The use and management of antibiotics: Antibiotic Management group

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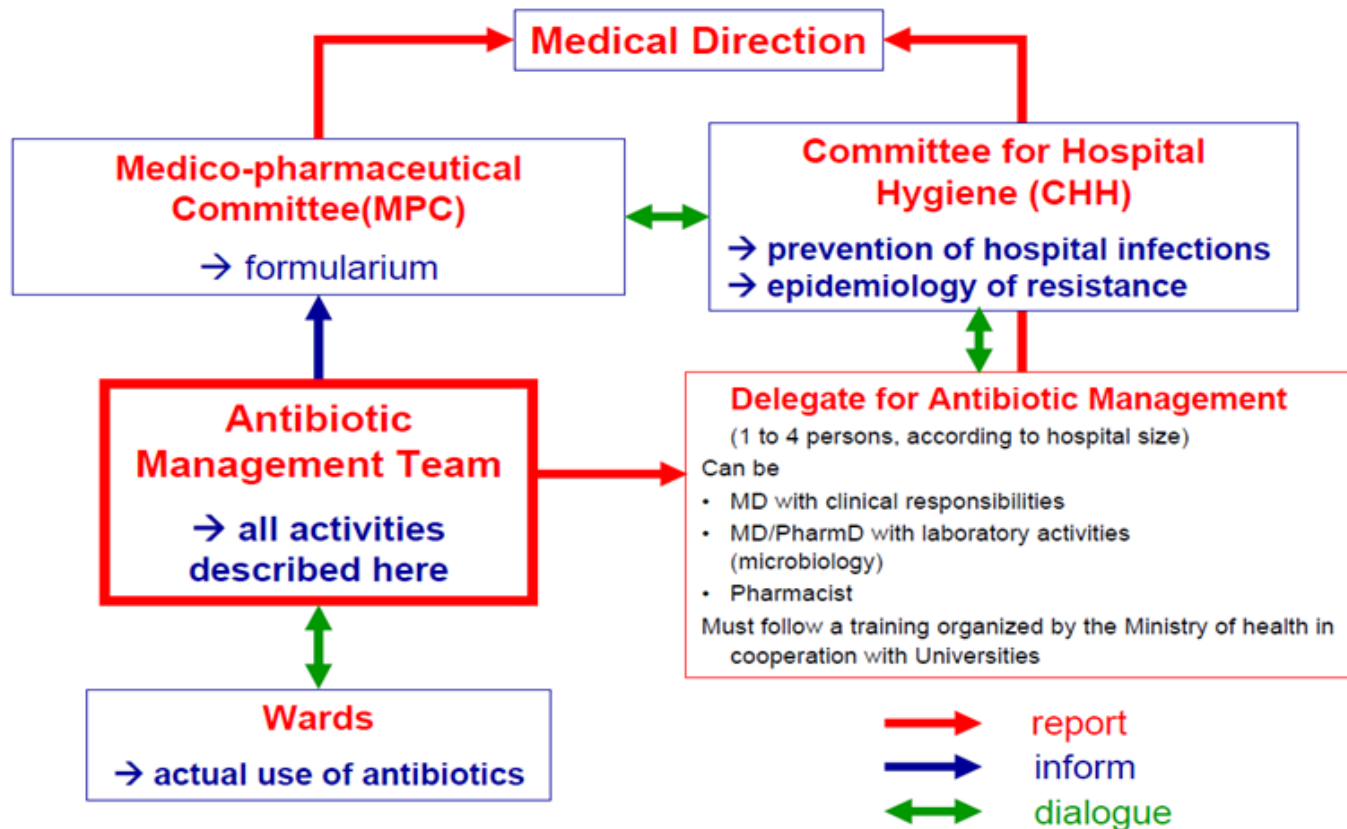Laboratory of microbiology, ULB-Hôpital Erasme, Belgium

Antibiotic Management Group (AMG)

▸ **Multidisciplinary team**

  ▸ Hygienist, microbiologist, pharmacist, clinical pharmacist, infectious diseases specialist, clinicians from the major disciplines
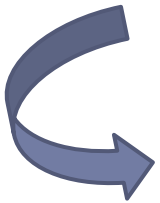
Infectious disease MD

Clinical pharmacist

Microbiologist

Pharmacist

MD from departments using AB

Hygienist
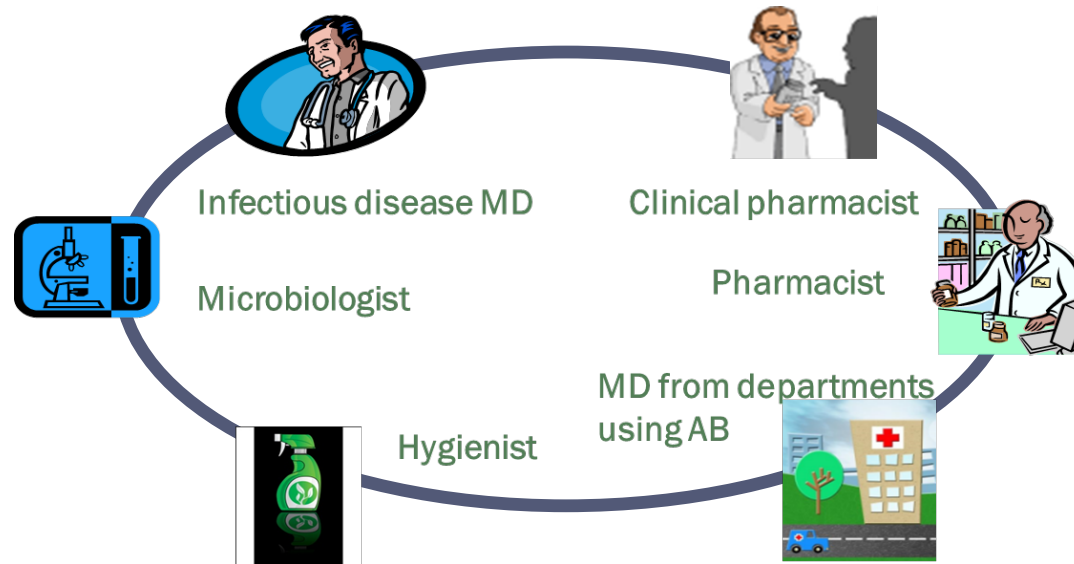
Position within the hospital organigram

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Antibiotic Management Group (AMG)

▸ **Goal**

  ▸ Optimization of antimicrobial prescribing/use

  ▸ Control of resistant microorganisms

> ☐ **Improve patient outcome and safety**
> ☐ **Redue resistance and healthcare costs**

Factors that may increase antimicrobial resistance in hospitals.

Greater severity of illness of hospitalized patients
More severely immunocompromised patients
Newer devices and procedures in use
Increased introduction of resistant organisms from the community
Ineffective infection control and isolation practices and compliance
Increased use of antimicrobial prophylaxis
Increased empiric polymicrobial antimicrobial therapy
High antimicrobial usage per geographic area per unit time

NOTE. Modified from McGowan JE Jr.

You can act upon these parameters by a rational policy of use !

Shlaes et al. Infect Control Hosp Epidemiol. 1997 Apr;18(4):275-91

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Antibiotic Management Group (AMG)

‣ **Priority tasks**

  ‣ Organize **continue education** of medical and nursing staff regarding infectious diseases and control of antimicrobial resistance

  ‣ Develop a process of **continuous improvement of the quality of anti-infective therapy**

    →Evaluation of the appropriate use of antibiotics by reference to local, national and international guidelines (evidence-based practice guidelines)
    →Providing advice about antibiotic use
    →Limitation and control of antibiotic usage

  ‣ Monitor the local **consumption of antimicrobials**

  ‣ Monitor the local surveillance **resistance**
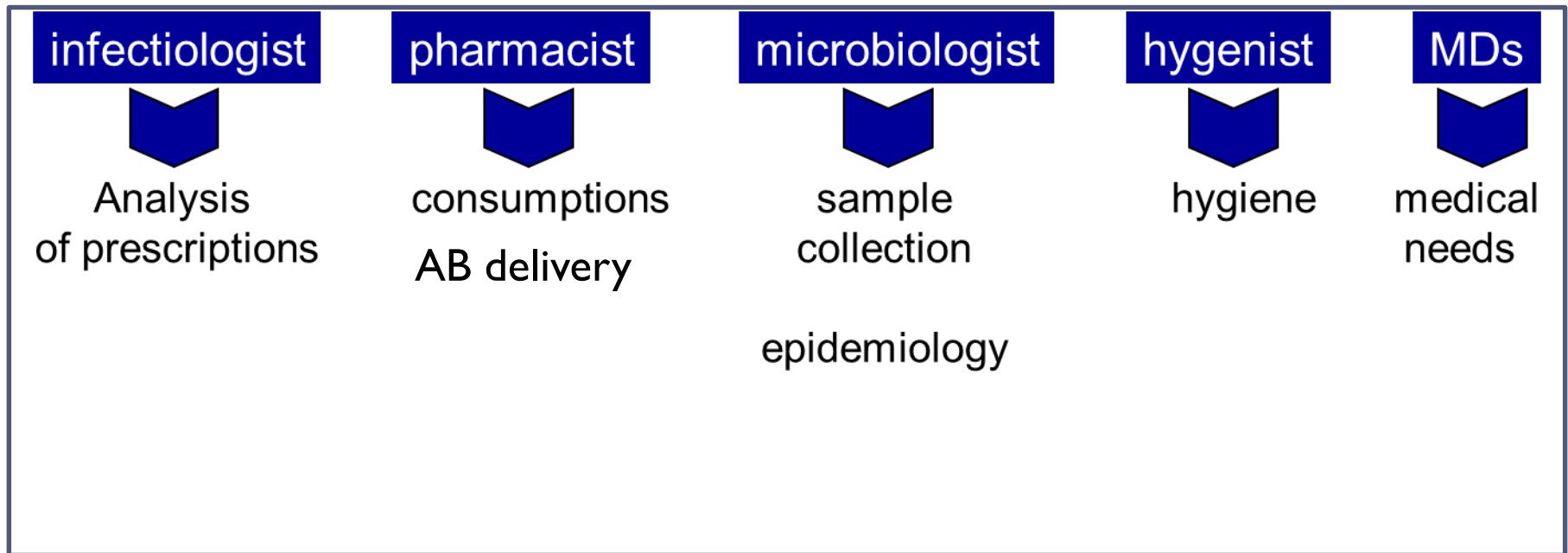
How to set up an antibiotic management group ?

1. Clearly establish the **main goals** of the working group
   - → improve antibiotic usage (efficacy AND security)
   - → reduce the cost without altering quality of care

2. Convince the **medical direction** of the need
   - → self-supported by cost savings and improving of quality of care

3. Examine the **local situation**
   - → number and type of beds
   - → number and type of hospital stays
   - → type of activities (surgery, ICU, oncology, …)
   - → the local epidemiology

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10/11/2014

How to set up an antibiotic policy control group ?

4. Determine human resources that are needed and available
→ Bring discipline together to improve collaboration

5. Establish a working plan
→ Define priorities
→ Identify effective interventions
→ Identify key measurements for improvement

How to structure the group ?

▸ **Expertises that are needed**

infectiologist	pharmacist	microbiologist	hygenist	MDs
Analysis of prescriptions	consumptions	sample collection	hygiene	medical needs
	AB delivery	epidemiology		

Infectiologist

- Intervention on specific request/according the samples
  - Optimization of
    - treatment indication
    - dosage
    - selection of molecules
    - therapeutic deescalation,
    - treatment duration

- Infectious disease round in specific units (chirurgical unit, neurology…)

- Repeated contact with the prescriber and the microbiologist

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Pharmacist

▸ Consumption data

▸ Detailed evaluation of specific antibiotics (carbapenems, fluoroquinolones…)

▸ Table to improve antibiotic use (dose, compatibilities and storage, interaction…)

▸ Analysis of prescriptions - dispensation

▸ Quality and compliance of the prescription

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Microbiogist
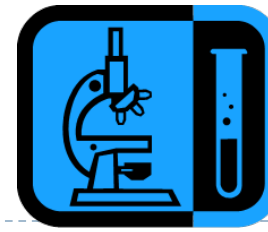
▸ Modalities of sample collection (why, when, how,)

▸ Data interpretation (criteria used, colonization vs infection, sample quality)

▸ Testing (antibiograms vs MIC, which AB to test?)

▸ Epidemiology (how often? Which type of sample?)

▸ Detecting asymptomatic MDR carrier (give alert)

▸ Use of rapid diagnostic tests for MRSA, VRE, BLSE, carbapenemase detection

▸ Epidemiological monitoring (resistance surveillance)

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Hygienist

- Guidelines for isolation precautions (strict isolation, contact isolation, respiratory isolation…)

- Promote hand hygiene

- Carrier decolonization

- Control of patient environment

- Healthcare equipment decontamination

- Control and stop epidemic

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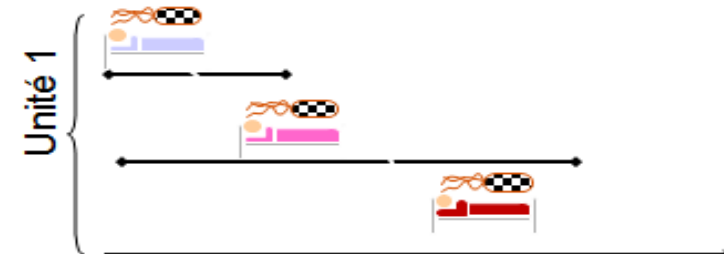
How should this group act in practice ?

➢ Face-to-face intervention

- Prospective and direct interaction between the prescriptor and the infectiologist/clinical pharmacist and feed-back
- Des-escalation (if empirical treatment) based on lab data
- Dose adaptation
- IV-Oral switch

Reduce inappropriate AB use

Optimize AB use

How should this group act in practice ?

➢ Edit local guidelines

▸ Formulary

- List of drugs available in the hospital
- List of « reserved » antibiotics (broad spectrum) with specific modalities of use

▸ Antibiotic guide

▸ Clinical practice (antibiotic) guidelines for infectious diseases
- Empirical therapy
- Streamlining empirical therapy
- Right dose (impact of PK/PD) and route
- Therapy duration
- Prophylaxis
▸ Based on local epidemiology

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How should this group act in practice ?

➢ Restrictive method

▸ Restrictive list of AB: prescription allowed after approval of the infectious diseases specialist

▸ Automatic stop order processing

▸ Delivery of limited amount of AB for a standard duration of treatment

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How should this group act in practice ?

➢ Education and feedback on antimicrobial use and patients outcomes

▸ Analysis and feed back of the data (Resistance and consumption)

▸ Evaluation

  ▸ Compliance to guidelines

  ▸ Reason for non-observance

  ▸ Propose new measures for improvement