

# National Annual Antimicrobial Point Prevalence Survey 2015

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## Introduction

Antimicrobial Point Prevalence Surveys (PPS) provide quality information on antimicrobial prescribing practices at a particular point in time. Data can be used to: (i) determine trends in prescribing; (ii) identify areas of prescribing which may benefit from interventions; (iii) compare current results with those from previous years and similar hospital types; and (iv) establish the impact of antimicrobial stewardship programmes (ASPs).

## Aim & Objectives

- ❖ To collate and analyse systemic antimicrobial prescribing data.
- ❖ To identify prescribing trends and practices which may warrant intervention or reflect the impact of existing ASPs.

## Methods

The national annual antimicrobial PPS was carried out in September and October 2015 over a specific time period. Data collection was organised by pharmacy staff via an agreed protocol and data entry form, inputted into excel and analysed by the Health Protection Surveillance Centre (HPSC). One hospital piloted a data entry app. Feedback was then provided to participating hospitals.

## Results

### 1. General

Overall, 39 hospitals participated: 20 public general; 7 public regional/tertiary; and 12 other hospital types. This is an increase of 46% in the number of participating hospitals since the national annual PPS first commenced in 2009. Almost half of the hospitals that participated had an antimicrobial guideline app available locally (49%). The median number of days taken to conduct the PPS was one day (0.5 – 19 days) and the median number of auditors involved in data collection was three (1 – 18 staff members). The pilot app used in one hospital greatly facilitated accuracy of data collection and reduced approximately 10 hours of additional work via eliminating manual data entry into excel.

### 2. Prevalence of antimicrobial prescribing

As illustrated in Figure 1, 8052 patients were reviewed and 2988 were prescribed antimicrobials, a median prevalence of **37.8%**. The median prevalence of antimicrobial use in medicine was 35.2%, surgery 48.4% and intensive care 38.8%. The median prevalence of antimicrobial use from 2009 – 2015 ranged from 34% to 40.6%<sup>1-2</sup>.

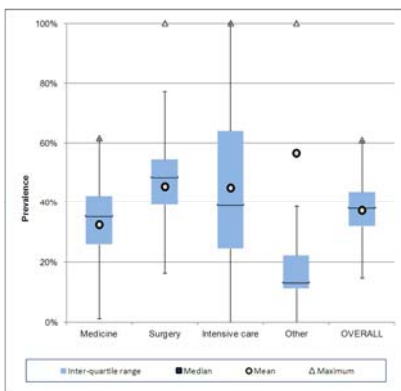


Figure 1: prevalence of antimicrobial prescribing

### 3. Antimicrobial agents prescribed

Co-amoxiclav and piperacillin/tazobactam constituted 33.8% of all antimicrobial agents prescribed in Irish hospitals. Fifteen of the most frequently prescribed antimicrobial agents are illustrated in Figure 2.

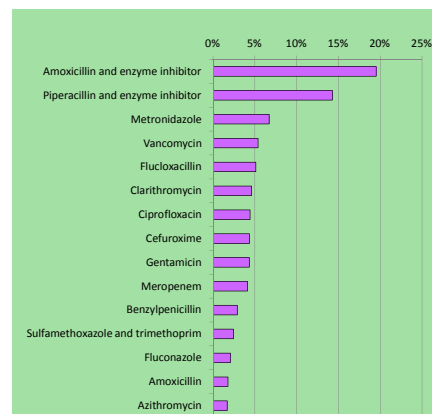


Figure 2: Fifteen of the most commonly prescribed antimicrobial agents

### 4. Parenteral and Oral Therapy

The median percentage of parenteral therapies over all therapies was 63.3% (Figure 3). Overall, 30.7% of parenteral therapies were switched to oral antimicrobials and 10.1% could have been switched to oral equivalents. Antimicrobials with good bioavailability prescribed parenterally equalled 40.1% (ciprofloxacin, clarithromycin, clindamycin, erythromycin, fusidic acid, levofloxacin, linezolid, metronidazole and moxifloxacin).

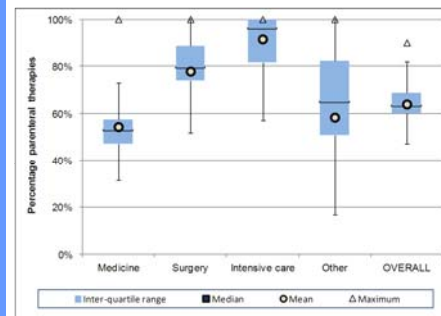


Figure 3: percentage of parenteral therapies

### 5. Indication & diagnosis

The majority of indications for antimicrobial use were community-acquired (Figure 4).

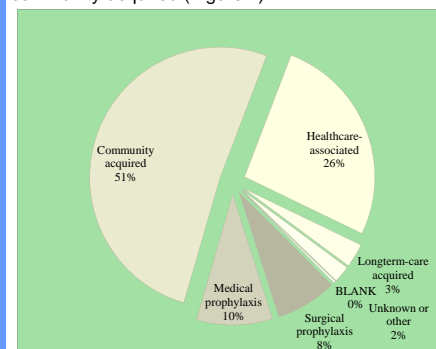


Figure 4: indication for antimicrobial use

Antimicrobials prescribed for surgical prophylaxis accounted for 8% of all prescriptions. Of these, 60% extended beyond 24 hours. Twenty-six percent of antimicrobials were prescribed for health-care associated indications, of which 19% were acquired post-operatively. The most common anatomical site of infection being treated was respiratory, followed by intra-abdominal and skin & soft tissue.

### 6. Appropriateness of antimicrobials prescribed

Overall, 77.9% of antimicrobials were compliant with the local antimicrobial guidelines or microbiologist/ID physician advice specific to: antimicrobial choice; duration; dose; and formulation.

The choice and dose of antimicrobial agents prescribed that were considered compliant were 84.3% and 94.4% respectively. The indication for antimicrobial use was documented for 87.8% of antimicrobial prescriptions, 27.8% had a stop/review date documented, 20.2% of therapies were pathogen directed, 25.5% of cases were discussed with a microbiologist/ID physician and 60.7% of therapies that extended beyond 7 days were deemed appropriate (Figure 5).

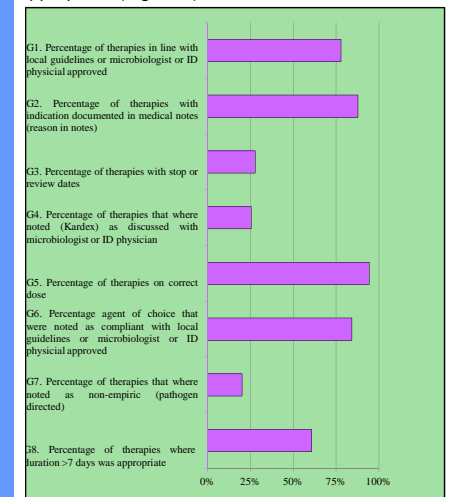


Figure 5: Appropriateness of antimicrobials prescribed

### 7. Allergy status

The allergy status was documented for 90.3% of patients of which 12.9% had a known antimicrobial allergy.

## Summary

Results demonstrate the prevalence of antimicrobial prescribing at 37.8%. Overall findings were similar to previous PPSs, the most frequent antimicrobials prescribed were broad-spectrum penicillins, the most common anatomical site of infection was respiratory and the majority of indications for antimicrobial use were community-acquired. Compliance specific to: antimicrobial choice; duration; dose; and formulation was 77.9%.

## Discussion & Conclusion

The increase in the number of participating hospitals in the 2015 PPS reflects its value in monitoring antimicrobial prescribing patterns and identifying targets for ASPs. Such initiatives warranting further studies may include a review of the extended duration of surgical prophylaxis; methods for reducing health-care associated infections; and interventions for reducing the widespread use of broad-spectrum penicillins. The level of compliance with antimicrobial guidelines/expert advice at a local level is also a parameter that may benefit from more regular audits. With the addition of several new consultant microbiologist and antimicrobial pharmacist posts, implementing and sustaining further ASPs should be achievable.

## References

- Burns K, Foley M, Donlon S. Point Prevalence Survey of Hospital Acquired Infections & Antimicrobial Use in European Acute Care Hospitals: May 2012. Republic of Ireland: National Report.
- Lambert D, Barrett S, Oza A, Philbin M, Cunney R. Results of Irish National Antimicrobial Point Prevalence Studies 2009, 2010 and 2011. Available at [www.hpsc.ie](http://www.hpsc.ie)

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