

AUDIT OF THE REGIONAL GUIDELINES FOR FIRST-LINE EMPIRICAL ANTIBIOTIC THERAPY IN ADULTS

AUDIT REPORT BY THE NORTHERN IRELAND REGIONAL
ANTIMICROBIAL PHARMACISTS NETWORK

May 2011

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EXECUTIVE SUMMARY

Specialty:	Pharmacy
Disciplines involved:	Antimicrobial Pharmacists and Medical Staff
Project lead:	Professor M Scott, Head of Pharmacy and Medicines Management, Northern HSCT

Aim:

To determine the level of adherence to the Regional Antibiotic Guidelines for first line empirical therapy in adults.

Standards:

The Standards of this audit are taken from the N.I. Regional Antibiotic Guidelines (2010) - Guidelines for First-Line Empirical Antibiotic Therapy in Hospitalised Adults.

Sample:

Patients admitted to hospital during the 4 month period from 1st September 2010 to 31st December 2010 with a respiratory tract infection such as CAP, infective exacerbation COPD, non-pneumonic LRTI and HAP were included in the audit.

Data sources:

In the audit, data sources used included secondary care patients' medical notes, kardexs and the laboratory system for blood and bacteriology results.

Results

Areas of good practice:

- Adherence to the regional guidelines for antibiotic treatment of LRTI's was 85% for the whole region. Adherence ranged from 76% to 96% between the five Trusts. The percentage of patients with signs of infection and/or sepsis was 97% for the whole region.
- Allergy status was recorded on the kardexs in 98% of cases.
- Total antibiotic duration on the audit day for both IV and/or Oral less than 7 days or greater than 7 days and reviewed as per treatment plan or according to guideline was 99% for the region.

- IV antibiotic duration on the audit day less than 48 hours or greater than 48 hours and reviewed as per treatment plan or according to guideline was 95% for the region.
- There has been a reduction in the use of co-amoxiclav at the NHSCT, WHSCT and BHSCT since the implementation of the Regional Guidelines.

Areas for improvement:

- Although adherence to antibiotic treatment has improved, a target rate of adherence of 90% and above is required.
- Overall adherence to documentation of a review or stop date on the kardex or medical notes was low at 38%. However, IV antibiotic duration and total antibiotic courses were within guideline recommendations.
- Overall adherence to documentation of a CURB-65 in the medical notes of patients diagnosed with CAP was only 62% for the region.

Recommendations:

1. Regional Guidelines are due to be updated in 2011. On dissemination of updated guidelines to medical and pharmacy staff, additional information summarising the results of this audit to be issued at the same time. Specific reminders regarding improving adherence to guidelines, documentation of CURB 65 scores and review/stop dates.
2. Consideration by BHSCT, WHSCT and SEHSCT to alter their CAP guidance to that of SHSCT and NHSCT to help reduce overall usage of co-amoxiclav throughout the region.

BACKGROUND

In recent years there has been great concern about the rise of healthcare-associated infections (HCAIs), in particular those caused by Methicillin Resistant *Staphylococcus Aureus* (MRSA) and *Clostridium Difficile*. The inappropriate and overuse of unnecessary antibiotics is a contributing factor and it is well recognised that the use of 'high risk' antibiotics such as clindamycin, flouroquinolones, second/third generation cephalosporins and more recently co-amoxiclav and clarithromycin are positively associated with *Clostridium difficile*-Associated Diarrhoea (CDAD)^{1,2}.

Good antimicrobial stewardship involves selecting the most appropriate drug at its optimal dose and duration to eradicate infection while minimising side effects and pressures for the selection of resistant strains³. Therefore antimicrobial stewardship programmes are necessary to help in the prevention and control of antimicrobial resistance. Evidence-based antibiotic guidelines provide optimum antimicrobial therapy for the majority of patients and control the emergence of antimicrobial resistance⁴. The development and implementation of local guidelines for common infections is a crucial element of stewardship.

Antibiotic usage figures obtained in 2009 from the pharmacy computer systems in a variety of hospitals in N.I. suggests that we have successfully reduced the usage of 'high risk' antibiotics with respect to CDAD through various methods of restriction but this has had the effect of increased usage of medium and lower risk antibiotics. Co-amoxiclav (classed as medium risk) is commonly prescribed for lower respiratory tract infections (LRTI)/ chronic bronchitis and Community Acquired Pneumonia (CAP). In January 2009, expert guidance from the Department of Health (DoH) suggested that the use of co-amoxiclav should be reduced in order to reduce the incidence of CDAD. Audit work carried out at Antrim Area Hospital (Northern Health and Social Care Trust) between January-April 2009 demonstrated 46% adherence to policy for CAP. In addition 50% of patients diagnosed with an unspecified LRTI were prescribed co-amoxiclav. The latter did not have a specific guideline in the local policy⁶.

Regional guidelines for first-line empirical antibiotic therapy in hospitalised adults were developed following a recommendation by RQIA in 2008 and became widely available in the five Health and Social Care Trusts (HSCT) in Northern Ireland (N.I.) from December 2009. The development of region-wide antibiotic prescribing guidelines was intended to provide regional consistency of prescribing and to help reduce the use of medium risk antibiotics.

The regional guidelines have been tailored and include slight local variations between HSCTs, for example:

- For the treatment of CAP the Northern HSCT and Southern HSCT guidelines recommend the introduction of co-amoxiclav at a late stage when there is no response or a deterioration within 48 hours of therapy with IV amoxicillin.
- For the NHSCT, the guideline for Infective exacerbation of Chronic Obstructive Pulmonary Disease (COPD) was reworded as 'non-pneumonic LRTI,' for example, Bronchitis (chronic) or Infective exacerbation COPD which recommends treatment with amoxicillin/doxycycline/clarithromycin.

Regular audit is carried out on local guidelines in each of the HSCTs and after the introduction and implementation of regional guidelines, it is necessary to continue this work regionally to identify problem areas and potential solutions.

This is a priority area for action because tackling resistance and optimising antibiotic prescribing is crucial in helping prevent HCAs. By carrying out this audit it was hoped that patients would receive the most appropriate therapy for their condition and at the same time minimise their risk of acquiring a HCAI.

AIM

To determine the level of adherence to the Regional Antibiotic Guidelines for first line empirical therapy in adults.

OBJECTIVES

Primary Objectives

To determine adherence to the regional antibiotic guidelines for:

- The treatment of Lower Respiratory Tract Infections (LRTI's) including CAP, Hospital Acquired Pneumonia (HAP) and non-pneumonic LRTI e.g. chronic bronchitis and Infective exacerbation COPD.
- Documentation of a review or stop date in the medical notes or kardex.
- Total duration of treatment of IV and oral antibiotics.
- Duration of treatment of IV antibiotics.
- Documentation of a CURB-65 score. In order to determine adherence to the CAP guidance, a clear diagnosis of CAP with a CURB-65 score must be stated in the patients' medical notes. The guidelines state that when prescribing, the prescriber must document in the notes the indication for treatment.
- Documentation of antibiotic allergy status on kardex.

Secondary Objectives

To determine:

- If there were signs of infection and/or sepsis which warranted antibiotic treatment.
- If antibiotic prescriptions were reviewed and amended as per culture and sensitivity results.
- Monitor usage of co-amoxiclav as number of Defined Daily Doses (DDD's)/100 occupied bed-days.

STANDARDS

The Standards of this audit are taken from the N.I. Regional Antibiotic Guidelines (2010) - Guidelines for First-Line Empirical Antibiotic Therapy in Hospitalised Adults.

The Standards being measured include:

1. Patients admitted to hospital with a LRTI, should be prescribed antibiotics as per empirical antibiotic guidelines
2. Allergy status must be documented on kardex
3. A review or stop date must be documented in the medical notes or kardex
4. Duration of therapy should not exceed that recommended in the guidelines unless clearly indicated in the medical notes
5. For those patients diagnosed with CAP, documentation of a CURB 65 score must be stated in the medical notes
6. Treatment should be reviewed once antibiotic sensitivities are available

A target rate of adherence to guidelines is set at 90%.

METHODOLOGY

Proforma development

The Antimicrobial Pharmacists across the 5 HSCTs had a meeting in April 2010 to discuss the audit and the necessary elements required in the data collection form. The Northern HSCT Antimicrobial Pharmacists developed the data collection tool (Appendix 2) which was based on the Southampton University Hospitals NHS Trust audit proforma. It was piloted in July and August 2010 by the Antimicrobial Pharmacists in each trust.

Sample

Patients admitted to hospital during the 4 month period from 1st September 2010 to 31st December 2010 with a respiratory tract infection such as CAP, infective exacerbation COPD, non-pneumonic LRTI and HAP were included in the audit.

Data collection was spread evenly over the 4 months. A random sample of 80 patients per Trust was audited i.e. 400 in total for the region. In each Trust 20 patients per month were audited. 3 patients were since excluded due to inadequate information, thus N=397.

Patients were identified upon presentation to the ward and from admission lists. To minimise bias, a cross-section of wards in each Trust were audited. Wards audited included the admission units, a general medical ward in a large and small hospital within the various Trusts, a respiratory ward within the large hospitals, a care of the elderly ward and a surgical ward in each Trust.

Data collection

Using the data collection form in Appendix 2, data was collected prospectively and information was obtained from patients' drug kardex and medical notes. Blood and bacteriology results were obtained from the hospital laboratory system.

Data collected during September was validated by a GP with special interest in Infectious Diseases who was a project team member in the Northern HSCT. This data was validated prior to continuing with data collection.

Data analysis and report writing

Data was entered into SPSS by the clinical audit and effectiveness department at the Northern HSCT which was validated by the Northern HSCT Antimicrobial Pharmacists.

Any cases where the relevant information had not been documented on the proforma were entered into SPSS as 'not recorded'.

This report was completed by Northern HSCT Antimicrobial Pharmacists.

RESULTS

397 patients were identified for inclusion in the audit in whom a total of 568 antibiotics were prescribed.

Table 1: Distribution of Diagnoses N=397

Number of Patients per Trust						
	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Indication						
CAP	32	39	37	39	38	185
CAP (Aspiration)	7	8	7	2	2	26
HAP	11	24	11	19	20	85
Infective Exacerbation of COPD	14	9	19	18	19	79
Non-pneumonic LRTI (unspecified)	15	0	5	1	0	21
Other				1		1
Total	79	80	79	80	79	397

Table 1 shows the distribution of diagnoses for the patients studied in each Trust. The most common diagnosis was CAP, followed by HAP and Infective Exacerbation of COPD.

ADHERENCE TO ANTIBIOTIC TREATMENT

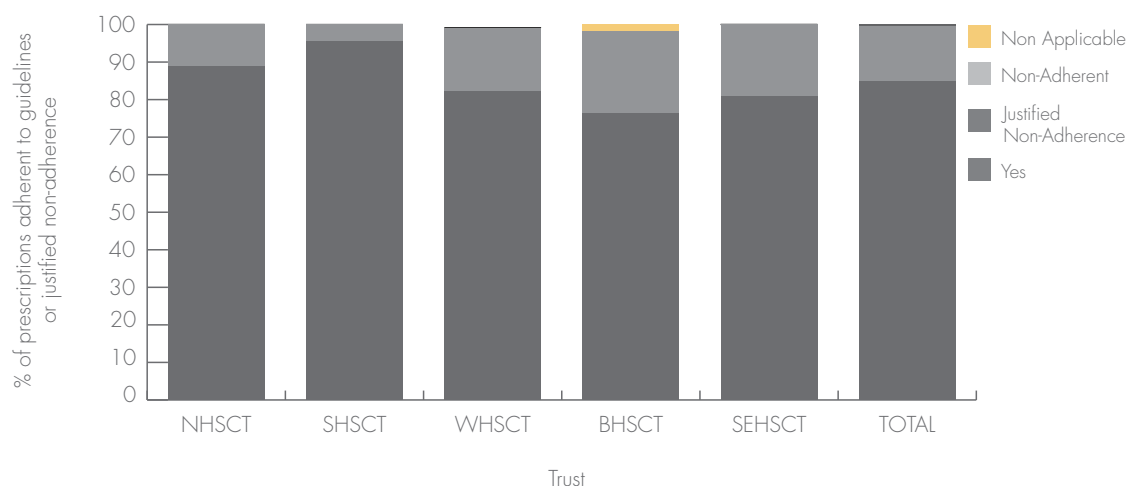


Figure 1

Figure 1 shows the percentage of prescriptions adherent to or justified non-adherence to the regional antibiotic guidelines for the 5 Trusts. Average adherence was 85% for the whole region.

Table 2: Distribution of Guideline Adherence, n=568

Number of Prescriptions that adhere to guidelines						
Adherence to Antibiotic Guidelines	NHST	SHST	WHST	BHST	SEHST	TOTAL
Yes	86	97	73	82	66	404
No (Justified and Unjustified Non-Compliance) (see Table 3)	23	16	39	34	50	162
Not Applicable (diagnosis out with the guidelines)				2		2
Total	109	113	112	118	116	568

Table 2 shows the number of prescriptions that adhered to guidelines, the number that were non-adherent to the guidelines (justified and unjustified) and other prescriptions where the diagnosis was out with the guidelines.

Table 3: Distribution of Non-Adherence (Justified and Non-Justified), n=162

	Reasons for Non-Compliance (Numbers)					
Reasons for Non-Compliance	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
1.Guideline Antibiotics Contra-indicated	0	1	1	0	0	2
2. Microbiology Advice	3	6	4	0	9	22
3. Previous culture and sensitivity result suggesting resistance to guideline antibiotics	0	1	5	0	1	7
4. Potentially Resistant Pathogen (healthcare exposure/nursing/care home resident)	1	0	1	1	5	8
5. Failed Treatment with guideline antibiotics	7	1	4	6	8	26
6. Recent (within 2 weeks) treatment with guideline antibiotics	0	2	4	1	5	12
7. Non- Compliant	12	5	19	26	22	84
8. Not Recorded			1			1
Total	23	16	39	34	50	162

NB: Points 1-6 are all 'justified non compliance'
Point 7 refers to 'true non compliance'

Table 3 shows the number of prescriptions and associated reason for justified non-compliance with the antibiotic guidelines and unjustified non-compliance. The main reason for justified non-compliance was failed treatment with guideline antibiotics.

ADHERENCE TO DOCUMENTATION OF REVIEW OR STOP DATE IN MEDICAL NOTES OR KARDEX

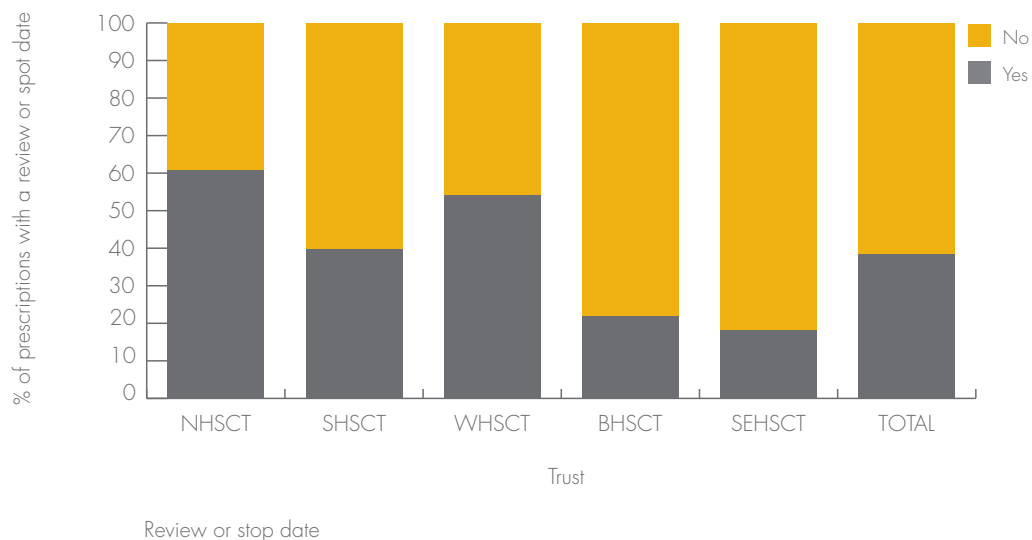


Figure 2

Figure 2 shows the percentage of prescriptions with a review or stop date on the kardex or in the medical notes. Overall adherence to documentation of a review or stop date on the kardex or in medical notes was 38%.

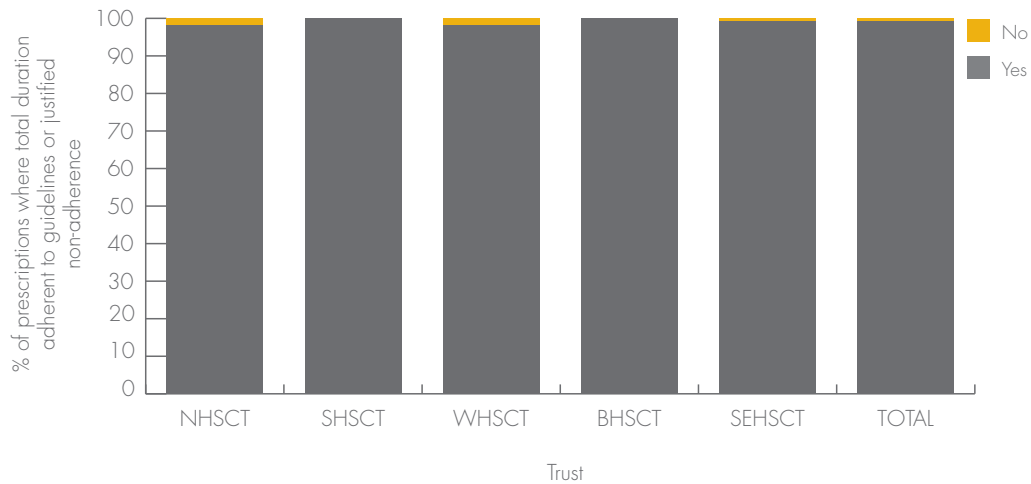
Table 4: Number of Prescriptions with a Review or Stop Date, n=565

Review or Stop Date	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Yes	65	45	60	26	21	217
No	42	68	51	92	95	348
Total	107	113	111	118	116	565

(3 prescriptions were excluded as 1 had no information recorded and 2 were audited on admission to hospital and were recorded as not applicable)

Table 4 shows the number of prescriptions with a review or stop date on the kardex

ADHERENCE TO GUIDELINES ON RECOMMENDED TOTAL DURATION OF TREATMENT



Total duration on audit (IV &/OR oral duration <7 days or > 7 days and reviewed as per treatment plan OR according to guideline)

Figure 3

Figure 3 shows percentage of prescriptions where the total duration of therapy on audit day is adherent to the guidelines or where there is justified non-adherence to the duration guidelines. Adherence to total duration was 99% for the whole region.

Table 5: Number of Prescriptions Adherent to Recommended Total Duration of Therapy, n=568

Total Duration on Audit Day (IV &/OR Oral Duration <7 Days or > 7 Days and Reviewed as per Treatment Plan OR According to Guideline)	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Yes (Adherent to Guidelines/ Justified Non-Adherence)	107	113	110	118	115	563
No	2	0	2	0	1	5
Total	109	113	112	118	116	568

Table 5 shows the number of prescriptions adherent to the guidelines on the total duration of therapy.

ADHERENCE TO GUIDELINES RECOMMENDED IV ANTIBIOTIC DURATION OF TREATMENT

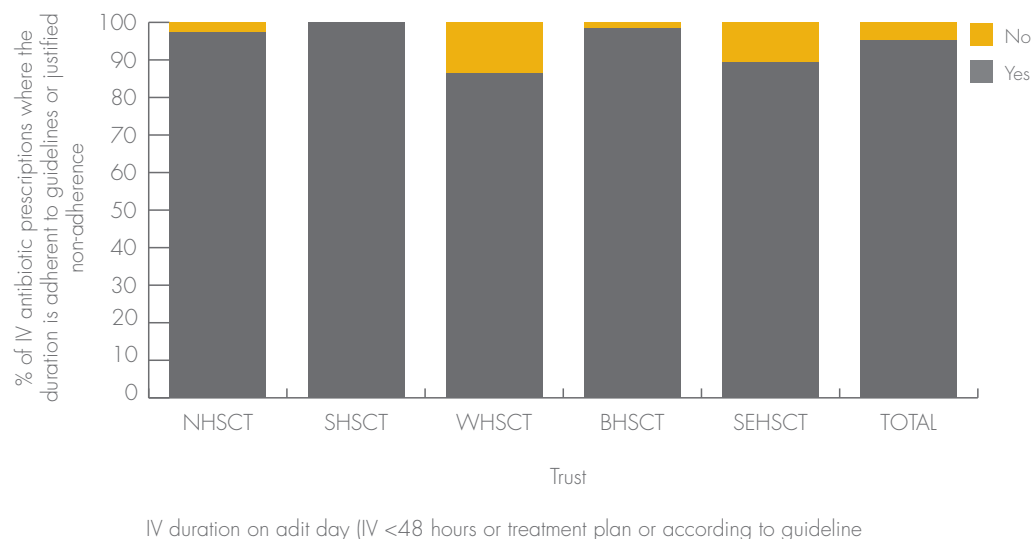


Figure 4

Figure 4 shows the percentage of IV antibiotic prescriptions adherent to guideline duration recommendations or where there was justified non-adherence to recommended duration. Adherence to IV antibiotic duration was 95% for the whole region.

Table 6: Number of Prescriptions Adherent to Recommended IV Antibiotic Duration of Therapy, n=331

IV Duration on Audit Day (IV <48 hours or > 48 hours and Reviewed as per Treatment Plan OR According to Guideline)	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Yes (Adherent to Guidelines or Justified Non-Adherence)	72	81	38	66	58	315
No	2		6	1	7	16
Total	74	81	44	67	65	331

Table 6 shows the number of prescriptions adherent to the guideline recommendations on duration of therapy or where there was justified non-adherence to duration of therapy guidelines.

ADHERENCE TO DOCUMENTATION OF A CURB-65 SCORE FOR DIAGNOSIS CAP IN MEDICAL NOTES

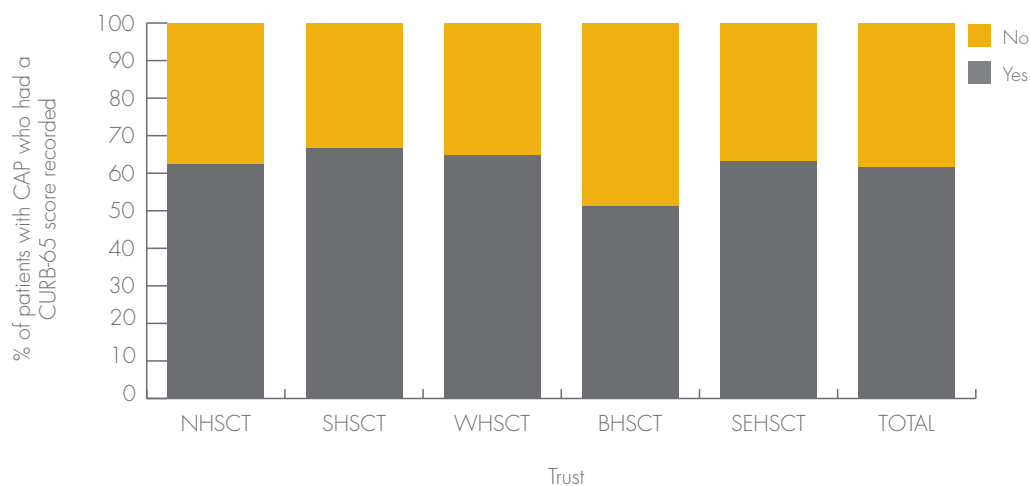


Figure 5

Figure 5 shows percentage of patients diagnosed with CAP who had a CURB-65 score documented in the medical notes. Adherence to documentation of a CURB-65 score was 62% for the whole region.

Table 7: Number of Patients with a CURB-65 Score for CAP recorded in Medical Notes

Number of Patients						
CURB-65 SCORE RECORDED IN NOTES FOR THOSE WITH CAP	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Yes	20	26	24	20	24	114
No	12	13	13	19	14	71
Total	32	39	37	39	38	185

Table 7 shows the number of patients who had a CURB-65 score documented in the medical notes.



PERCENTAGE OF PATIENTS WITH ALLERGY STATUS DOCUMENTED ON KARDEX

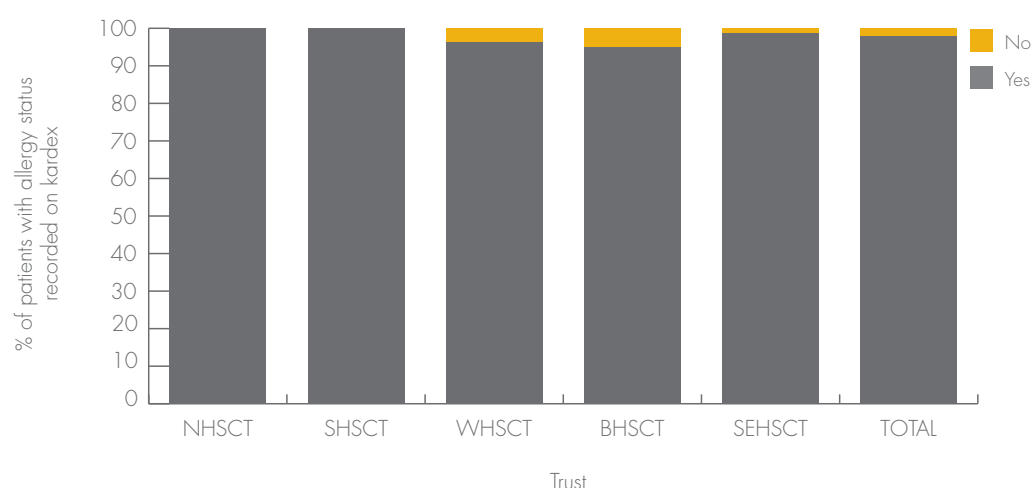


Figure 6

Figure 6 shows percentage of patients with their allergy status documented on the kardex. Adherence to documentation of allergy status was 98% for the whole region.

Table 8: Number of Patients with Allergy Status Documented on Kardex, n=397

	Number of Patients (%)					
Allergy Status Documented on Kardex	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Yes	79 (100%)	80 (100%)	76 (96%)	76 (95%)	78 (99%)	389 (98%)
No		0	3 (4%)	4 (5%)	1 (1%)	8 (2%)
Total			79	80	79	397

Table 8 shows the number of patients with their allergy status documented on the kardex

PERCENTAGE OF PATIENTS WITH SIGNS OF INFECTION AND/OR SEPSIS

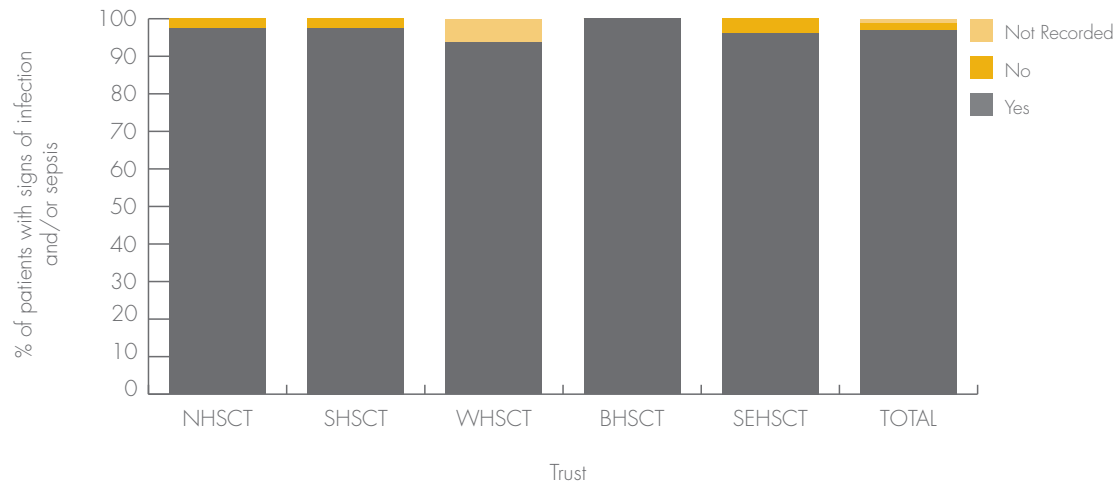


Figure 7

Figure 7 shows the percentage of patients with signs of infection and/or sepsis which was 97% for the whole region.

Table 9: Number of Patients with Signs of Infection and/or Sepsis, n=397

	Number of Patients (%)					
Signs of Infection and/or Sepsis	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Yes	77 (97%)	78 (97.5%)	74 (94%)	80 (100%)	76 (96%)	385 (97%)
No	2 (3%)	2 (2.5%)	0	0	3 (4%)	7 (2%)
Not Recorded			5 (6%)			5 (1%)
Total	79	80	79	80	79	397

Table 9 shows the number of patients with signs of infection and/or sepsis.

PERCENTAGE OF ANTIBIOTIC PRESCRIPTIONS REVIEWED AND AMENDED WHEN CULTURE AND SENSITIVITY (C&S) RESULTS AVAILABLE

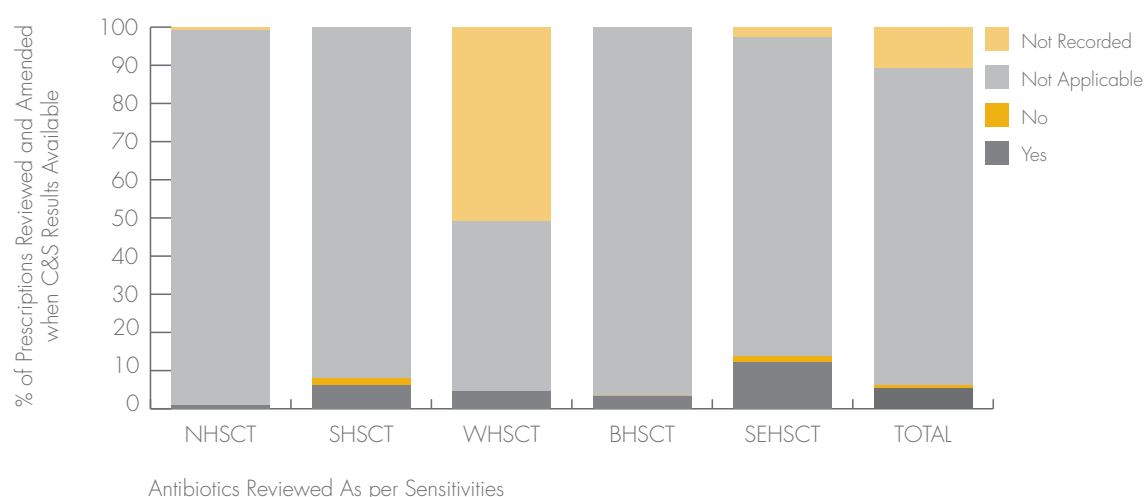


Figure 8

Figure 8 shows the percentage of prescriptions reviewed and amended when C&S results became available. In 83% (472/568) of the prescriptions for the whole region this was not applicable and in 11% (61/568) this information was not recorded on the data collection form. Of the remaining 35 prescriptions, 89% (31/35) were reviewed and amended when C&S results became available.

Table 10: Number of Prescriptions that were reviewed and amended when C&S results available, n=568

	Number of Prescriptions that are reviewed as per sensitivities					
Antibiotics Reviewed As per Sensitivities	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT	TOTAL
Yes	1	7	5	4	14	31
No		2			2	4
Not Applicable	107	104	50	114	97	472
Not Recorded	1		57		3	61
Total	109	113	112	118	116	568

CO-AMOXICLAV USAGE

Table 11: Usage of Co-amoxiclav prior to implementation of Regional Guidelines (Dec 09) and after implementation (Dec 10)

	Co-amoxiclav Usage in DDDs/100 Occupied Bed Days				
	NHSCT	SHSCT	WHSCT	BHSCT	SEHSCT
December 2009	35.72	No Data Available	38.83	27.2	20.26
December 2010	21.75	No Data Available	31.65	26.81	29.08

Table 11 shows co-amoxiclav usage in each Trust in December 2009 prior to implementation of the regional antibiotic guidelines compared to after implementation in December 2010.

OBSERVATIONS

Areas of good practice:

- Adherence to the regional guidelines for antibiotic treatment of LRTI's was 85% for the whole region. Adherence ranged from 76% to 96% between the five Trusts.
- Percentage of patients with signs of infection and/or sepsis was 97% for the whole region.
- Allergy status was recorded on the kardex in 98% of cases.
- Total antibiotic duration on the audit day for both IV &/OR Oral was less than 7 Days or greater than 7 Days and reviewed as per treatment plan or according to guideline for 99% of prescriptions across the region.
- IV antibiotic duration on the audit day was less than 48 hours or greater than 48 hours and reviewed as per treatment plan or according to guideline for 95% of prescriptions across the region.
- There has been a reduction in the use of co-amoxiclav at the NHSCT, WHSCT and BHSCT since the implementation of the Regional Guidelines.

Areas for improvement:

- Although adherence to antibiotic treatment has improved, a target rate of adherence of 90% and above is required.
- Overall adherence to documentation of a review or stop date on the kardex or in the medical notes was low at 38%.
- Overall adherence to documentation of a CURB-65 score for diagnosis CAP in Medical Notes was only 62% for the region.

DISCUSSION

This audit demonstrated that adherence to the regional antibiotic guidelines for respiratory tract infections across Northern Ireland was 85% (76%-96%). In May 2009 the NHSCT, SHSCT, WHSCT and SEHSCT all participated in a European Surveillance of Antimicrobial Chemotherapy (ESAC) point prevalence survey of antimicrobial prescribing. The results of this study demonstrated that the overall adherence rate to hospital guidelines was 52.4%⁵. The ESAC study measured antibiotic prescribing in all types of infection, however an audit carried out in the NHSCT between January and April 2009 on adherence to antibiotic guidelines for respiratory tract infections demonstrated that adherence to antibiotic guidelines was only 46%⁶. Therefore this audit has shown that there has been an overall improvement in adherence to antibiotic guidelines for respiratory tract infections since the introduction of the Regional Antimicrobial Guidelines.

The documentation of a CURB-65 score in the notes of patients diagnosed with CAP was only 62% for the region. Ideally all patients diagnosed with CAP should have a CURB-65 score documented in notes.

The documentation of review or stop dates on drug charts and case notes was only 38% for the region. On the day of audit 99% of all antibiotic prescriptions adhered to the guidelines on duration of therapy, whereby the duration was <7 days or if >7 days was reviewed as per treatment plan or guideline recommendation. A similar result of 95% was obtained for adherence to recommendations for duration of IV therapy, which should be <48hours unless specifically indicated. However as this was a prospective audit, courses of antibiotics had not been completed and this limits the conclusions which can be drawn from this data. Complete analysis would require retrospective data collection to enable antibiotic duration to be fully assessed. Duration of therapy is important as the prolonged administration of antibiotics can facilitate the development of line/cannula site infections and in particular for those antibiotics that are broad spectrum, can lead to the development of antibiotic resistance and CDAD. Additionally, the expense of the administration of IV antibiotics (prolonged hospital stay or home nursing care), and the cost of the drugs themselves can have huge cost implications for healthcare trusts.

Regarding co-amoxiclav, the NHSCT were particularly keen to reduce its usage due to its association with CDAD and had shown the most significant reduction since implementation of the regional guidelines. Both the NHSCT and the SHSCT had recommended in their guidelines for the treatment of CAP, the introduction of co-amoxiclav at a late stage when there is no response/deterioration within 48 hours of therapy with IV amoxicillin. In addition the NHSCT guideline for Infective exacerbation COPD was reworded as 'non-pneumonic LRTI e.g. Bronchitis (chronic) or Infective exacerbation COPD' which recommends treatment with amoxicillin/doxycycline/clarithromycin. Both these changes have made an impact on co-amoxiclav usage.



RECOMMENDATIONS

1. Regional Guidelines are due to be updated in 2011. On dissemination of updated guidelines to medical and pharmacy staff, additional information summarising the results of this audit will be issued including specific reminders regarding improving adherence to guidelines, documentation of CURB 65 scores and review/stop dates.
2. Consideration by BHSCT, WHSCT and SEHSCT to alter their CAP guidance to that of SHSCT and NHSCT to help reduce overall usage of co-amoxiclav throughout the region.

LEARNING POINTS

Regarding duration of therapy, this data would be better collected retrospectively as opposed to duration review on audit day. This would give a better indication of total duration. Prior to re-audit, the data collection form would need to be altered to allow for this.

DISSEMINATION

The results of this audit were presented regionally at the HCAI symposium, 30th March 2011 at the Kings Hall, Belfast.

ACTIONS

Clinical Audit Action Plan

Audit of the Regional Guidelines for First-Line Empirical Antibiotic Therapy in Adults					
Action plan lead: Professor Scott, Head of Pharmacy and Medicines Management, Antrim Hospital, NHSCT					
Recommendation	Actions Required	Action by Date	Person(s) Responsible	Comments/ Action Status	Change Stage (see key)
1. Regional Guidelines are due to be updated in 2011. On dissemination of updated guidelines to medical and pharmacy staff, additional information summarising the results of this audit to be issued at the same time. Specific reminders regarding improving adherence to guidelines, documentation of CURB 65 scores and review/stop dates.	Update guidelines and attach results and reminders regarding adhering to policy, improving documentation and review/stop dates.	01/08/2011	Professor Scott and Antimicrobial Pharmacists		NHSCT – 2 SEHSCT – 2 BHSCT – 2 WHSCT – 2 SHSCT – 1
2. Consideration by BHSCT, WHSCT and SEHSCT to alter their CAP guidance to that of SHSCT and NHSCT to help reduce overall usage of co-amoxiclav throughout the region	Update regional guidelines to reduce co-amoxiclav usage.	01/08/2011	Consultant Medical Microbiologists for each Trust		SEHSCT – 3 BHSCT – 1 WHSCT – 1

Key (Change status)

1. Recommendation agreed but not yet actioned
2. Action in progress
3. Recommendation fully implemented
4. Recommendation never actioned (state reasons)
5. Other (provide supporting information)



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APPENDICES

Appendix 1 – Contributors and Acknowledgements

Table 12: Project Team members

Project Team	Job title
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- This was a regional audit undertaken by the Antimicrobial Pharmacists in the 5 Trusts in N.I.
- The Project was led by Head of Pharmacy and Medicines Management, Northern HSCT.
- Dr Maria Dowds, GP with special interest in Infectious Diseases had an advisory and data validation role.
- Fidelma Magee and Geraldine Conlon, Antimicrobial Pharmacists, Northern HSCT – proforma design, data collection, data analysis, local and regional presentation and report writing.
- Bernie McCullagh and Cheryl Ferguson, Antimicrobial Pharmacists, SEHSCT – data collection and local presentation.
- Ann McCorry, Antimicrobial Pharmacist, SHSCT – data collection and local presentation.

- Cairine Gormley and Sinead McElroy, Antimicrobial Pharmacist, WHSCT - data collection and local presentation.
- Caroline Mallon and Gary Millar- Antimicrobial Pharmacists, BHSCT - data collection and local presentation.
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APPENDIX 2: N.I. REGIONAL ANTIMICROBIAL CARE ELEMENTS PRESCRIBING AUDIT PROFORMA

Date	Trust	Hospital	Ward	Medical Notes – Care Elements											
Please insert patient addressograph here *				1. Documentation of Indication				2. Guideline Prescribing or Justified Off-Guideline Rx*							
Consultant Team.....								Choice of Antibiotic	Off-Guideline Prescribing						
Allergy status on Kardex* (Yes/No)	Antibiotic Prescribed	Route i.e. oral /IV	Start date (if current therapy step down, record IV start date)	Review or Stop date* (Yes/No)	Clear Indication in notes as per guidelines (Yes/No) SPECIFY _	Curb score in notes for cap* (Yes, No or N/A)	Calculated curb score when not documented in notes for cap 0-1, 2, 3-5 or N/A	Signs of Infection and/or Sepsis* [∞] (Yes/No)	As per guidelines (Yes/No or N/A)	Valid reason documented_ (Yes/No) (specify reason)					
								3. Duration Review							
				IV Duration up to Audit Day*		Total Duration (IV & Oral) OR Oral Duration on Audit Day*		4. Culture and Sensitivities (C&S)							
				IV Duration ≤ 48 hours ; OR IV Duration > 48 hours and reviewed as per treatment plan;		- IV & Oral ≤ 7 days (Oral ≤ 7 days); OR IV & Oral > 7 days (Oral > 7 days) and reviewed as per treatment plan;		When C&S results available*							
				OR according to Guideline (Yes/No or N/A)		OR according to Guideline (Yes/No or N/A)		Antibiotic Rx reviewed and amended as appropriate when C&S results and documented in notes. (Yes/No or N/A)							

Eight Care Elements. One point will be scored for each element achieved (or N/A) for all antibiotics prescribed for that patient.

*Valid reasons include: (a) guideline antibiotics contra-indicated; (b) advice from microbiologist; (c) previous culture and sensitivity result suggesting resistance to guideline antibiotics; (d) potentially resistant pathogen (e.g. healthcare exposure, nursing/care home resident); (e) failed treatment with guideline antibiotics; (f) recent (within 2 weeks) treatment with guideline antibiotics

[∞] Signs of infection and/or sepsis include raised temperature, tachycardia, tachypnoea, low BP, raised WCC and CRP

‡ Indications include: (1) CAP; (2) Community Acquired Aspiration Pneumonia; (3) Chronic Bronchitis; (4) Inf: Exac COPD; (5) LRTI (non-pneumonic in NHSCT guidelines); (6) HAP; (7) Upper RTI (in SHSCT guidelines); (Form adapted from Southampton University Hospitals NHS Trust, Pharmacy and Microbiology Departments October 2009. Version 2.1 February 2010)

APPENDIX 3 - NORTHERN IRELAND REGIONAL ANTIBIOTIC GUIDELINES (2010)

The Standards measured as part of this audit were taken from the following Northern Ireland Regional Antibiotic Guidelines (2010):

- Belfast Health & Social Care Trust, First-line empirical antibiotic therapy in hospitalised adults, August 2010
- Northern Health & Social Care Trust, First-line empirical antibiotic therapy in hospitalised adults, August 2010
- Southern Health & Social Care Trust, First-line empirical antibiotic therapy in hospitalised adults, February 2010
- South Eastern Health & Social Care Trust, First-line empirical antibiotic therapy in hospitalised adults, April 2010
- Western Health & Social Care Trust, First-line empirical antibiotic therapy in hospitalised adults, February 2010

Copies of these guideline pdf versions are available to download on GAIN website alongside this audit report.

NOTES



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