Department of Health

SPECIALIST ADVISORY COMMITTEE ON ANTIMICROBIAL RESISTANCE

3rd Meeting of the
Specialist Advisory Committee on Antimicrobial Resistance (SACAR)
in collaboration with
British Society for Antimicrobial Chemotherapy (BSAC),
United Kingdom Clinical Pharmacists Association (UKCPA),
and the
Alliance for the Prudent Use of Antibiotics UK (APUA UK)

'RESISTANCE TO CHANGE'

strategies to improve antimicrobial use

Friday 27 October 2006

programme & available abstracts

Seligman Theatre, Royal College of Physicians
St Andrews Place, Regents Park, London

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PROGRAMME

09.15 REGISTRATION & COFFEE

10.00 **Welcome address**

10.05 **Hospital Pharmacy Initiative: Review of achievements and where to now?**
Hayley Wickens, St Mary's Hospital, London

10.20 **STAR PAPER**
Improving quality indicators for hospital antibiotic prescribing: using simple data and easy tools
Faranak Ansari, University of Dundee

10.35 **What does the public need to know about antibiotics? The Omnibus Project**
Cliodna McNulty, Health Protection Agency, Gloucester

10.50 **Collaboration between community pharmacists and general practitioners to reduce unnecessary antibiotics for URTI: the PCAPS trial**
James McElnay, Belfast City Hospital

11.05 **Discussion**

11.20 COFFEE & POSTER VIEWING

11.50 **KEYNOTE PRESENTATION**
What can the European Surveillance on Antimicrobial Consumption (ESAC) tell us about prescribing in the UK and how to improve it?
Herman Goossens, University Hospital Antwerp, Belgium

12.20 **Discussion**

12.30 LUNCH

13.15 **The Healthcare Commission's approach to monitoring antimicrobial prescribing**
Julia Sonander, Healthcare Commission, London

13.45 **The ECDC's approach to monitoring antimicrobial resistance in Europe**
Peet Tull, European Public Health Alliance, Belgium

14.15 **Discussion**

14.30 **PLENARY DISCUSSION**
Quality Indicators: data for judgement or data for improvement?

15.30 **Feedback**

16.00 CLOSING REMARKS

Improving quality indicators for hospital antibiotic prescribing: using simple data and easy tools

Ansari F, Scahill L, Nathwani D, Davey PG
Health Informatics Centre, University of Dundee & NHS Tayside Acute Services Division Anti-infective Sub-committee

Background - Define the minimum dataset requirements and standard procedures for collecting information and develop performance indicators to assess quality of hospital antimicrobial prescribing are among recommendations of the Scottish Executive in 2005. Tayside could produce a model of quality improvement in antibiotic prescribing. Increasing concerns about antibiotic resistance and public health consequences need to be addressed by continuous programmes using valid and common quality indicators. The study aimed to develop and validate indicators of antibiotic use, and to produce a set of core indicators.

Objectives - The effect of different denominators on longitudinal analysis of hospital antibiotic use. The relationship between the DDD calculated from total antibiotic use and actual prescribing data.

Methods - The study consisted of *1)* 6-year Longitudinal Study (LS) from 2000 and *2)* two Point Prevalence Surveys (PPS) in 2003 and 2006. In LS, pharmacy data on antibacterials dispensed to Tayside University Hospitals in DDD used as numerator and bed days and admissions as denominators. In PPS, we used GAAT (2003) and STRAMA (the Swedish tool) in 2006.

Results - Two LS datasets show significant increasing trends. In PPS, treated inpatients were 26% in 2003 and 28% in 2006. Average use of antibacterials with dispensing data was nearly 2 times higher than data derived form STRAMA PPS tool when both measured in DDD/100 bed days. More results will be discussed.

Discussion & Conclusion - Similar trends using two denominators in LS is different from a previous study in a set of Dutch hospitals. Antibiotic use when measured with different denominators could represent resource indicators and provide a more accurate picture of antibiotic use. A striking point, difference in dispensing and audit data, was impossible to find without using similar unit the DDD. The inclusion of prescription at discharge might be one factor which implies non hospital antibiotic use being accounted into inpatient use. Further studies and continuous quality measurement are needed to address this issue. Quality indicators are screening tools to identify potential areas of concern in the quality of clinical care. Administrative data cannot provide definitive measures, but they can provide indicators of prescribing quality and resource use. These data together with patient specific easy audit tools can provide a more reliable set of indicators in drug use.

A multidisciplinary Antibiotic Review Round: results of the pilot phase for a new service at Hammersmith Hospitals NHS Trust

Gilchrist M, Lawson W, Newsholme W
Hammersmith Hospitals NHS Trust, DuCane Road, London

Background - Following the initiatives of the Special Advisory Committee on Antimicrobial Resistance (SACAR) prescribing subgroup, and a successful business case for a new Infectious Diseases Consultant, a cross-site antibiotic review service has been developed at Hammersmith Hospitals NHS Trust (comprising four hospitals on three sites). This is jointly run by Pharmacy and Infectious Diseases with the objectives of optimising anti-infective therapy, supporting the education of prescribers and pharmacists, and reducing the incidence of resistant organisms and *C. difficile* infection by the effective use of antimicrobials.

Methods - Referral criteria were drawn up enabling ward pharmacists to identify patients with antimicrobial issues during the course of daily ward visits. Patients could be referred for more than one indication. Referrals were collated and reviewed by an Infectious Diseases Consultant on a dedicated weekly ward round with the pharmacists. The referral tool was piloted in June 2006 within one speciality at one site, and extended to a limited number of wards on two sites for July and August 2006. Antibiotic advice was documented in patient notes, on the referral proforma, and fed-back verbally to clinical staff and the ward pharmacist.

Results - During the three-month period a total of 41 patients were referred, 31 from site one and 10 from site two. There were 26 referrals from surgical and 15 from medical specialities, all referrals fulfilling the agreed criteria. Twenty-two patients were referred for antimicrobial regimen reviews, 9 for prolonged courses, 5 for inappropriate prophylaxis, 4 for parenteral to oral switches, 3 for *C difficile* management, 3 for failing antimicrobial regimens and 2 for antimicrobial side-effects or drug interactions. Antibiotic advice was accepted in 35/41 (85%) of referrals. Average follow-up was 11 days, with 2 (4.8%) patients developing new infection problems during follow-up. Further data will be presented.

Conclusions - The pilot period has demonstrated the role, effectiveness and acceptability of the service, which is now being extended to other specialities within the Trust. It is intended to streamline the service using on-line referrals. Audit tools have been introduced to assess the impact on ward pharmacy activity, *C difficile* and MRSA management, and Directorate-level feedback to clinicians is underway.

The Effective Use of Prescribing Databases: Reporting Antimicrobial Prescribing Indicators

MacBride-Stewart S, Hems S, Bennie M
National Medicines Utilisation Unit, Information Services Division, NHS National Services Scotland

Introduction - The National Medicines Utilisation Unit (NMUU) of NHS National Services Scotland aims to collect and disseminate high quality information on the use of medicines across NHS Scotland. Reporting of antimicrobial prescribing quality indicators is being explored, using indicators proposed by the European Surveillance of Antimicrobial Consumption (ESAC)[1,2].

Objectives - To identify whether the Prescribing Information System for Scotland (PRISMS) could be used to report antibiotic prescribing quality indicators, proposed by ESAC, for Scotland's regional Health Boards.

Methods - The PRISMS database summarises details of prescriptions dispensed in Scotland by community pharmacies over the previous 60 months. PRISMS is accessible by NHS personnel via NHS net and utilises Business Objects® and WebIntelligence® software functionality. User defined variables were created within PRISMS to allow:

- Addition of ATC classification information
- Calculation of DDDs per day (instead of per month)
- Calculation of seasonal variations in antibiotic utilisation

Results - Eleven of the 12 proposed ESAC antibiotic prescribing quality indicators, which compared Scotland's regional Health Boards, were developed within PRISMS using WebIntelligence® functionality. One indicator could not be calculated because the required data was not held in the PRISMS database.

In contrast to the proposed ESAC antibiotic prescribing quality indicators, which use the total population from national census data, PRISMS uses the sum of the patients registered with general practitioners (family doctors) in each of the regional Health Board areas.

Advantages of using PRISMS to generate reports include:
Access, Timeliness, Consistency, Flexibility

Conclusion - The reporting of the proposed ESAC antibiotic prescribing quality indicators is possible for Scotland's regional Health Boards using PRISMS.

[1] Coenen S, Ferech M, Goossens H. Exploratory workshop: antibiotic prescribing quality indicators. Scientific Report. Antwerp, University of Antwerp, 2005. [2] Ferech M, Coenen S, Hendrick E, Suetens C, Malhotra-Kumer S, Goossens H, ESAC Project Group. European surveillance of antimicrobial consumption (ESAC): quality indicators of antibiotic prescribing in ambulatory care. Pharmacoepidemiology and Drug Safety 2006; 15:S208

Empowering Pharmacists to Manage Antibiotic Treatment in a Secondary Care Setting

Bradley C
County Durham & Darlington Acute Hospitals NHS Trust

Objectives: To quantify the extent to which clinical ward based pharmacists working in a District General Hospital Trust optimised antibiotic use by managing the antibiotic treatment of patients under agreed protocols.

Methods: Quantitative analysis of 11 months data from pharmacists self reported intervention sheets provided the data for the number of antibiotic courses changed from IV to oral therapy or courses stopped at the 7 day treatment point by the pharmacists. This was compared to point prevalent audit data on antibiotic use to generate an intervention rate and number of IV or total treatment days avoided.

Results: During the study period the pharmacists reported implementing

- 1170 automatic stop orders with an estimated saving of 3510 unnecessary antibiotic treatment days
- 362 IV to oral therapy changes with an estimated saving of 507 days of unnecessary IV antibiotic therapy

The pharmacists were actively limiting the duration of antibiotic course length in approximately 15% of treatment episodes and managing the switch of IV to oral therapy in 8% of patients within their area of care.

Conclusions: This study has shown that once empowered to act pharmacists can confidently manage antibiotic regimes to prevent unnecessary IV antibiotic use and limit the duration of antibiotic therapy according to best practice guidelines.

A point prevalence survey conducted on surgical wards in nine West Midlands hospitals

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On behalf of the West Midlands Antibiotic Pharmacists GroupSandwell & West Birmingham NHS Trust, Birmingham, UK

Background: Antibiotic consumption in secondary care is poorly described. Point prevalence surveys represent a useful way to gather information on the extent of antibiotic consumption, adherence to guidelines and appropriateness of prescribing.

Method: A point prevalence survey was conducted in each of nine West Midlands hospitals. Surgical wards were chosen for the audit. Highly specialist units such as burns units, transplant units and surgical intensive care units were excluded. The audit was conducted by one or more clinical pharmacists, during a two week period in May 2006. Results were collated onto a customised Microsoft Excel spreadsheet. Data was collected on allergy status, patients on antibiotics, proportion of oral and intravenous antibiotics, course length, appropriateness of antibiotic choice, dose and duration.

Results: Almost 1300 surgical patients were audited during the study period. Nearly 32% of patients were receiving antibiotics at the time of the survey, and of those patients, 47% were receiving intravenous antibiotics. Over 15% of patients did not have their allergy status recorded on their drug chart. The average duration of IV antibiotic treatment was 3.4 days, while the average total course length was 4.7 days. Of the patients on antibiotics, almost 25% of antibiotic courses were classified as inappropriate by the surveying pharmacist, almost 15% had an inappropriate duration and 5.3% had an inappropriate route of administration.

Conclusions: This was the first point prevalence survey carried out by the group. Our methodology and data collection process require some revision. A large patient population was surveyed, which makes the data collected useful and interesting. Improvements are required in the documentation of allergies, ensuring the appropriate use of antibiotics and limiting the course length. Future surveys will monitor progress on these factors.

The Effective Use of Prescribing Databases: Reporting Antimicrobial Prescribing Patterns

MacBride-Stewart S, Bennie M
National Medicines Utilisation Unit, Information Services Division, NHS National Services Scotland

Introduction - The National Medicines Utilisation Unit (NMUU) of NHS National Services Scotland aims to collect and disseminate high quality information on the use of medicines across NHS Scotland. Standardisation of antimicrobial utilisation data is being explored, using methods employed by the European Surveillance of Antimicrobial Consumption (ESAC). ESAC has compared antimicrobial utilisation in ambulatory (primary) care across Europe using ATC (Anatomical Therapeutic Chemical) /DDD (Defined Daily Doses) methodology, and standardised populations.[1,2]

Objectives - To identify whether the Prescribing Information System for Scotland (PRISMS) could be used to analyse antimicrobial prescription data and publish ESAC-style reports for Scotland's regional Health Boards.

Methods - The PRISMS database summarises details of prescriptions dispensed in Scotland by community pharmacies over the previous 60 months. PRISMS is accessible by NHS personnel via NHS net and utilises Business Objects® and WebIntelligence® software functionality.

Results - ESAC-style reports and graphs, which compared antimicrobial utilisation in Scotland's regional Health Boards, were developed within PRISMS using WebIntelligence® functionality. To achieve this, user defined variables were created to allow:

- Addition of ATC classification information
- Calculation of DDDs per day (instead of per month)

In contrast to ESAC, which uses the total population from national census data, PRISMS uses the sum of patients registered with general practitioners (GPs) in each regional Health Board.

Advantages of using PRISMS to generate ESAC-style reports include:
Access, Timeliness, Consistency, Flexibility

Conclusion
ESAC-style reports can be produced for antimicrobial utilisation for Scotland's regional Health Boards using PRISMS.

The HARMONY antibiotic policy and process tools and SWAB Collaboration

Cookson B[1], Prins JM[2], Kullberg BJ[2], Gyssens IC[2]

[1]Centre for Infections, Health Protection Agency, London, [2]Dutch Working Party on Antibiotic Policy SWAB, Erasmus University Medical Center Rotterdam, The Netherlands

Aims - To describe the development of the HARMONY antibiotic tools and inform the meeting of their utility.

Phase One - The HARMONY antibiotic policy and process tools were derived from a DH funded study in 19 hospitals in England and Wales in the mid-1990s. The author developed a novel method of analysing the content of the policies in these hospitals using spreadsheet Lichart qualitative scoring systems (Delphi techniques were abandoned early on because of issues of defining boundaries of agreement). It was then developed into a more mature system by interacting with the Consultant Microbiologists in these centres. It was also reviewed by many experts at a British Society of Antimicrobial Chemotherapy Spring Meeting. Process assessment tools were developed in a more rudimentary way.

Phase Two - In 2001-2002 the tools were further developed interacting with 14 experts in antibiotic stewardship of the ESCMID study group on antibiotic policies from nine 9 European countries and 20 Diploma of Healthcare Associated Infection Foundation Course attendees (Juniors and Consultants) from UK, Malta and Germany. The process assessment tools were developed into a more useful approach benefiting from the experiences of another European project assessing stewardship on Intensive Care Units (D. Monnet, project leader). The tool now has 112 parameters in five areas of prescribing. Approximately 50% of policies contain these elements and participants have felt that at least 75% of the parameters should be included in their policy when they next review it. Over 80% of participants found the tool extremely useful. Comments from several experts included "I wish I had had this tool when I first wrote my policy." The process areas of stewardship include seven on education and 23 in other areas. Differences in approaches resonate with the recent BSAC review of prescribing interventions.

Phase Three - These experiences have resulted in a tool, which has now been used in over 35 UK hospitals and many others abroad. The "potential effectiveness" and "prescribing practice" elements have been used at:

- International Federation of Infection Control Workshops
- Healthcare Associated Infection courses in several countries including Malta, Croatia, Bulgaria, Australia and Estonia and annually in the UK.
- Used to facilitate national consensus meetings in Malta and Dubai
- Used by Inge Gyssens for the 2004 review of their National Antibiotic Policy (completing it was a condition of attendance): a paper is in preparation.
- Inform the design of other European Questionnaire in the field e.g. the ARPAC study
- The author considered sub-sections of this tool when he advised upon the recent English Healthcare Commission Survey

The Future - The tool has been used in several multi-disciplinary meetings and can be an effective change-management tool, encouraging organisational change. Discussions are underway with several authorities as how HARMONY tools can best inform future prescribing interventions.

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