



**THE USE OF ANTIMICROBIAL AGENTS POLICY**

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Cardiff and Vale University Health Board

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**1. SUMMARY**

- 1.1 Antimicrobials have a central role in the effective treatment of, and prophylaxis against infection. However, antimicrobial use is not without risks.
- 1.2 Antimicrobial resistance is an increasing problem that can result in difficulty in treating infections, leading to failed therapy and potential complications.
- 1.3 Antimicrobial resistance for some of the major pathogens and antimicrobial usage has been increasing progressively in Wales since 2004.
- 1.4 Appropriate antibiotic stewardship demonstrably supports reductions in rates of antimicrobial resistance and healthcare-associated infections.
- 1.5 The appropriate use of antimicrobials is essential to patient safety.
- 1.6 In addition to Commitment to Purpose- Eliminating Preventable Healthcare Associated Infections (HCAIs): A framework of actions for healthcare organisations in Wales” (Welsh Government, December 2011), CAV UHB endorses “Start Smart-then Focus” (Department of Health, November 2011), which supports healthcare providers’ statutory compliance with The Health and Social Care Act 2008 Criterion 9 (Code of Practice on the prevention and control of infections and related guidance). The Department of Health advises that “procedures should be in place to ensure prudent prescribing and antimicrobial stewardship”, reinforced with an ongoing programme of audit, revision, update and education.
- 1.7 This policy aims to provide a structure and appropriate advice to staff to ensure that robust arrangements are in place for the use of antimicrobials at all Health Board locations.
- 1.8 An effective antimicrobial stewardship program, with appropriate drug product selection, dosing, route of administration, and duration of antimicrobial therapy, in conjunction with a comprehensive infection control program has been shown to limit the emergence and transmission of antimicrobial-resistant microorganisms and to reduce HCAs.

## 2. INTRODUCTION

- 2.1 Antimicrobials have a central role in the effective treatment of, and prophylaxis against infection. However, antimicrobial use is not without risks. It can select for the development and spread of resistance and exposes patients to risks such as *C. difficile*-associated diarrhoea.
- 2.2 Infection and antibiotic use are common across the Health Board. Published data for 2011 shows that total antibiotic use (excluding outpatient and A&E) was 1050 DDDs(defined daily doses)/1000 bed days per quartile for University Hospital of Wales (UHW) site and 1037 DDDs/1000 bed days per quartile for University Hospital Llandough (UHL) site.
- 2.3 A point prevalence survey performed in November 2011, for all Wales (acute and non acute sector), found 33.8% of 862 in-patients surveyed on UHW site and 30.7% of 361 in-patients surveyed in UHL site receiving an antibiotic.
- 2.4 Overall, in Wales 8.8% of patients surveyed were being treated for a hospital acquired infection, as deemed by the prescriber, but only 4.0% of patients were considered to have a HAI as defined by the HAI case definitions within the survey.
- 2.5 It has been estimated that up to 30% of antibiotic use in secondary care is “inappropriate”. Optimising antibiotic use should ensure best treatment of infected patients, reduce direct risk to patients from adverse effects (including *C. difficile*-associated diarrhoea), reduce indirect risk to patients from the spread of antibiotic resistance, and provide cost savings.
- 2.6 In Primary Care, published data for 2011 shows total antimicrobial items of 633 items/1000PUs (Prescribing Units) per annum in the area corresponding to the previous Local Health Board (LHB) of the Vale of Glamorgan and total antimicrobial items of 553 items/1000PUs in the area corresponding to the previous Cardiff Local Health Board. This data shows an increase of 6% and 2% respectively compared to 2010 data (LHBs have been used in these reports to allow comparison with previous data collection).
- 2.7 Effective Antimicrobial guidance has been highlighted as important in control of healthcare-associated infections and antimicrobial resistance by the Wales Audit Office and Department of Health, and is promoted within the 1000 Lives Plus Programme.
- 2.8 “Commitment to purpose: eliminating preventable healthcare associated infections (HCAIs): A framework of actions for healthcare organizations in Wales” Document, produced at the end of 2011 by the Welsh Government, states the necessity for a formal antimicrobial

stewardship programme to be in place for every healthcare organization in Wales to optimize antimicrobial usage and prescribing.

- 2.9 Cardiff and Vale University Health Board (CAVUHB) also endorses “Antimicrobial Stewardship: Start Smart then Focus”, a document, produced by the Department of Health in November 2011, which aims to provide outline evidence-based antimicrobial stewardship in the secondary care setting.
- 2.10 Antimicrobial Stewardship Programmes are key components in the reduction of healthcare associated infections (HCAI) and contribute to slowing the development of antimicrobial resistance. A *Start Smart - then Focus* approach is recommended for all antibiotic prescriptions.
- 2.11 This programme will form part of the quality improvement strategy for patient safety, to help reduce inappropriate prescribing and optimise antibiotic use.

### **3. AIMS**

- 3.1 To provide a structure and appropriate advice to staff to ensure that robust arrangements are in place for the use of antimicrobials at all Health Board locations.

### **4. OBJECTIVES**

- 4.1 To provide advice on the appropriate use of antimicrobials.
- 4.2 To provide guidance on the effective and safe use of antimicrobials.
- 4.3 To ensure that arrangements are in place for the monitoring of antimicrobial use in the UHB.

### **5. SCOPE**

- 5.1 Cardiff and Vale University Health Board accepts its responsibility under the Health and Safety at Work Act etc. 1974 and the Control of Substances Hazardous to Health Regulations 2002, to take all reasonable precautions to ensure that effective guidance is in place for the appropriate, effective and safe use of antimicrobials.
- 5.2 In order to make sure that antimicrobials are used appropriately it is recognised that the UHB requires a policy document to provide the necessary direction to UHB staff.

## **6. ROLES AND RESPONSIBILITIES**

- 6.1 The Quality and Safety Committee is responsible for the approval of the UHB Policy for the Use of Antimicrobial Agents 2013.
- 6.2 Divisions and Directorates will be responsible for the implementation of the policy document in clinical areas.
- 6.3 The Antimicrobial Management Group and the antimicrobial Management Team (when instituted) will be responsible for:
- The guidance within the UHB Good Prescribing Guide, the Antimicrobial Guide App and Primary Care Guide.
  - The regular review of antimicrobial guidance
  - Ensuring that antimicrobial guidance is consistent across the UHB
  - Providing advice on formulary content and restrictions
  - A system of communication regarding the approval of use of restricted antimicrobials
  - The setting of a proper and recognized Antimicrobial Stewardship programme
- 6.4 Primary care prescribers will be directly responsible for their own antimicrobial prescribing.
- 6.5 Distribution of the policy will be through the Health Board intranet site and clinical portal. In primary care, the policy will also be distributed by the CAVUHB Prescribing Advisory Team.

## **7. ANTIMICROBIAL GUIDANCE**

- 7.1 Guidance will exist at three broad levels:
- Formulary (for secondary and primary care)
  - Hospital Good Prescribing Guide and Primary Care guidance and Antimicrobial Guidance App for smart phones (reflecting the Hospital Good Prescribing Guidance and Primary Care Guidance)
  - Unit-specific guidelines
- 7.2 Guidance at all levels should be formulated by multi-disciplinary teams, usually to include representatives from microbiology, pharmacy, nursing, clinical services and general practitioners. They should take account of:
- Published evidence

- Published guidelines
- Local antimicrobial resistance levels and patterns
- Local epidemiology of HCAI
- Local patient factors
- Local financial factors

7.3 All guidance must be approved within the University Health Board structure, by the AMT (Antimicrobial Management Team, when formally instituted) or by the AMG (Antimicrobial Management Group). Elements to be included/considered for different types of guidance are described below.

#### 7.3.1 Formulary

The Health Board Antimicrobial formulary will be limited to the minimum number of antimicrobial agents in order to optimally treat infections presenting to the Health Board. Availability of only a limited selection of agents should increase experience with these agents.

Formulary restrictions will be used to control the use of “reserve” (broad-spectrum) or expensive agents. These typically would place drugs in categories as below:

- A freely available across the Health Board
- B freely available within specific units / for specific indications
- C available only with consent of Consultant Microbiologist (or nominee)

Adherence to formulary restrictions should be audited regularly in every Division.

#### 7.3.2 Health Board Good Prescribing Guide

This will provide general advice for the antimicrobial treatment of infections that commonly present to the many different units within the Health Board. The elements covered within this guidance should be:

- Indication
- First Choice Agent
- Dose range
- Duration range
- Alternative agent
- Therapeutic Drug Monitoring (where required)
- Sources of further advice

Guidance at this level will, necessarily, not include details of specialty guidance, but should not conflict with guidance in specialised units. This will be regularly updated and reviewed by the AMG.



The Antimicrobial Guidance App (under development at the time of writing this policy) available for smart phones, will reflect the information available in the Health Board Good Prescribing Guide and Primary Care guidance. It will provide guidance on common infections and safe prescribing of antibiotics. It will be enhanced with tools and hyperlinks to dose calculation, penicillin allergy, etc. It will be updated regularly concomitantly to the other guidelines.

### 7.3.3 Primary Care Guidance

Primary Care guidance will be produced by modifying the Health Protection Agency (HPA) guidance for Primary Care according to local factors. It will provide general simple advice for the empirical antimicrobial treatment of infections that commonly present in primary care. It will promote safe, effective and economic use of antimicrobials and it will minimise the emergence of bacterial resistance in the community.

The elements covered with this guidance will reflect the HPA guidance and will be:

- Indications with sources for further advice
- Comments
- First Choice Agent
- Alternative Agent
- Dose range
- Duration range

This will be regularly updated and reviewed by the AMG/AMT.

### 7.3.4 Directorate/Unit-Specific Guidance

All specialist units must have guidance that deals in detail with the management of infections commonly presenting to specific units within the Health Board. Diagnostic strategies to identify patients requiring antimicrobial therapy should be incorporated within such guidance if possible. The elements covered within this guidance should be:

- Indication
- Diagnostic strategy if possible
- Risk stratification if possible
- First Choice Agent
- Dose
- Duration
- Alternative agent
- Therapeutic Drug Monitoring
- IV/Oral switch guidance
- Sources of further advice

Guidance at this level should, where possible, be detailed and specific regarding issues such as dose and duration of therapy. Record of their date of issue should be kept and regular update and review should be done by the specialist unit releasing it. The AMG/AMT will be reviewing all new updates and review.

## **8. ANTIMICROBIAL PRESCRIBING**

8.1 Antimicrobial prescribing in secondary care should follow the recommendations for safe prescribing as described in the “Start Smart then Focus”, document, produced by the Department of Health in November 2011.

8.1.1 In the drug chart the prescriber will need to specify: indication, route and duration or review date (when available either an antimicrobial sticker or antimicrobial chart should be used). Empirical regimes, started using the clinical local guidance available, will need review at 48 hours or when microbiological evidence is available. Intravenous antimicrobials will need daily review to determine the possibility of changing route (switch to oral/use Outpatient Parenteral Antimicrobial Therapy (OPAT)). See Appendix 1.

8.1.2 Antimicrobial surgical prophylaxis should be used for the time determined in the local guidance (generally one dose, maximum 24 hrs or as per recommendations in the local guidance). See Appendix 2.

8.1.3 When therapeutic drug monitoring will be needed this should be specified in the drug chart and carefully managed.

8.2 Primary care prescribers will adhere, when possible, with the Primary Care Guidance.

## **9. RESOURCES**

9.1 The necessary resources are already in place and the implementation of this policy will not entail additional expenditure.

## **10. TRAINING**

10.1 It is not envisaged that any additional formal training will be required as a result of the development of this policy. However, both in primary and secondary care, training of new prescribers on antimicrobial stewardship should continue/be provided at induction for new medical staff and dental staff and should be made available to other NHS workers involved in prescribing, administering and monitoring antimicrobials. The Antimicrobial Management Team, when formally instituted, would make further recommendations on the best ways to improve and implement training programmes on antimicrobial stewardship.

- 10.2 All new prescribers should be made aware of local guidance and the importance of appropriate antibiotic use.

## **11. IMPLEMENTATION**

- 11.1 This policy will be available on the UHB intranet site and clinical portal.
- 11.2 Individual Directorates will be responsible for the implementation of the policy in clinical areas.
- 11.3 Individual Practices will endorse the policy and will ensure adherence to it.
- 11.4 The development of a formalized Antimicrobial Stewardship Programme by the Antimicrobial Management Team (when formally instituted), formed by a recognized team of experts and a lead antimicrobial pharmacist, will further support the implementation of this policy and the adherence to it, both in Primary and Secondary care.

## **12. FURTHER INFORMATION**

- 12.1 The issues of antimicrobial use in secondary care, its appropriateness and how it can be improved are discussed in the Cochrane report, “Davey P, Brown E, Fenelon L, Finch R, Gould I, Hartman G, Holmes A, Ramsay C, Taylor E, Wilcox M, Wiffen P. Interventions to improve antibiotic prescribing practices for hospital inpatients. *Cochrane Database of Systematic Reviews* 2005, Issue 4. Art. No.:CD003543. DOI: 10.1002/14651858.CD003543.pub2.”
- 12.2 The Welsh Audit Office report “Minimising Healthcare Associated Infections in NHS Trusts in Wales” published in 2007 suggests that “Prescribing practice is an important element of infection prevention and control, and there is scope to develop better antimicrobial policies, improve processes and provide better feedback on antimicrobial prescribing practices.”
- 12.3 The Council of the European Union recommendation on the prudent use of antimicrobial agents in human medicine (2002/77/EC) recommended “development of evidence-based principles and guidelines on good practice for the management of communicable diseases, to maintain the effectiveness of antimicrobial agents. These practices should include:
- assessing the value of clinical and microbiological criteria for diagnosis of infections
  - optimising choice of drug, dosage and duration for the treatment and prevention of infections.

- 12.4 The DH advice on *C. difficile* “*Clostridium difficile* infection: How to deal with the problem” (2009) makes a number of recommendations regarding antimicrobial stewardship including: Restrictive antibiotic guidelines should be developed by trusts, through the Antimicrobial Group

Guidelines should:

- name specific antibiotics for specific infections;
- give guidance on therapeutic courses of antibiotic dosage, duration, automatic stop dates and dates for iv–oral switch
- minimise poly-pharmacy;
- include surgical prophylaxis
- be regularly reviewed;

- 12.5 The 1000 lives “Reducing Healthcare-associated infections” documentation makes a number of recommendations for antimicrobial stewardship including: All Trusts should have antimicrobial usage guidance based on published evidence and local antimicrobial susceptibility data. Local ward/unit/directorate guidance should include information on diagnostic strategies for infection, risk stratification, appropriate agents, dose and duration for specific infections

- 12.6 The 1000 Lives Plus Programme (2010) “Reducing Healthcare-associated infections” document, makes a number of recommendations to deliver improvements in antimicrobial use in the acute settings: All units should have detailed guidance for the management of commonly encountered infections, with all prescriptions specifying the planned duration of therapy, the indication for treatment and the revision of antimicrobial prescription after significant results are obtained.

- 12.7 The “Commitment to Purpose: eliminating preventable healthcare associated infections (HCAIs). A framework of actions for healthcare organization in Wales (2011)” makes a number of recommendations for healthcare organizations in Wales, including: All healthcare organization have to ensure suitable and sustainable antimicrobial stewardship programmes being in place for 2012 and beyond to support the change in culture necessary to eliminate preventable HCAIs

- 12.8 “Antimicrobial Stewardship: Start smart then focus” document released by the ARHAI Antimicrobial Stewardship Subgroup of DH, in November 2011, emphasises the necessity of having procedures in place to ensure prudent prescribing and antimicrobial stewardship (see also Appendix 1 and 2).

Start smart is:

- Do not start antibiotics in the absence of clinical evidence of bacterial infection
- If there is evidence/suspicion of bacterial infection, use local guidelines to initiate prompt effective antibiotic treatment
- Document on drug chart and in medical notes: clinical indication, duration or review date, route and dose
- Obtain cultures first
- Prescribe single dose antibiotics for surgical prophylaxis; where antibiotics have been shown to be effective

Then Focus is:

- Review the clinical diagnosis and the continuing need for antibiotics by 48 hours and make a clear plan of action - the “Antimicrobial Prescribing Decision”
- The five Antimicrobial Prescribing Decision options are: Stop, Switch IV to Oral, Change, Continue and Outpatient Parenteral Antibiotic Therapy (OPAT).
- It is essential that the review and subsequent decision is clearly documented in the medical notes.

### **13. EQUALITY IMPACT ASSESSMENT**

13.1 Cardiff and Vale UHB is committed to ensuring that, as far as is reasonably practicable, the way we provide services to the public and the way we treat our staff, patients and others reflects their individual needs and that we will not discriminate, harass or victimise individuals or groups unfairly on the basis of sex, pregnancy and maternity, gender reassignment, disability, race, age, sexual orientation, disfigurement, religion and belief, family circumstances including marriage and civil partnership. These principles run throughout our work and are reflected in our core values, our staff employment policies, our service delivery standards and our Strategic Equality Plan and Equality Objectives. We believe that all staff should have fair and equal access to training as highlighted in both the Equality Act 2010 and the 1999 Human Rights Act. The responsibility for implementing the Plan falls to all employees and UHB Board members, volunteers, agents or contractors delivering services or undertaking work on behalf of the UHB.

We have undertaken an Equality Impact Assessment and received feedback on this policy and the way it operates. We wanted to know of any possible or actual impact that this policy may have on any groups in respect of their sex, maternity and pregnancy, marriage or civil partnership issues, race, disability, sexual orientation, Welsh language, religion or belief, transgender, age or other protected characteristics. The assessment found that there was little impact to the equality groups mentioned in the area of Welsh language. Where appropriate we will make plans for the necessary actions required to minimise any

stated impact to ensure that we meet our responsibilities under the equalities and human rights legislation.

#### 14. AUDIT

14.1 The usage of antibiotics will be monitored by the Antimicrobial Management Team, when instituted, or the Antimicrobial Management Group using data from the PHW Antimicrobial Resistance Programme, supplemented by Point Prevalence surveys and with a comprehensive programme of audits to provide assurance that antimicrobial prescribing and usage policies and procedures are being implemented and adhered to.

14.2 In Primary Care, mechanisms are already in place to audit prescribing. If necessary these can be specifically tailored to monitor adherence to the policy. Formal Meetings with Lead prescribers as well, are already in place to provide feedback on audit results.

#### 15. REVIEW

15.1 This policy will be reviewed every 3 years or sooner should any developments or changes in practice inform the Health Board otherwise.

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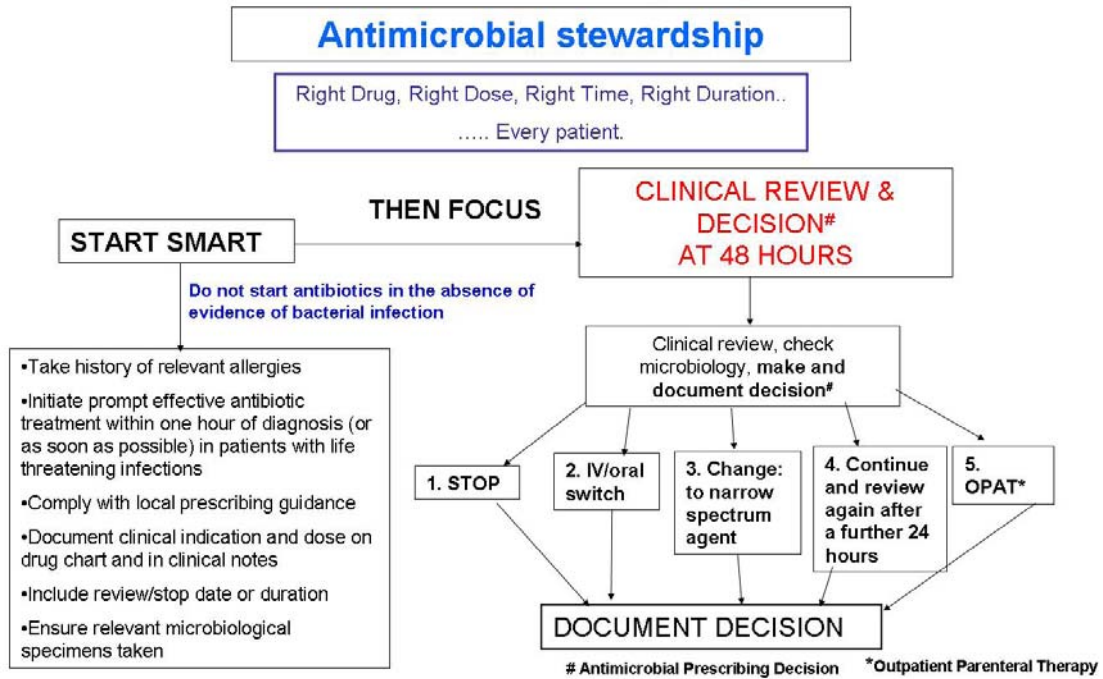
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17. APPENDIXES

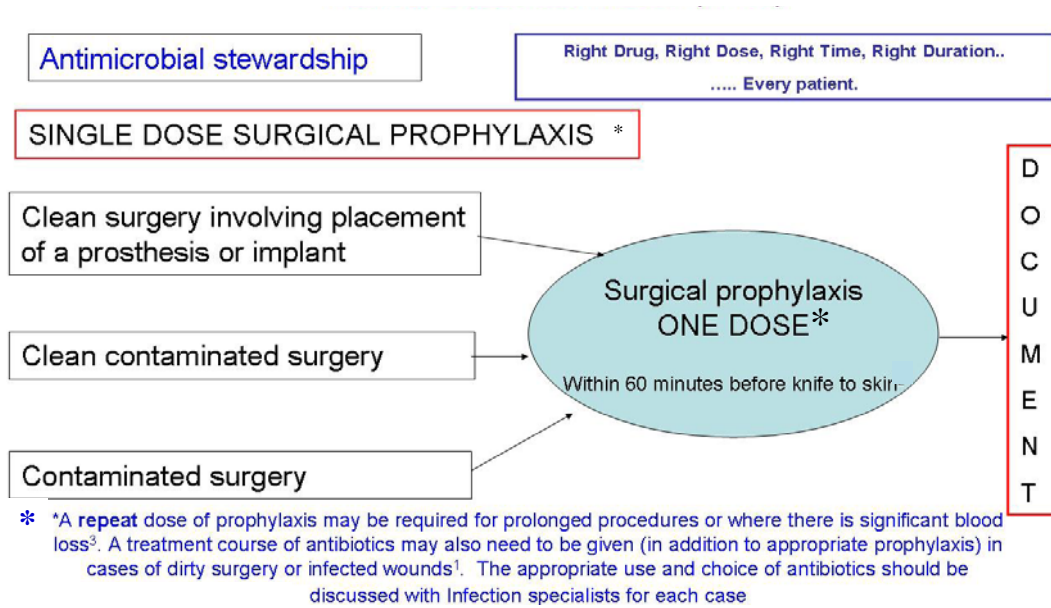
Appendix 1. Antimicrobial Stewardship (AMS) – treatment algorithm in secondary care



Modified from Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI ): Antimicrobial Stewardship Guidance 18.11.11 Page 13



**Appendix 2: Antimicrobial Stewardship (AMS) – surgical prophylaxis in secondary care algorithm**



**Always consult your local guidance for specific surgical procedures in which longer courses of prophylaxis might have been agreed.**

Modified and adapted from Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI ): Antimicrobial Stewardship Guidance 18.11.11 Page 14