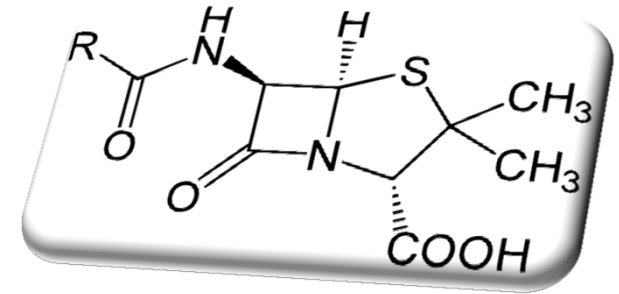


Sourcing the Data



What?

“Antibiotics”

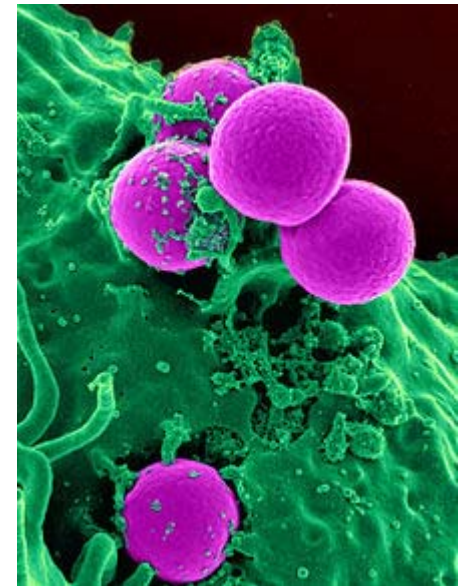


- Systemic Anti-bacterial Agents

- Not anti-fungal
- Not anti-viral
- Not anti-parasitic
- Not anti-TB

- Parenteral (IV), suppositories, inhalants and oral preparation

- Not lotions or creams





How?

- WHO has a code Anatomic Therapeutic Chemical (ATC) and value Defined Daily Dose (DDD) for each drug
- We look at how many packs of which drug are used in a particular location over a specific time period
- Map this to ATC/DDD, sum and express as a rate per population

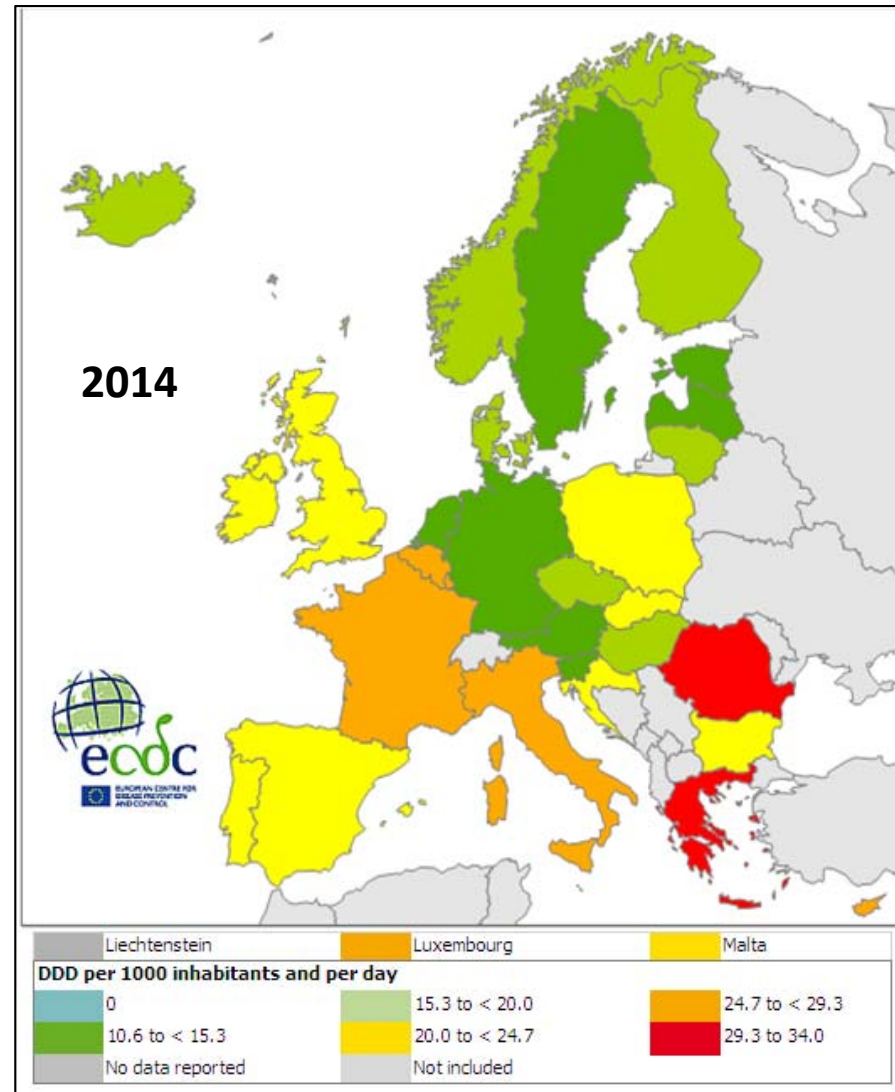
Primary-care Antimicrobial Consumption

- EU Comparisons
- Antibacterial class of drug
- Seasonal fluctuation & recent trend
- Geographic distribution
- Latest data



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Primarycare Antimicrobial Consumption

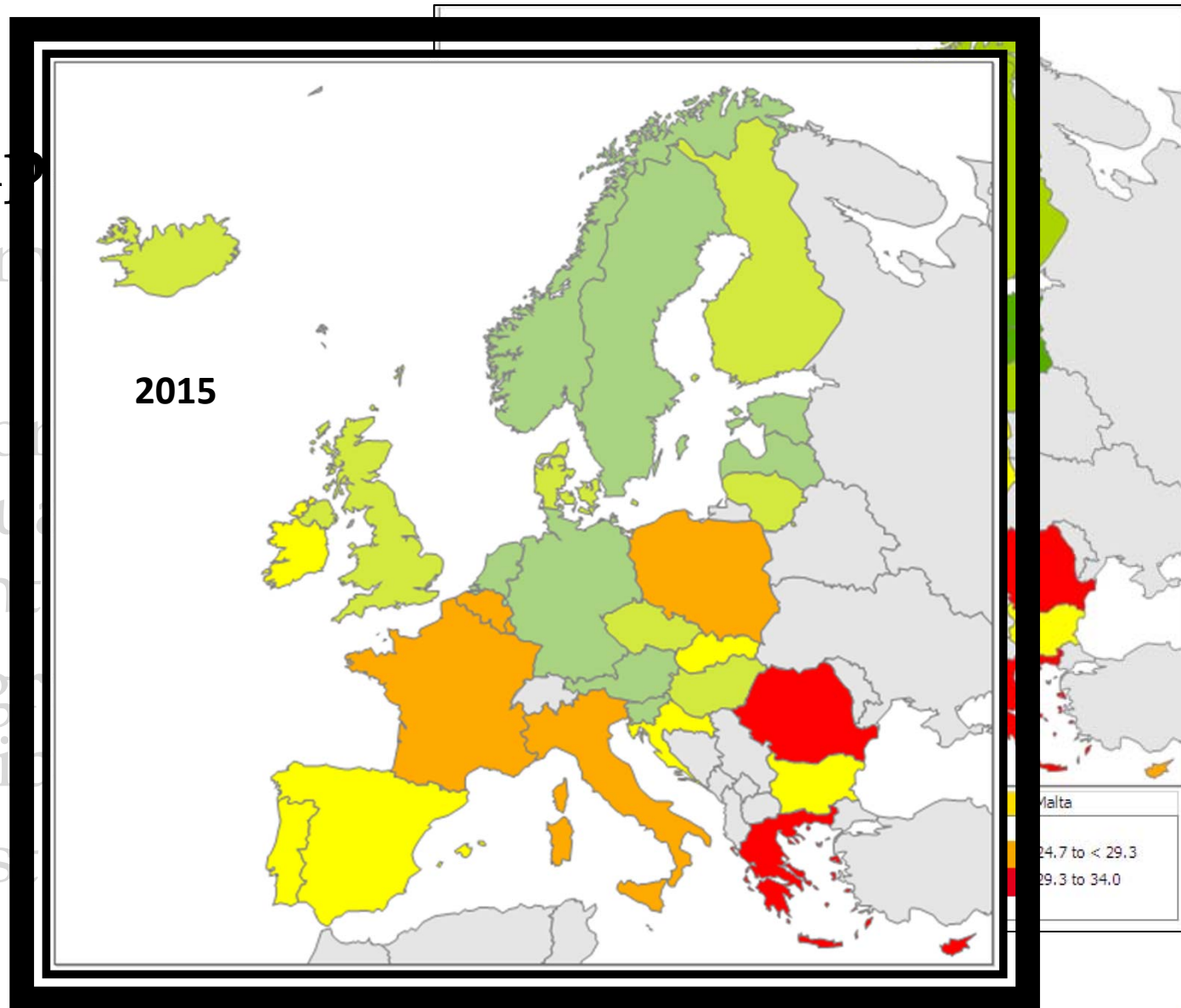
- EU Comp

- Antim class

- Seasonal fluctu

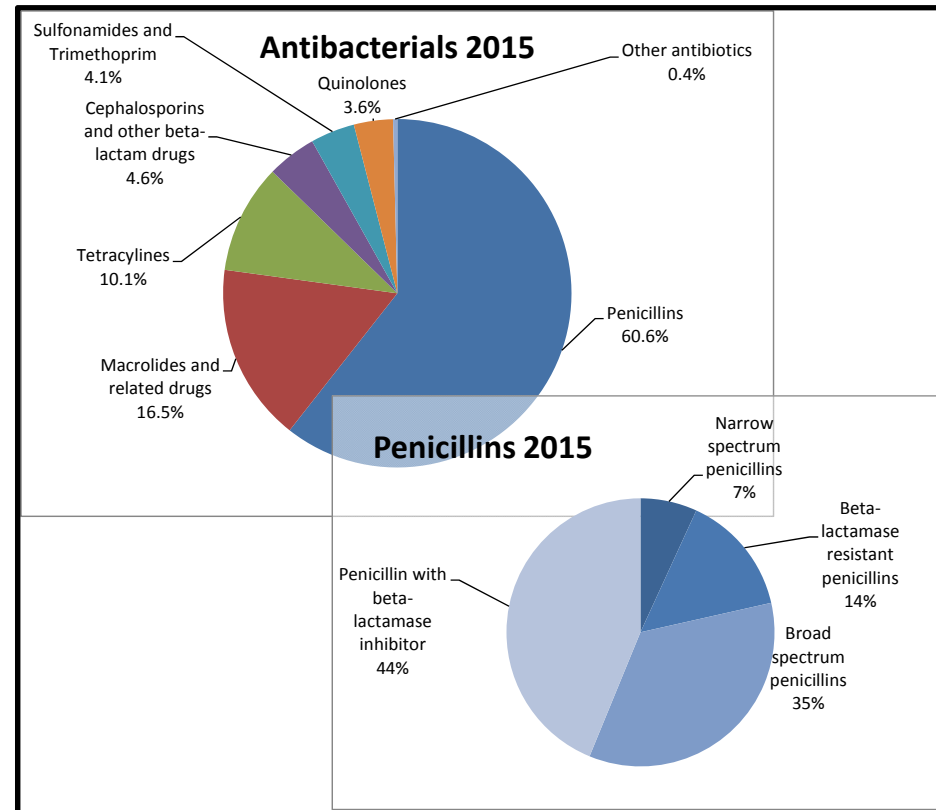
- Geog distr

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Primarycare Antimicrobial Consumption

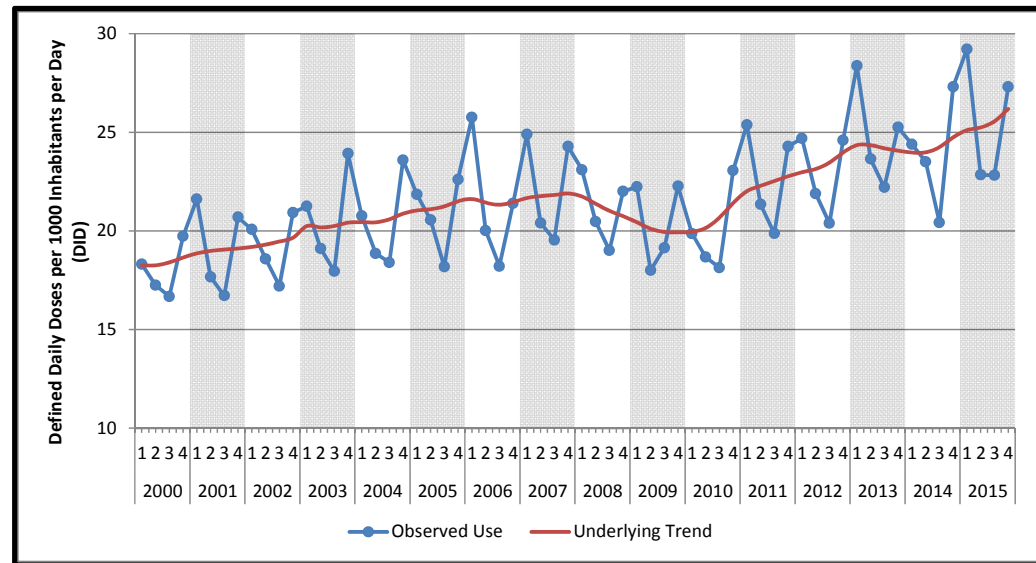
- EU Comparisons
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- Co-amoxilcav use in Ireland is high; macrolide use is also high

Primarycare Antimicrobial Consumption

- EU Comparisons
- Antimicrobial class
- **Seasonal fluctuation & recent trend**
- Geographic distribution
- Latest data



- Winter rises mean the usage in some months is very high and the overall rates appear to be increasing steadily

Primarycare Antimicrobial Consumption

○ EU

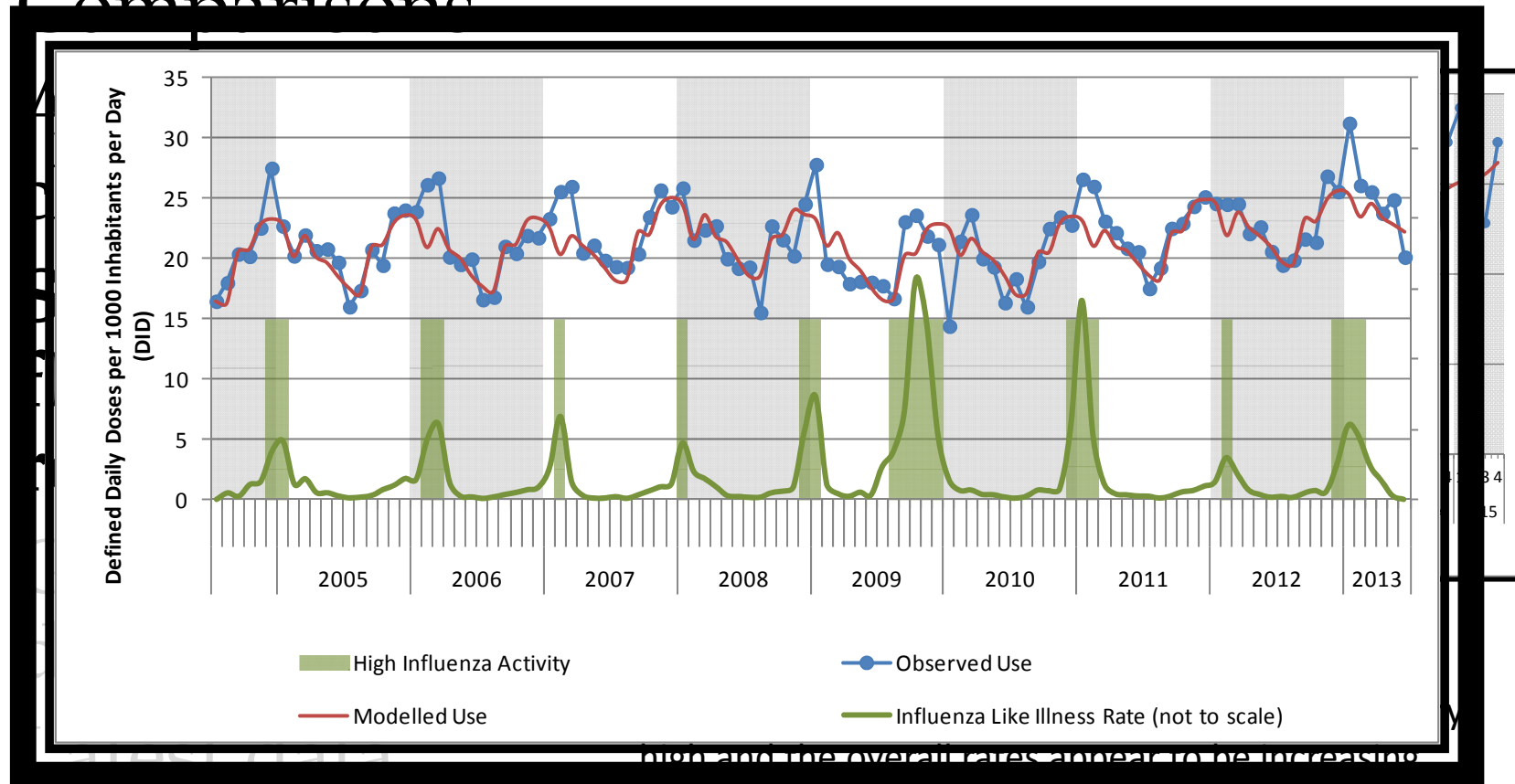
Comparisons

○

○

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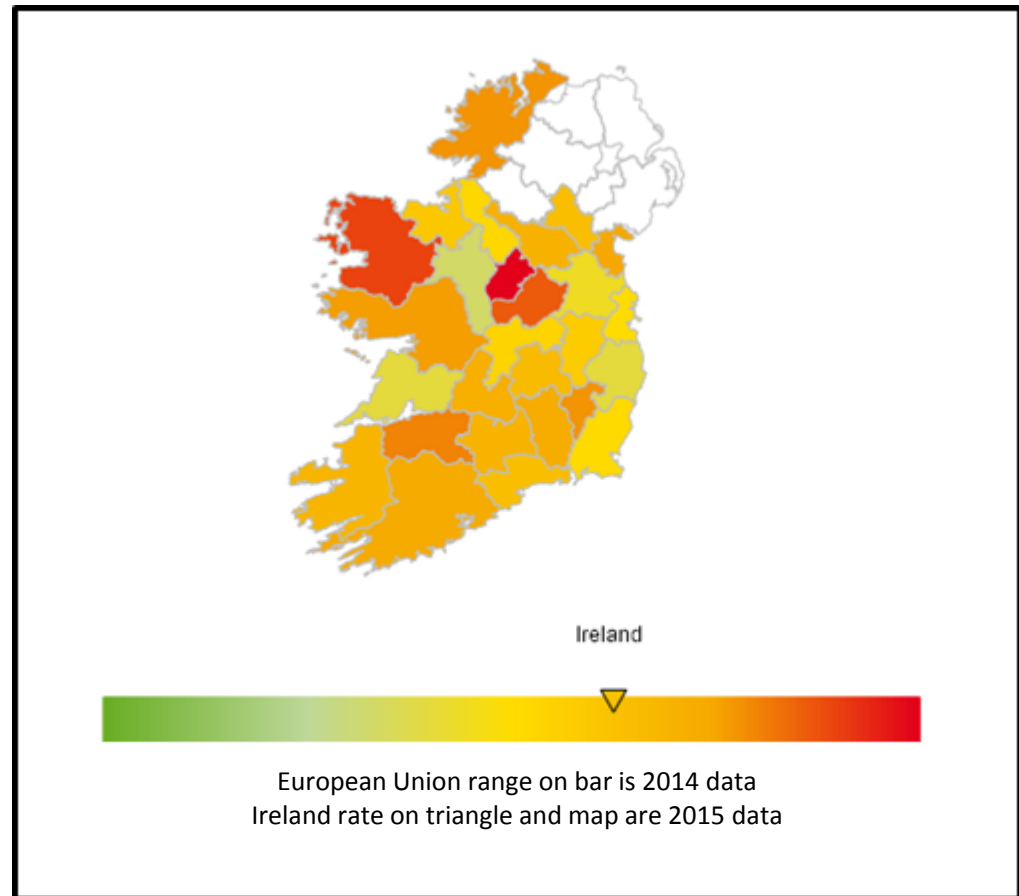
○



steadily

Primarycare Antimicrobial Consumption

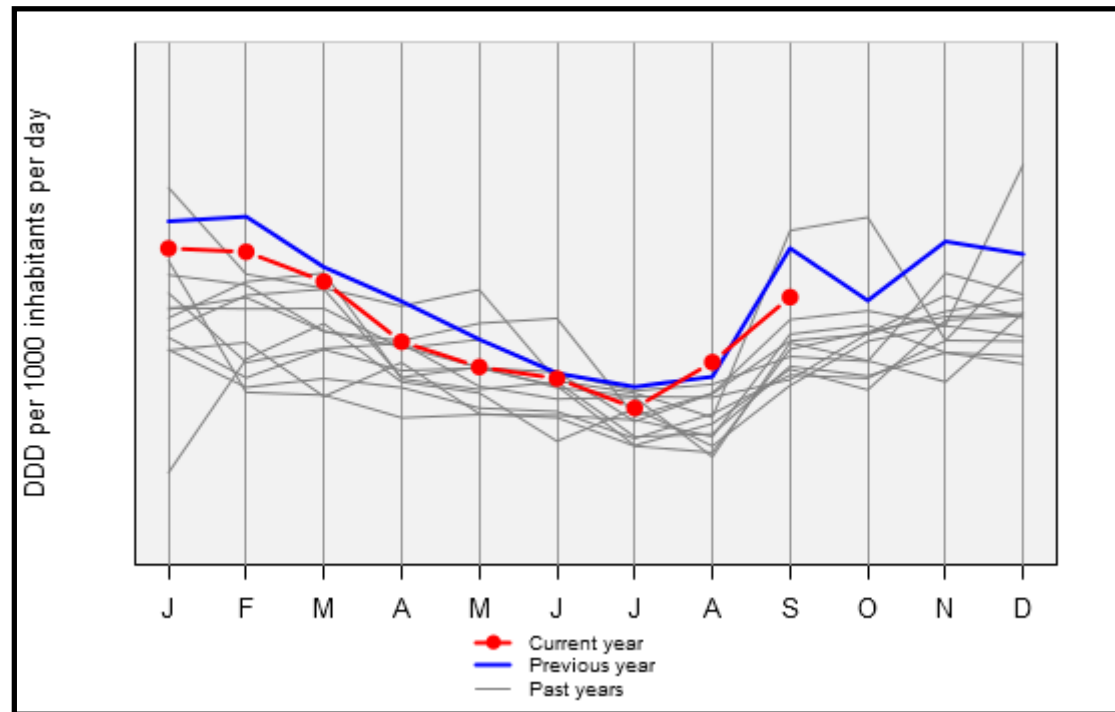
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- Some areas have very high use

Primarycare Antimicrobial Consumption

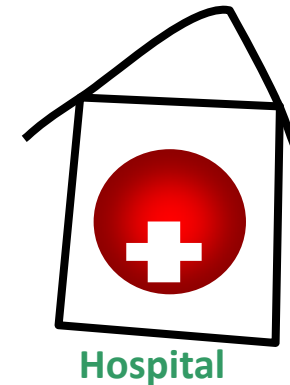
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- So far the **preliminary results** show monthly rates for 2016 are lower than 2015 rates

Hospital Antimicrobial Use

- Routine quarterly data
- Point prevalence survey



Web-based Data System



MICROB [Home] [HELP] [Change Password] Logged in as **SACHC_Test1** [Log Out]

Main Page Preference View Other Layout *

MAIN PAGE

Barlow General Hospital (TEST2)

New layout

Hospital Antimicrobial Consumption Overview

Current period of interest is 2015Q1Q2

> Stage: Now seeking approval

> Deadline: 30 Oct 2015

Please check your finalised report and approve for publication [MicroB Wiki](#)

Your file upload status for current period: OK

Most recent total DDD for (included) antibiotics

> 2015Q4 :- 4644.99

> 2015Q3 :- 14417.9

> 2015Q2 :- 16077.9

> 2015Q1 :- 16054.4

> 2014Q4 :- 16258.2

> 2014Q3 :- 14312.7

> 2014Q2 :- 14515.5

> 2014Q1 :- 14451.4

Check your cost centre and other settings

Further results are available (may not be recent)

Printable report for final check

Published reports from the HPSC website

Manage raw files [MicroB Wiki](#)

Series of short queries [MicroB Wiki](#)

Check final report [MicroB Wiki](#)

Please check the HPSC website for published results [MicroB Wiki](#)

SACHC workflow page version 1.0

MICROB


MicroB
MicroB Wiki: Knowledgebase

Secure, detailed breakdown for professionals...

HOSPITAL ANTIMICROBIAL CONSUMPTION - REPORTS

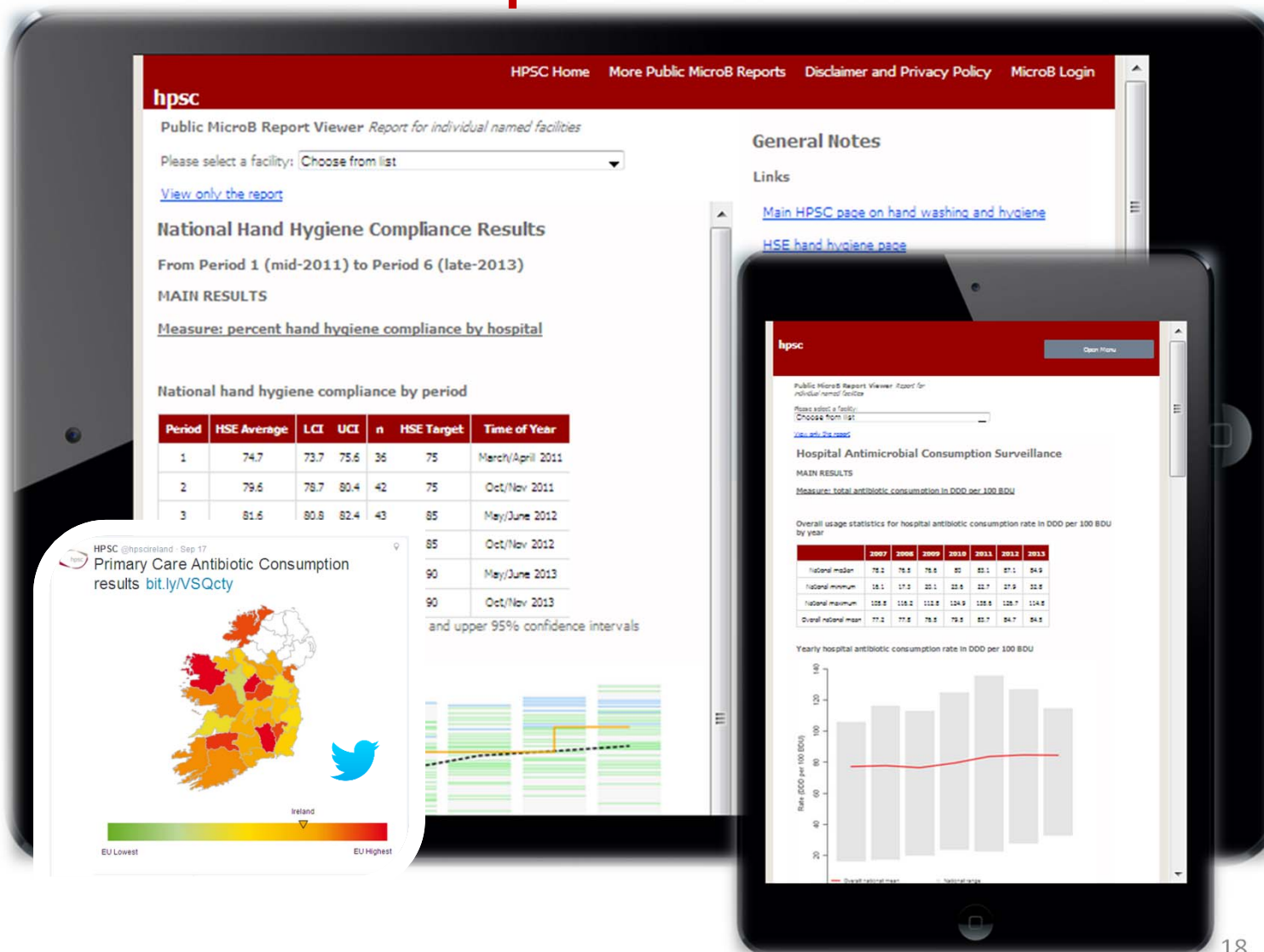
Yearly Report for Hospital: Select a year

2 of 12 Find | Next

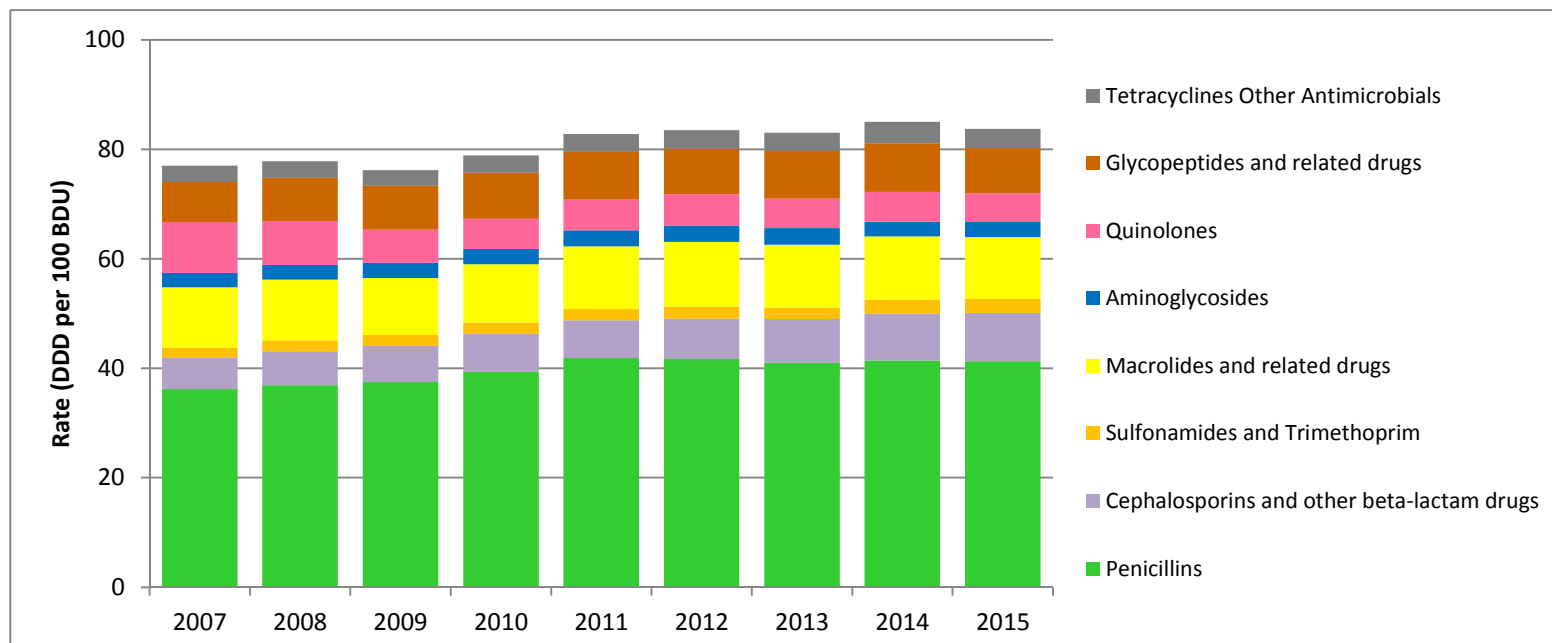
Summary of main measures by hospital type

Measure	Year	Level	% Change	Nat Median	Decile
DrugType:Antibiotic	2013	105.17	23%	85.07	9
AlertAgents:A_AntiGPosAgents	2013	6.03	15%	2.53	9
AlertAgents:B_Gen2Ceph	2013	1.65	13%	2.64	3
AlertAgents:C_Gen3Ceph	2013	1.75	8%	1.53	7
AlertAgents:D_fQs	2013	6.66	-23%	5.33	6
AlertAgents:E_BroadSpecPens	2013	30.64	29%	28.52	7
AlertAgents:F_Carbapens	2013	8.07	62%	1.89	10
AlertAgents:G_Clinda	2013	2.59	174%	0.88	9
A_Alerts:1_O_Lin	2013	0.36	-17%	0.19	8
A_Alerts:2_P_Lin	2013	0.74	62%	0.13	10
A_Alerts:3_O_Van	2013	0.00	0%	0.00	6
A_Alerts:4_P_Van	2013	3.84	11%	1.33	10
A_Alerts:5_P_Tei	2013	0.05	84%	0.32	2
A_Alerts:6_P_Dap	2013	1.05	22%	0.01	10
E_Alerts:1_O_CoAmox	2013	15.21	29%	14.75	6
E_Alerts:2_P_CoAmox	2013	6.32	47%	6.35	5
E_Alerts:3_P_Tazo	2013	9.12	19%	4.85	10
IVProp:SwitchIV	2013	7.89	-12%	6.23	6
IVProp:AllIV	2013	58.36	-4%	48.10	8
DrugType:Antifungal	2013	6.25	14%	1.12	10

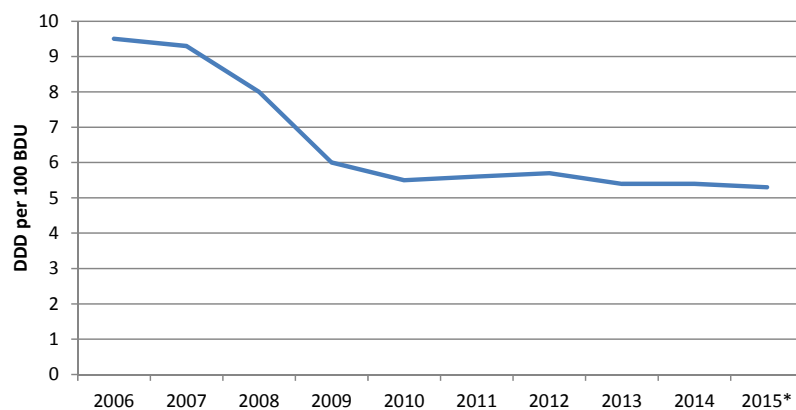
...open access outputs for the public



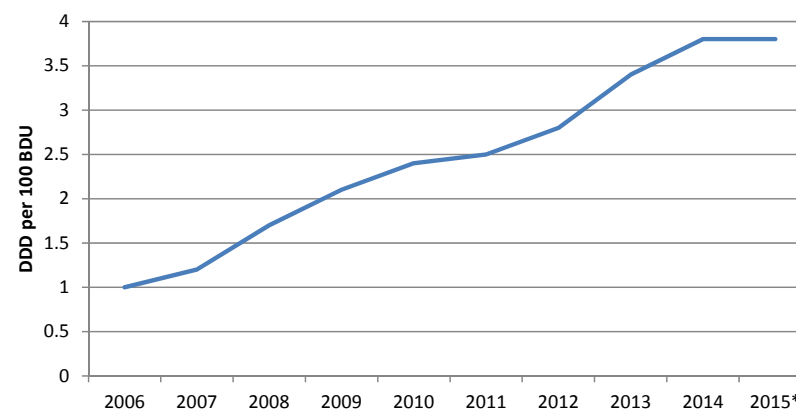
Overall use in hospitals



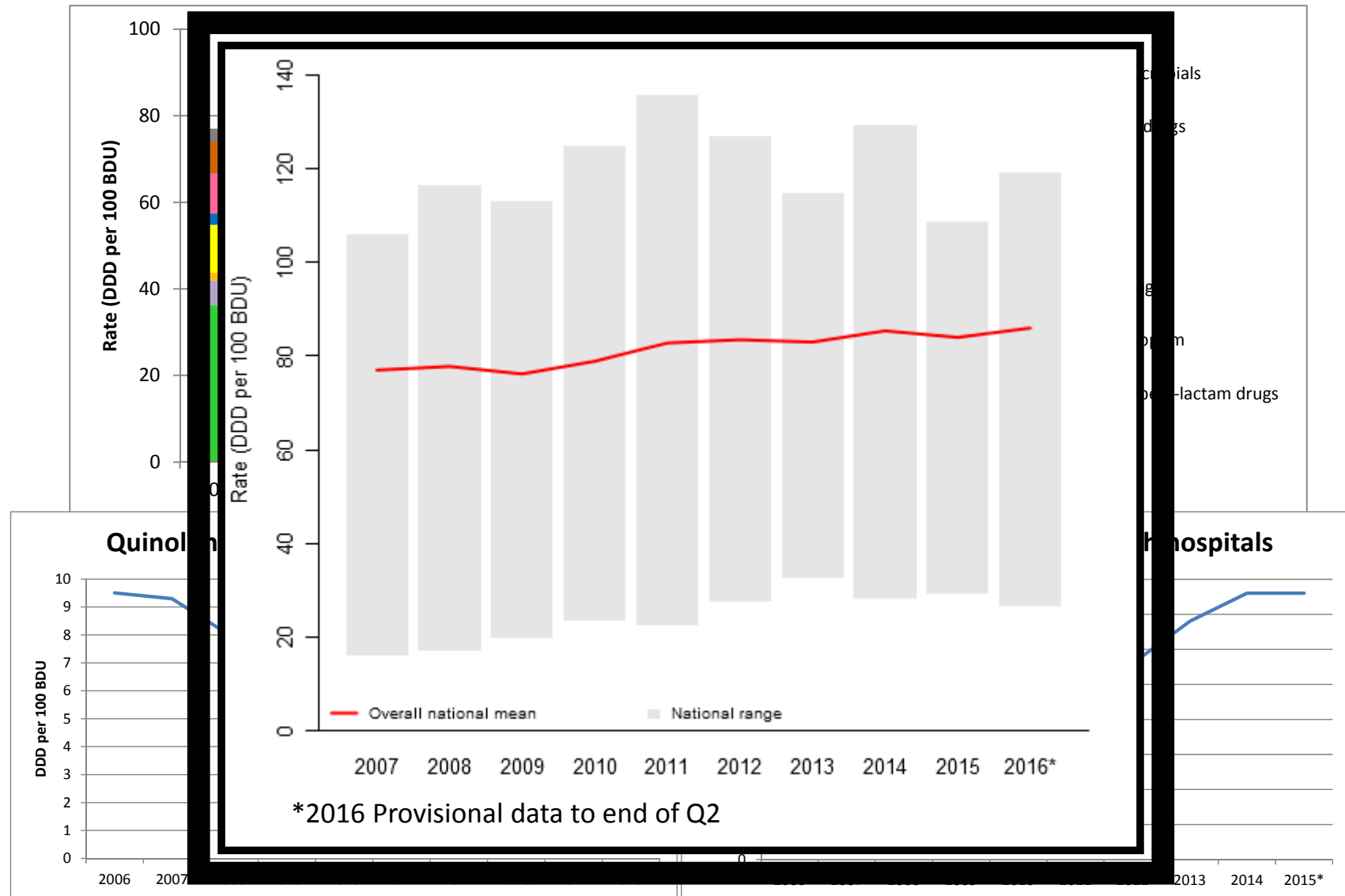
Quinolones (J01M) use in Irish hospitals



Carbapenems (J01DH) use in Irish hospitals

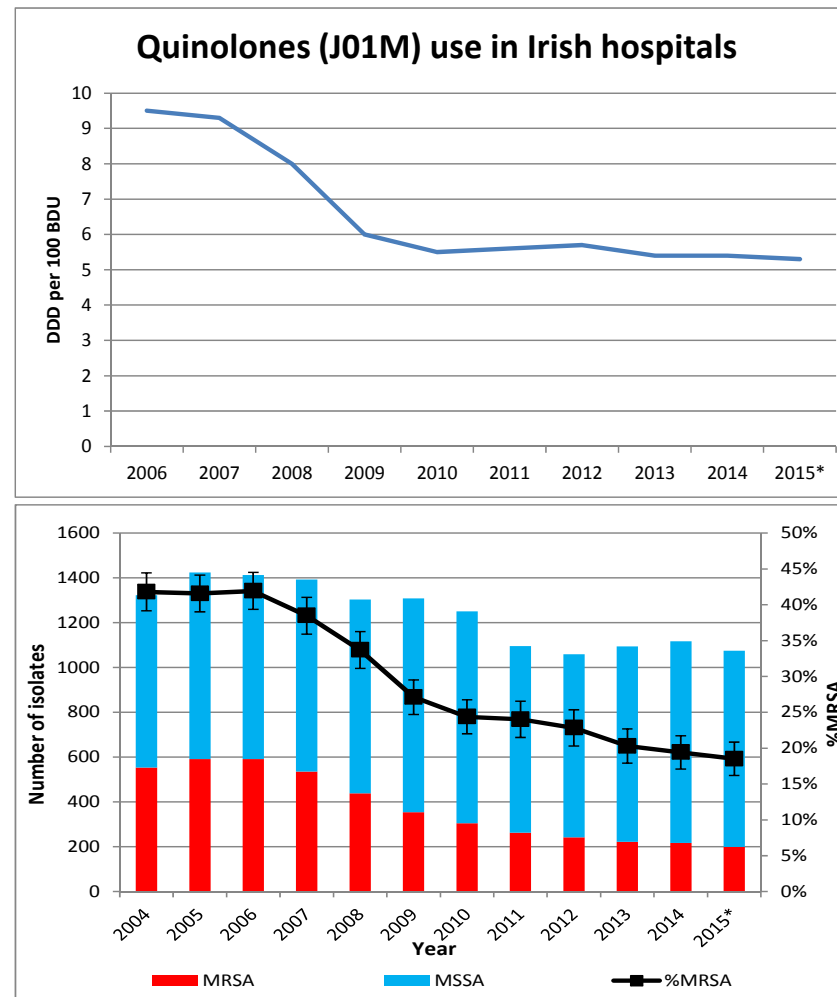


Overall use in hospitals



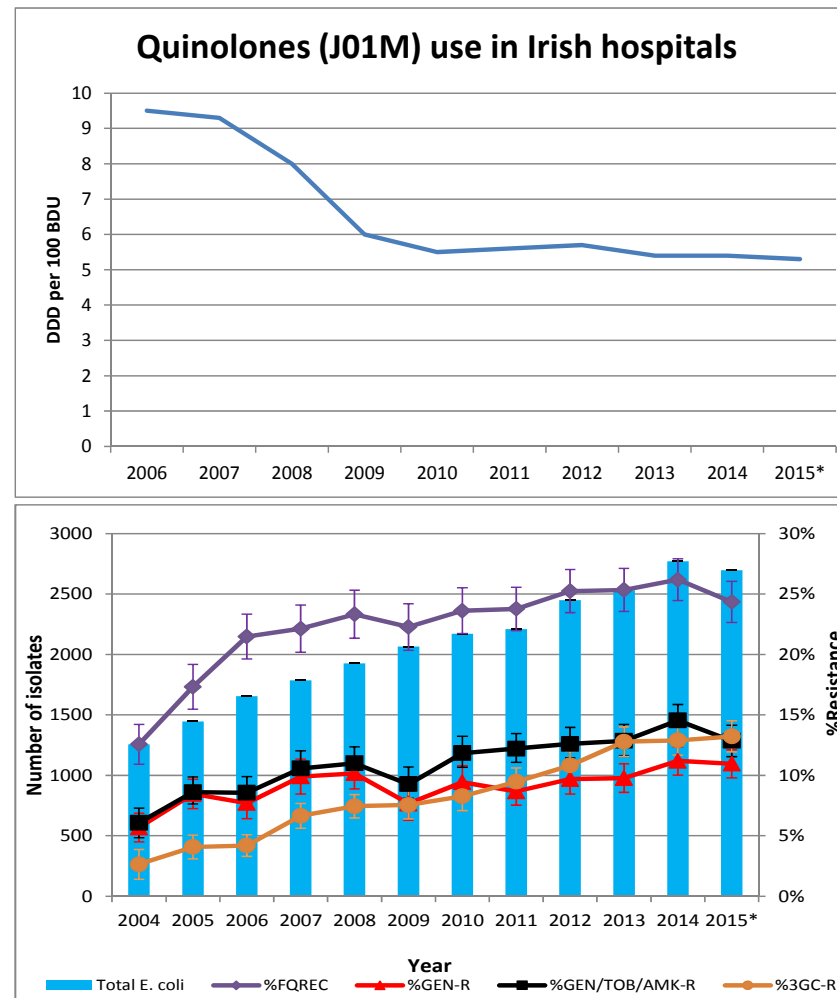
Fluoroquinolone Use & Resistance

- Was the focus of hospital stewardship groups since 2006; particularly switching IV use to oral
- Infection prevention/control team also focused on reduction of catheters
- Guidelines released in re-enforced this
- Perhaps impacted on %MRSA – why?
- What about resistance in *E. coli*?



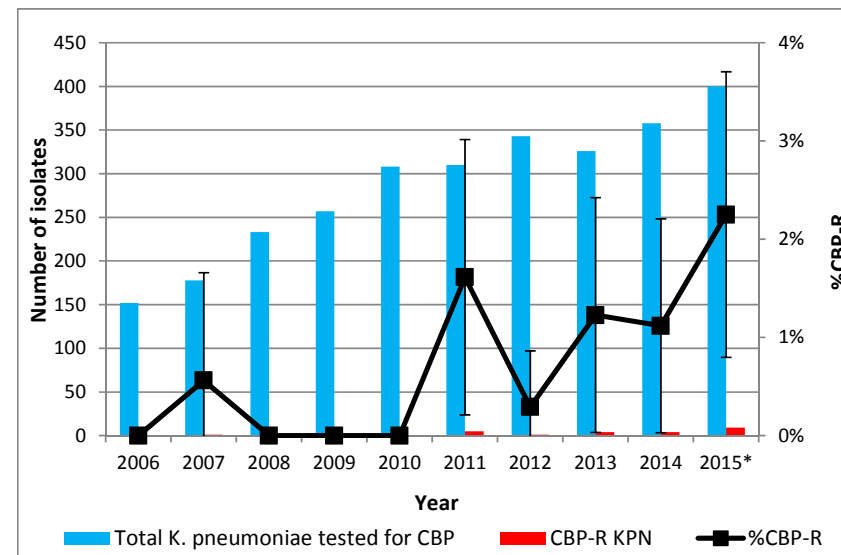
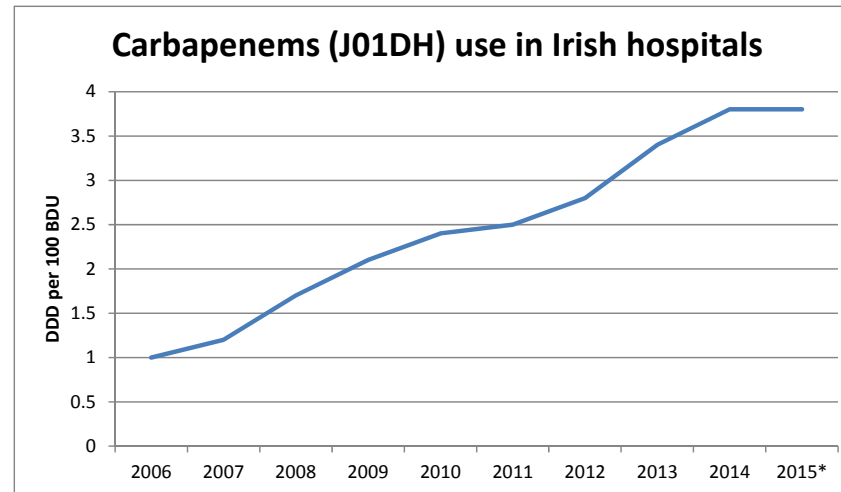
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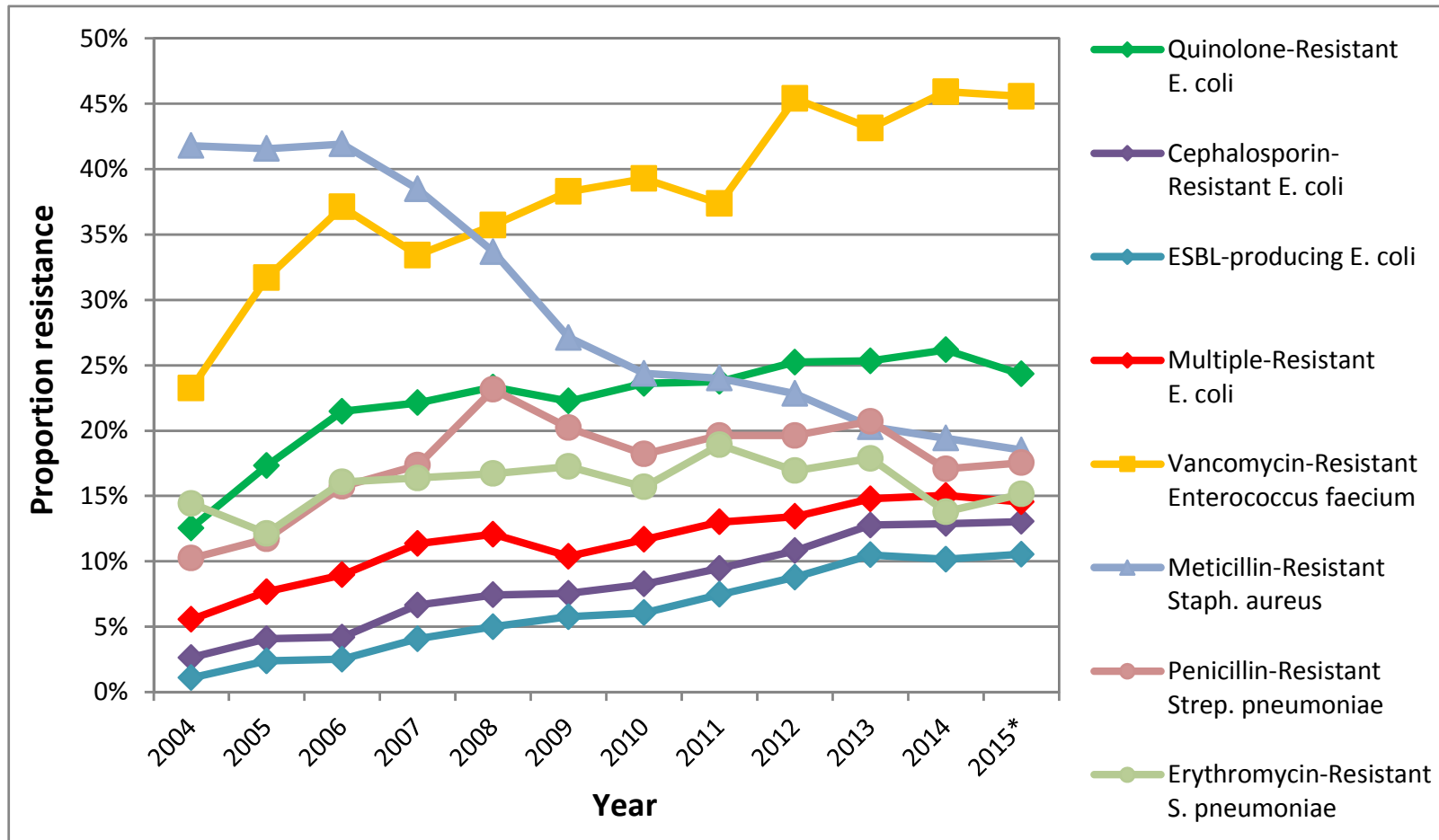


Carbapenemase-producing *Klebsiella pneumoniae*

- Sharp increase carbapenem use
- Carbapenem Resistant Enterobacteriaceae (CRE) global problem
- Numbers of carbapenemase-producing *K. pneumoniae* increasing
- Outbreak control team put in place

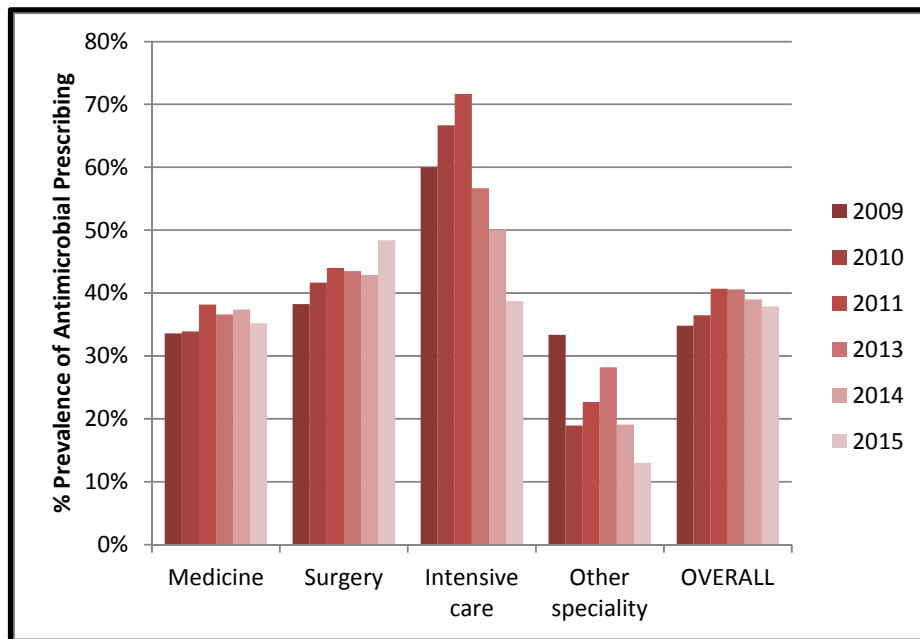


European Antimicrobial Resistance Surveillance Network (EARS-Net)



Point Prevalence Survey (PPS)

- Number of patients on antimicrobial therapy on a given day
 - Ireland median for 2015: 37.8% (n=39 hospitals)
 - EU-Wide PPS (2011-12): 32.7%
 - Global PPS (2015): 31.5% for Europe



Source: HSE-HPSC, Ireland

HB Code	Year				
	2011	2012	2013	2014	2015
ABMU	27.1	27.5	27.1	29.4	24.1
ABV	32.7	29.4	31.0	30.4	25.2
BCU	35.8	36.7	33.7	32.4	31.5
CVU	31.6	32.2	31.7	30.7	29.6
CWT	32.2	34.0	33.0	28.3	31.7
HDD	33.8	28.3	33.7	32.5	31.6
PWT	21.4	20.1	22.1	28.0	20.3
WALES	30.0	31.0	31.1	30.7	28.4

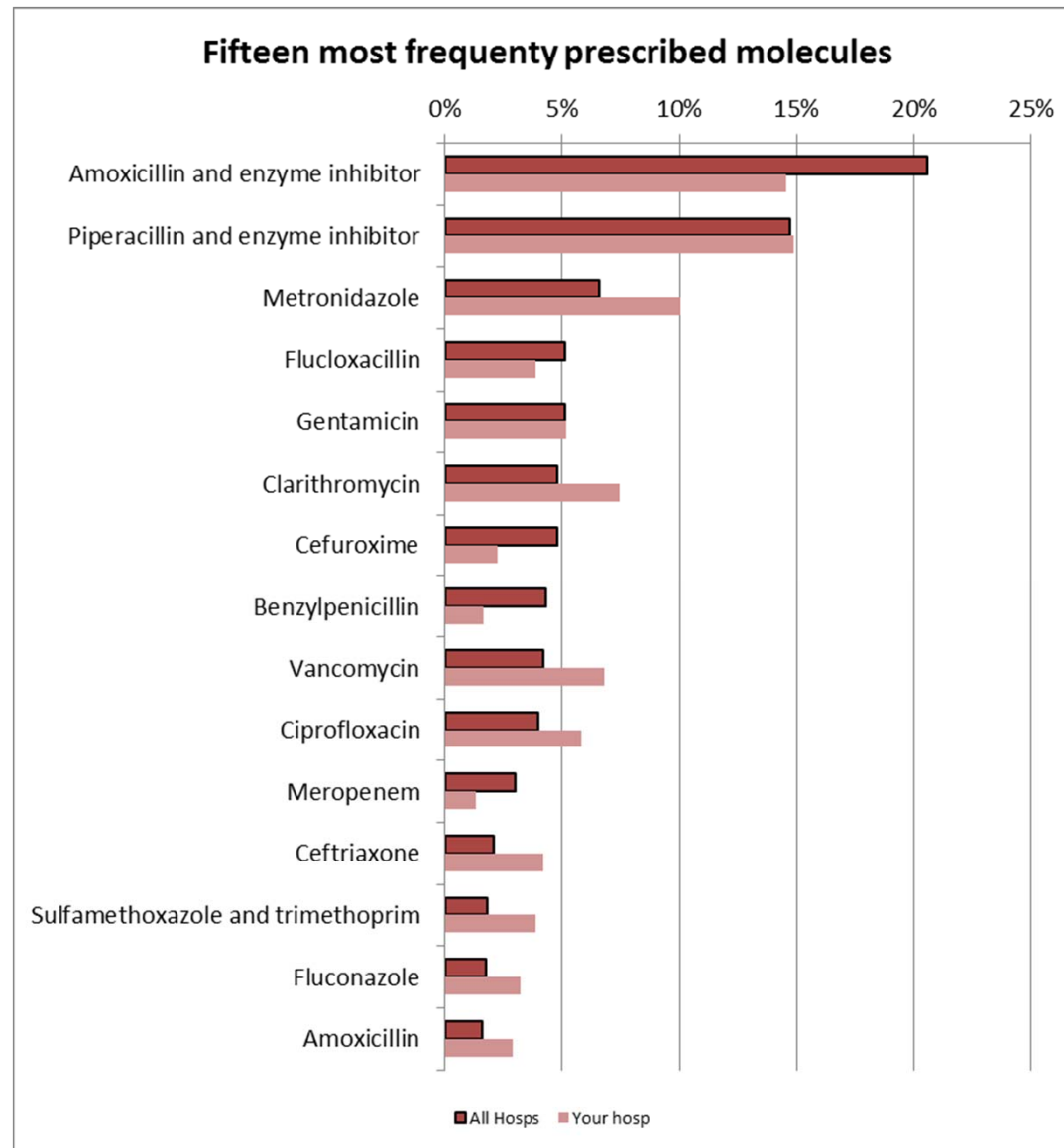
Source: Public Health Wales, by Health Board

PPS 2016, Ireland Findings

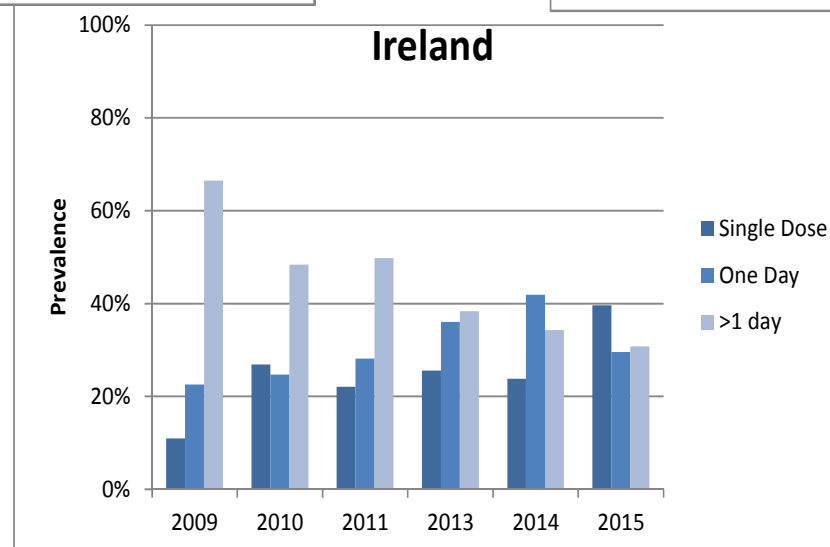
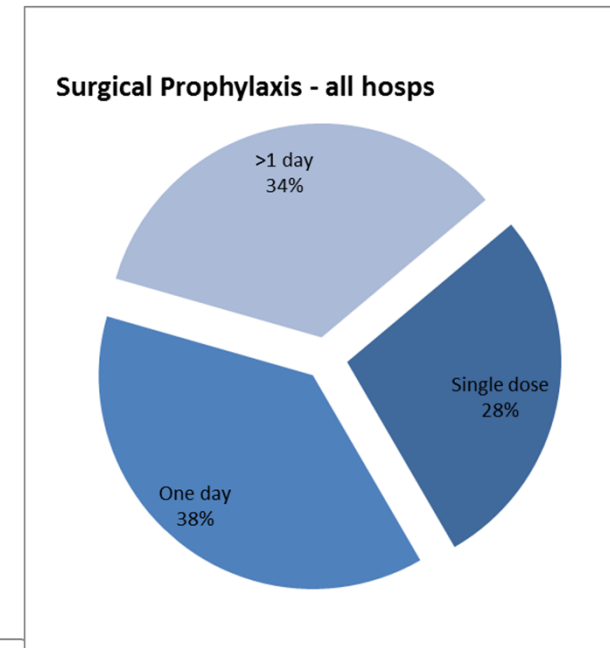
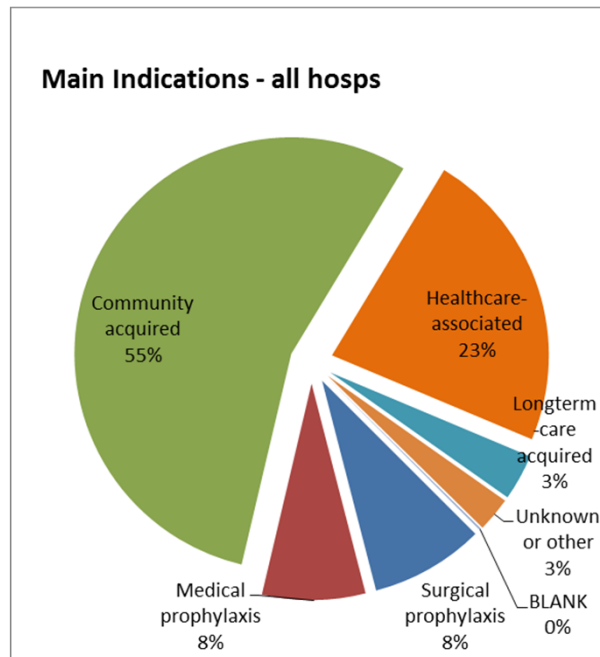
- Number of hospitals participating 41
- Median prevalence: 37.8%
- Median number of antimicrobial therapies per regimen: 1.39
- Median proportion of IV over all therapies: 64.3%

Provisional results for 2016

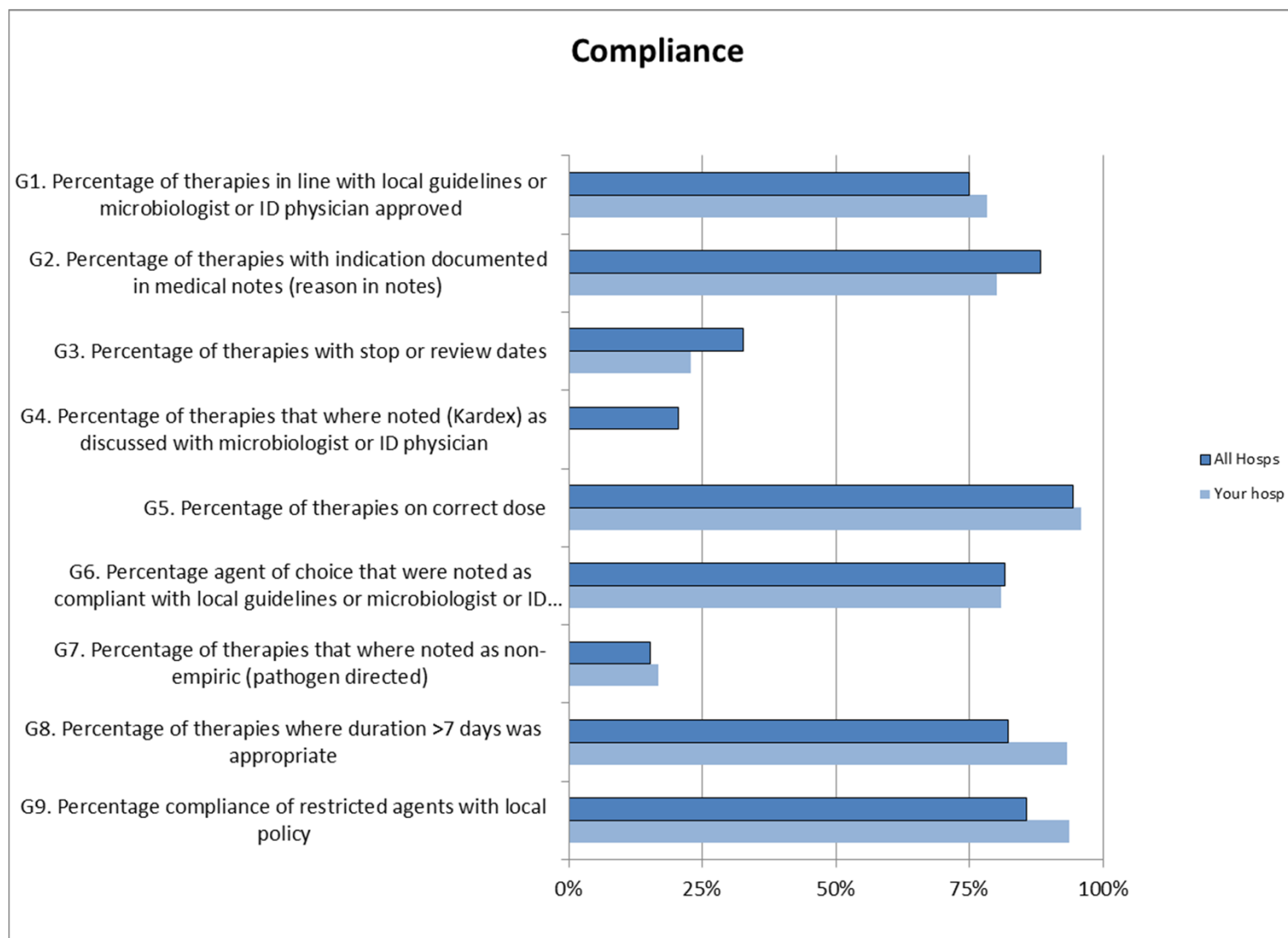
PPS 2016 - Drugs



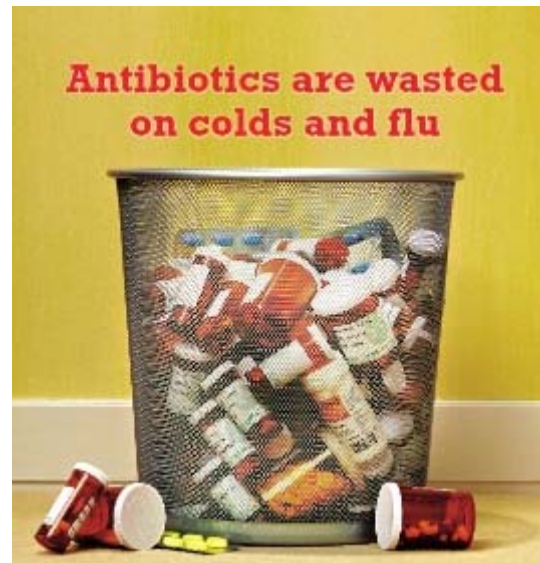
PPS 2016 - Indications



PPS 2016 - Compliance



EAAD



Acknowledgements

- Antimicrobial pharmacists in Ireland
- Infection control teams and microbiology laboratories in hospitals
- Clinical HCAI Programme in Ireland
- Colleagues at HPSC
- ESAC-Net at ECDC

