Quality indicators and outcomes in the devolved nations – Scotland

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Birmingham, 1st December 2017
NATIONAL AMR & HAI STRUCTURE IN NHS SCOTLAND

Government

National strategy

SG HAI Policy Unit
Scottish Government Controlling Antimicrobial Resistance in Scotland (CARS)

UK AMR group
Scottish Antimicrobial Resistance and Healthcare Associated Infection (SARHAI) Strategy Group

National delivery organisations

NHS National Services Scotland
Health Protection Scotland
Information Services Division

NHS Education for Scotland

Healthcare Improvement Scotland
Scottish Antimicrobial Prescribing Group
Scottish Patient Safety Programme

Local delivery groups

Infection Control Teams
Antimicrobial Management Teams
SAPG WORKSTREAMS

• **Information** to develop, maintain and link national datasets of antimicrobial use and resistance

• **Quality improvement** to produce guidance on antimicrobial policies and management of infections and develop interventions to optimise antibiotic use

• **Education** to develop educational resources to support antimicrobial stewardship by health and care staff, patients and the public

All 3 workstreams involved in quality indicators

• **Surveillance data** informs and measures progress with QIs

• **Quality improvement methodology** used to collect and feed back ward level data

• **Education of staff** crucial to effect behaviour change
HISTORY OF QUALITY INDICATORS

HOSPITAL QUALITY INDICATOR 2009 ONWARDS

Focused on admission wards and surgical prophylaxis for colorectal surgery

Two measures for each:
• Empiric treatment: indication documented & compliance with local policy
• Surgical prophylaxis: single dose and compliance with local policy

Target of 95% compliance with measures (as per methodology used in Scottish Patient Safety Programme)

Following reliable and sustained improvement
spread to downstream wards and other surgical specialties

Evolved to increase number of measures and wards chosen based on local need to improve prescribing in priority areas
AGGREGATED NATIONAL DATA FROM SAMPLE OF MEDICAL WARDS IN EACH ACUTE HOSPITAL

1. All prescribed doses administered or reason for missed doses documented

2. Indication for antibiotic treatment documented

3. Anticipated duration of treatment documented or IV treatment reviewed within 72 hours

4. Antibiotic treatment compliant with local policy or reason for deviation documented
AGGREGATED NATIONAL DATA FROM SAMPLE OF SURGICAL WARDS IN EACH ACUTE HOSPITAL

1. All prescribed doses administered or reason for missed doses documented

2. Indication for antibiotic treatment documented

3. Anticipated duration of treatment documented or IV treatment reviewed within 72 hours

4. Antibiotic treatment compliant with local policy or reason for deviation documented
HOSPITAL QUALITY INDICATOR 2017-18

National HEAT targets under review and move towards having standards with quality indicators across all health and social care practice.

**Quantitative** element
1% reductions in total use, piptazo and carbapenems)
Baseline Jan- Dec 2015

**Qualitative** element
Four measures based on SSTF and focused on outcome of antibiotic review
(Note that work had already started on methodology for collecting these measures in previous year)

Data collected in sample of wards in each acute hospital using national antimicrobial app

Local feedback of data to clinical teams and quarterly reports for SAPG on board level and national level
2017 - HOSPITAL QUALITY INDICATOR VIA APP

**Antimicrobial Companion**

**NHS Grampian**
- Vancomycin Dosage Calculator
- Gentamicin Dosage Calculator
- Hospital Guidance
- Primary Care Guidance
- QI Audit
- Protected (Alert) Policy

**Select Hospital**
- Select Specialty
- Select Ward
- September 2017

Please make one submission per infection episode

- Indication documented in the medical notes?
- Treatment compliant with policy?
- Only oral antibiotics prescribed?
- IV or combination (IV and oral) antibiotics prescribed?

Comments

Submit Audit Data
NATIONAL DATA – TOTAL ANTIBIOTIC USE

ANTIBIOTIC USE IN ACUTE HOSPITALS

NATIONAL DATA – CARBAPENEMS & PIPTAZO

**CARBAPENEMS USE IN ACUTE HOSPITALS**

- **2012:** 70
- **2013:** 74
- **2014:** 76
- **2015:** 82
- **2016:** 84

- **11.8% lower than 2015**
- **4.0% lower than 2012**

**PIPERACILLIN AND TAZOBACTAM USE IN ACUTE HOSPITALS**

- **2012:** 90
- **2013:** 100
- **2014:** 120
- **2015:** 130
- **2016:** 140

- **13.3% lower than 2015**
- **2nd successive reduction**
- **7.2% lower than 2012**

[Link to additional information](http://www.hps.scot.nhs.uk/pubs/detail.aspx?id=3378)
OTHER INTERVENTIONS IN HOSPITALS

- All AMTs have ongoing programme of education for clinical staff on antimicrobial stewardship to highlight guidance and good practice
- National education resources to support stewardship
- Local guidance available via intranet and app
- Antimicrobial ward rounds in some hospitals
- National carbapenems quality improvement programme
- New work – development of a toolkit to support improvements in day 3 review and duration of oral antibiotics
NATIONAL PPS DATA ON QUALITY OF PRESCRIBING

- 5.2% Reason in notes
- 12.6% Reason in notes and chart
- 5.6% Reason in drug chart
- 76.6% Reason in medical notes

- 82.7% Reason in medical notes
- 11.0% Reason in notes and chart 3.9%
- 11.0% Reason in drug chart 2.3%

87.2% of treatment antimicrobials were compliant with local policy in 2016
82.5% of treatment antimicrobials were compliant with local policy in 2011

http://www.hps.scot.nhs.uk/resourcedocument.aspx?id=5964
Seasonal variation in quinolone use – recommended by ESAC

Original Article

European Surveillance of Antimicrobial Consumption (ESAC): quality indicators for outpatient antibiotic use in Europe

Samuel Coenen¹, Matus Ferech², Flora M Haaijer-Ruskamp³, Chris C Butler⁴, Robert H Vander Stichele⁵, Theo J M Verheij⁶, Dominique L Monnet⁷, Paul Little⁸, Herman Goossens²

Author affiliations

Abstract

Background and objective: Indicators to measure the quality of healthcare are increasingly used by healthcare professionals and policy makers. In the context of increasing antimicrobial resistance, this study aimed to develop valid drug-specific quality indicators for outpatient antibiotic use in Europe, derived from European Surveillance of Antimicrobial Consumption (ESAC) data.

The difference in use of quinolones in the two winter quarters (October – December and January – March) compared to the two summer quarters (April - June and July – September) is less than 5%

http://qualitysafety.bmj.com/content/16/6/440
NHS Scotland use of antibacterials in primary care by NHS board, % seasonal variation of fluoroquinolones (DDDs) 2008-09 – 2011-12

http://qualitysafety.bmj.com/content/16/6/440
SEASONAL VARIATION IN QUINOLONES – 2013 ONWARDS

Continue to monitor as not all GPs achieving quality measure

Figure 7: Percentage of GP practices within each NHS board achieving <5% seasonal variation of fluoroquinolones (items) 2013-14
PRIMARY CARE QUALITY INDICATOR – 2013 ONWARDS

Change of focus from ‘What to prescribe’ to ‘Whether to prescribe’

**Total Antibiotics**
Scotland GP Practices (n=987)
Report Period: Jan 2013 to Mar 2013

- Lower quartile [1.8]
- Median [2.14]
- Upper quartile [2.49]
QUALITY INDICATOR WITH A TARGET FOR REDUCTION OF TOTAL ANTIBIOTIC USE

Best in class - prescribing rate at level of lowest quartile

Target – 50% of GP Practices reach lowest quartile or make a defined acceptable move to lower prescribing rate

In 11 of 14 NHS boards ≥ 50% of practices reached the lowest quartile or made minimum acceptable reduction in 2016 (1/5 of interquartile range)

Overall 67.2% of practices met the target

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<th>Mid Quartile (Median)</th>
<th>Upper Quartile</th>
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Data within table from internal SAPG meeting paper
**QUALITY INDICATOR 2017-18**

**APPROACH**
- Continue with reducing unnecessary use and best in class approach
- **Re-set baseline** period to Jan-Mar 2016 to stimulate further reduction

**WILL IT WORK TO MEET 2020 UK TARGET?** (50% reduction in unnecessary use)
- 4,000,000 prescriptions for antibiotics per annum in primary care.
- Assume 60% are for RTI - 2,400,000 prescriptions
- Literature suggests at least 50% are not necessary - 1,200,000
- To reduce by 50% by 2020 - reduction of 600,000 prescriptions.
- 150,000 per year for 4 years is a reduction of 3.75% per year (over past 3 years average of 3.6% decrease per year)

**AMBITIOUS TARGET**

Results Jan-Mar 2017: 57% of practices & 10/14 boards met the target
OTHER INTERVENTIONS IN PRIMARY CARE

• Scottish Reduction in Antimicrobial Prescribing (ScRAP) programme – facilitated education for primary care teams on AMR, RTI and UTI

• GP audit tool and UTI audit tool

• GP feedback pilot – quarterly reports to GP Practices on own prescribing data benchmarked with local and national ‘best in class’ (25th percentile). Due for roll out in 2018.
TOTAL ANTIBIOTIC USE IN PRIMARY CARE

USE OF ANTIBIOTICS IN PRIMARY CARE (EXCLUDES DENTAL)

- In 2016, use of antibiotics was 1.7% down compared to 2015.
- It was 11.1% down compared to 2012.


Items/1000/Day:
- 2012: 2.2
- 2013: 2.0
- 2014: 1.9
- 2015: 1.8
- 2016: 1.7
OTHER PRESCRIBING INDICATORS IN PRIMARY CARE

Antibiotics recommended for empirical treatment of common infections accounted for 81.5% of total antibiotic use in 2016, similar to 2012 (81.2%)

The rate of antibiotic use in 2016, in persons aged 0-4 years was 35.2%. Since 2012, there has been a 22.2% reduction in the rate of antibiotic use in this age group.

Cephalosporins, co-amoxiclav and fluoroquinolones) accounted for 8.0% of total antibiotic use in 2016 similar to 2015 (8.1%) but markedly less than in 2008 (14%)

Three-day courses in adult females:
40.0% for nitrofurantoin in 2016, compared with 24.0% in 2012
58.1% for trimethoprim in 2016 compared with 49.5% in 2012
SAPG APPROACH TO OPTIMISING ANTIMICROBIAL PRESCRIBING

• Triad of Information, Quality Improvement and Education

• Multi-professional teams

• Applying Realistic Medicine to provide:
  o Personalised treatment for patients
  o Reduce variation
  o Reduce harm
  o Reduce waste
Data linkage work has shown no unintended consequences of reduced antibiotic use in RTI and confirmed patients with serious infections are receiving antibiotics.

Resistance in key Gram negative organisms has been stable since 2012.

The incidence of MRSA continues to decrease; however MSSA incidence has increased, as has overall S. aureus bacteraemia.
THANK YOU

ANY QUESTIONS?

Acknowledgements:
Andrew Seaton, Chair of SAPG
Members of SAPG

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http://www.scottishmedicines.org.uk/SAPG/
About_the_Scottish_Antimicrobial_Prescribing_Group__SAPG_