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1. Queensland Statewide Antimicrobial Stewardship
2. UQCCCR, The University of Queensland
Queensland State-Wide Antimicrobial Stewardship Program
Statewide AMS
Uniting Queenslanders to enhance the use of antimicrobials and to preserve them for future generations by advancing clinical practice, education and research

- Dr Krispin Hajkowicz – Director
- Dr Minyon Avent – Senior pharmacist
- Dr Kathryn Daveson – Staff specialist
- Stacey McNamara - Clinical nurse consultant
- Emily Waddell – Pharmacist
- Tyson Byrne-Baxter - Administration Officer
“... the microbes are educated to resist penicillin and a host of penicillin-fast organisms is bred out... In such cases the thoughtless person playing with penicillin is morally responsible for the death of the man who finally succumbs to infection with the penicillin resistant organism. I hope this evil can be averted.”
Correlation between antibiotic use and resistance

**Figure 6:** Correlation between penicillin use and prevalence of penicillin non-susceptible *S. pneumoniae*

AT, Austria; BE, Belgium; HR, Croatia; CZ, Czech Republic; DK, Denmark; FI, Finland; FR, France; DE, Germany; HU, Hungary; IE, Ireland; IT, Italy; LU, Luxembourg; NL, The Netherlands; PL, Poland; PT, Portugal; SI, Slovenia; ES, Spain; UK, England only.

Comparison of antibiotic use in the community

- **Australia** (2014)
- **England** (2014)
- **Canada** (2011)
- **Norway** (2013)
- **Denmark** (2014)
- **Sweden** (2014)
- **Netherlands** (2013)

**Defined daily doses per 1000 inhabitants per day**

AURA Report 2016, Australian Commission on Safety and Quality in Health Care
Globally – The Future

- RAND Report – model for 2050
- 10 million excess deaths
- >$US 400 billion p.a. loss to global economy
- “More certain threat than global warming”
- 21 September 2016 – WHO action plan
National AMR strategy

1. Increase Awareness and Understanding of AMR (communication; education)

2. **Implement Effective Antimicrobial Stewardship (AMS) practices**

3. One Health Surveillance of antimicrobial use and AMR

4. Improve Infection Prevention and Control: human and animal settings

5. National research agenda; antibiotic discovery and development

6. International partnerships; regional and global collaboration

7. Clear Governance and Accountability for actions to combat AMR
Antimicrobial Stewardship

- Optimise Clinical Outcome
- Minimising adverse consequences of antimicrobial use
- Decrease or Control Costs
INTRODUCTION OF A NEW HEALTH EFFICIENCY AND ACCESS TO TREATMENT (HEAT) TARGET FOR CLOSTRIDIUM DIFFICILE ASSOCIATED DISEASE (CDAD) FOR NHS SCOTLAND

- **Hospital-based empirical prescribing**: antibiotic prescriptions are compliant with the local antimicrobial policy and the rationale for treatment is recorded in the clinical case note in $\geq 95\%$ of sampled cases.

- **Surgical antibiotic prophylaxis**: duration of surgical antibiotic prophylaxis is $<24$ hours and compliant with local antimicrobial prescribing policy in $\geq 95\%$ of sampled cases.

- **Primary Care empirical prescribing**: seasonal variation in quinolone use (summer months vs. winter months) is $\leq 5\%$, calculated from PRISMS data held by NHS Boards.
Strama Human Medicine
From a voluntary network to governmental organisation

- 1995: National working group was initiated as a response to the rapid increase of Penicillin Non-susceptible Strep. Pneumoniae (PNSP) in southern Sweden
- 1996: A network of local Strama groups formed in almost all counties
- 2000-2005: Some financial support for the national group via funds for public health measures
- 2006: Strama receives a governmental mandate and 10 million SEK (1 million EUR) per year
- 2010: Strama becomes part of Swedish CDC (today Public Health Agency)
- 2010 National goals are set in a governmental 5-year patient safety campaign to reward county councils if goals are met. One of these goals is to reduce antibiotic use. Longterm goal is 250 prescriptions/1000 inhabitants/year.
Prescriptions/1000 inhabitants and year

Start of Strama campaigns
Hospital admissions for acute mastoiditis, quinsy, and acute rhinosinusitis in children were stable or decreased 1987-2004.

Data from the national registry of diagnosis in hospital care (National Board of Health and Welfare).

*Lancet Infect Dis* 2008; 8: 125–32
Aim: Gain an understanding of factors affecting the implementation of antimicrobial stewardship (AMS) programs in rural and regional Queensland.
METHODS

- NO on-site Infectious Diseases Specialist
- High antibiotic utilisation rate
METHODS

Site visits:

- pre-visit questionnaires
- visit to on-site facilities
- meetings with key AMS stakeholders
AMS – Statewide

Legend

🌟 StatewideAMS pilot sites
😊 AMS pharm/s on-site
,ID/ Micro on-site
😊 AMS nursing staff on-site
Traffic-light type restriction policy
RESULTS
Proportion of QSA MSP pilot sites with AMS element formalised

- All
- Some
- None
RESULTS

Enablers

- greater sense of pride and desire for success
- flat governance structure
- established hub and spoke model
- well established telehealth access
RESULTS

Barriers

- limited governance structure
- lack of access to Infectious Diseases advice
- high turnover rate of clinicians
- institutional prescribing that is resistant to change
Areas for support

- access to Infectious Diseases advice in real time
- provide real time AMS support
- education: telehealth, workshops & forums
- provide assistance with monitoring of appropriate use of antimicrobials with feedback strategies to prescribers
Areas for support

➢ contribute expertise to state & local guideline development
➢ prioritisation and implementation of AMS intervention strategies
SUMMARY

- Collaboration with rural facilities
- Tailored program of support and resources
Recommendation Sharing Shed

- development of programs for the appropriate use of antibiotics
- website: Queensland Statewide AMS