Heather Kennedy, Advanced Antimicrobial Pharmacist & Jo McEwen, Advanced Nurse Practitioner
Antimicrobial Stewardship
Project Timeline 2021 – what’s been achieved so far........

April 2021
- Increase in SABs observed
- Increase noted in IV antibiotic use

May 2021
- Presented proposal to implement HARP in 1 ward at CED

June/July 2021
- Baseline antimicrobial audits carried out by AMT

August 2021
- Engagement event to better understand decision making process around abx and develop process map

September 2021
- Consultation on process map

October 2021
- Invited to broaden scope of HARP across surgical floor

October 2021
- FY driven antimicrobial audit

November 2021
- FY Driven QI sticker project

November 2021 – January 2022
- Time out – COVID activity
  - Formation of Surgical HARP Steering Group
  - NMP led AMS rounds introduced
  - Change ideas identified and agreed

February 2022
- Development of Surgical Antimicrobial Guideline

March 2022
- Audit results & HARP change ideas presented at CED

April 2022
- AMS Link Nurses recruited across surgery
HARP tools

- performance measures for antibiotic utilisation
- Target specific infections
- Adopt guidelines for management using a shorter course of therapy
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<th>AMT collaboration</th>
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<td><strong>Develop</strong></td>
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<td><em>Develop a systematic plan for parenteral-to-oral conversion of antimicrobials based upon patient condition</em></td>
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<td><strong>Develop</strong></td>
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<td><em>Develop clinical criteria and guidelines to promote the switch from parenteral to oral agents as soon as possible</em></td>
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<td><strong>Use</strong></td>
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<td><em>Use healthcare information technology, e.g. electronic medical records, to improve antimicrobial decision-making</em></td>
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NHS Tayside - Reducing Staphylococcus Aureus Bacteraemia

**Aim**

To reduce incidence of SABs by 10% by xxxx.

With a further goal of an overall 20% reduction by xxxx.

**Primary Drivers**

Collective leadership to promote a culture of safety

Safe use and management of invasive devices

Appropriate Antimicrobial stewardship

Optimise management of patients at risk

**Secondary Drivers**

Enhanced staff, patient and carer education and training package

Create a culture of MDT collaboration

Measurement systems that enable learning

Appropriate selection, insertion and adherence to current management guidance including insertion/maintenance bundles

Robust and proactive MDT review process for all devices

Standardisation of all pathways relating to devices

Ensure appropriate antimicrobial product choice, duration and route of administration

Optimise practice for taking blood cultures

Implementation and adherence of all relevant national protocols

Identify patients at risk

Skin and soft tissue health guidance is adhered to

Reducing unwanted variation in unknown sources

**Leadership and culture**

- Understanding the risk and impact of SAB's
- Using data for improvement
- MDT safety huddles
- National benchmarking
- Patient information leaflets (Risk factors and self care)
- Engagement (OLT and golden week)
- Individual ward data

**Safe management of invasive devices**

- Point prevalence (this is baseline data)
- Observation of practice
- Reviewing adverse event review tool
- Reviewing SOP’s
- Compliance with insertion paperwork bundles
- Ensuring devices are only inserted when necessary
- Governance structures in place
- Care plans
- Icons within dashboard and links to safe care
- Electronic bundle and prompts
- Choice of limb or device

**Antimicrobial stewardship**

- Post SAB Protocol – implementation, education and documentation
- Practice of Blood Culture Technique
- Consider antibiotic bundle
- Link with HARP (Hospital antimicrobial review programme)
- Link with fluids and pharmacy around IV meds and infusion

**Optimal management of patients at risk**

- Adequate skin assessments
- Use of skin bundles
- Review of wound charts
- Hydration assessment
- Encouraging personal hygiene
- Daily huddles to identify patients at risk of SAB
- Identify vulnerable groups and ensure appropriate care planning to reduce risk of harm
Create Surgical IV Abx guide

Increase education & awareness:
- Junior doc induction
- CMA

 AMS Link Nurse role in each surgical ward to champion work, raise awareness and provide education

Review documentation for post-op patients

Review weekend handover process

Review documentation for post-op patients

Key Performance Indicators

Information Board on all wards:
- Updates
- Data

Consultants on ward rounds to make decisions

Delegation of responsibility

Review process for discharged patients:
- Hot clinics

Review process for discharged patients:
- Hot clinics
% Compliance with policy

1. Documented indication
2. Avoid 4C antibiotics
3. Appropriate for pathogens
4. Prophylaxis extended
5. Gentamicin first line

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GI Included in Empirical Treatment Guide Already

C. DIFFICILE INFECTION Refer to full guidance to assess severity
Severe/Non severe: Vancomycin 125mg qds (10 days)
Recurrent: positive CDI in previous 12 weeks - see guidance

PERITONITIS/BILIARY TRACT/INTRA-ABDOMINAL (TOTAL IV/PO 7 days)
IV Amoxicillin + Metronidazole + Gentamicin
Step down: PO Co-trimoxazole + Metronidazole
(if penicillin allergic: IV Vancomycin + Metronidazole + Gentamicin)

ACUTE GASTROENTERITIS
No antibiotic treatment required. Seek advice if severe.

ACUTE PANCREATITIS
Antibiotics unlikely to affect outcome. Seek advice.

PROVEN SPONTANEOUS BACTERIAL PERITONITIS (5 - 7 days)
Mild disease: (incidental diagnosis on routine tap): Co-trimoxazole PO
Severe disease: Piperacillin/Tazobactam IV 4.5g tds then step down to Co-trimoxazole PO
# Development of Surgical Guideline

## Gastrointestinal Treatment Guidance

- Always document the indication and planned duration for antibiotics in the medical notes and on medicine chart.
- For unusual pathogens (e.g., VRE or ESBL) or discussion of complicated cases, please email Tay.digitalscotland.nhs.uk. Durations may be reviewed in these cases.
- For OPAT referral, please use referral guidance and email both Tay.digitalscotland.nhs.uk and Tay.immuno@tayside.nhs.uk.
- There is no minimum duration for IV antibiotics - they should be reviewed every 12-24hrs IVOST at the earliest appropriate point in care.
- Where possible, consider switching to ORAL Metronidazole rather than IV Metronidazole as bioavailability is high for the oral agent (approx. 90%).

### Indication | IV Antibiotic Treatment (review need for IV antibiotics every 12-24 hours) | Oral Antibiotic Treatment (IVOST criteria) | Duration | Comments
--- | --- | --- | --- | ---
**Acute Cholangitis**
- **Inflammation of biliary tract or bile ducts after operations or injury**
- **Ultrasound with MRCP**
- **Amoxicillin 5g IV, metronidazole 500mg IV** (consider PO metronidazole where possible)
- **If allergic to penicillin**
  - **Roxicillin 5g IV, metronidazole 500mg IV**
  - **Ertapenem 500mg IV**
- **Severe renal impairment - substitute Atezolizumab for gentamicin**
- **1 mL co-trimoxazole 900mg bd + levofloxacin 400mg tid**
- **If patient does not tolerate co-trimoxazole contact 10 for further advice**
- **Total duration of IV and oral therapy should be 5-7 days**
  - **Rapid imaging or drainage may be required if infection is severe**
  - **Evidence for VRE or ESBL indicates need for IV antibiotics**
  - **IVOST at earliest opportunity as patient may need dialysis or peritoneal **
  - **POST cell treatment**

**Acute Cholecystitis**
- **Acute inflammation of gallbladder**
- **Ultrasound and MRCP**
- **Amoxicillin 5g IV, metronidazole 500mg IV** (consider PO metronidazole where possible)
- **If allergic to penicillin**
  - **Roxicillin 5g IV, metronidazole 500mg IV**
  - **Ertapenem 500mg IV**
- **Severe renal impairment - substitute Atezolizumab for gentamicin**
- **1 mL co-trimoxazole 900mg bd + levofloxacin 400mg tid**
- **If patient does not tolerate co-trimoxazole contact 10 for further advice**
- **Total duration of IV and oral therapy should be 5-7 days**
  - **Diagnostic laparoscopy or laparotomy may be required**
  - **IVOST at earliest opportunity as patient may need dialysis or peritoneal **
  - **POST cell treatment**

**Infective Pancreatitis**
- **Inflammation of pancreas**
- **Monitor patient for signs of sepsis**
- **Mild disease does not require abs therapy**
- **Amoxicillin 5g IV, metronidazole 500mg IV** (consider PO metronidazole where possible)
- **If allergic to penicillin**
  - **Roxicillin 5g IV, metronidazole 500mg IV**
  - **Ertapenem 500mg IV**
- **Severe renal impairment - substitute Atezolizumab for gentamicin**
- **1 mL co-trimoxazole 900mg bd + levofloxacin 400mg tid**
- **If patient does not tolerate co-trimoxazole contact 10 for further advice**
- **Total duration of IV and oral therapy should be 7 days**
  - **Surgical intervention may be required after assessment**
  - **Sequels of pancreatitis may develop**

**Acute Appendicitis**
- **Definitive treatment is surgical appendectomy**
- **Uncomplicated Appendicitis with surgical intervention**
  - **Prophylactic IV antibiotics prior to surgery only for uncomplicated appendicitis with no surgical intervention**
  - **Treatments per patient and above, review need for IV agents every 12-24 hours.**
  - **Complicated Appendicitis**
  - **Treatments per patient above, review need for IV agents every 12-24 hours.**
- **If uncomplicated appendicitis: no need for any abs therapy, post-op**
- **If surgical intervention or complicated appendectomy**
  - **Co-trimoxazole 900mg bd + levofloxacin 400mg tid**
- **Total duration of IV and oral therapy should be 5-7 days**
  - **Holsow if found then abs therapy and diagnostic may be required**
  - **In these patients duration of IV therapy may be increased**

**Diverticulitis**
- **Can be classified as mild or severe**
- **If severe, monitor for signs of sepsis**
- **Mild Diverticulitis: no need for IV abs therapy**
- **Severe diverticulitis: Treatments per patient above, review need for IV agents every 12-24 hours.**
- **Mild diverticulitis: co-trimoxazole 900mg bd + levofloxacin 400mg tid**
- **Severe diverticulitis: co-trimoxazole 900mg bd + levofloxacin 400mg tid**
- **If patient does not tolerate co-trimoxazole contact 10 for further advice**
- **Mild diverticulitis on abs duration 5 days. Can be managed by OP consult only.**
- **Severe diverticulitis**
  - **Total duration of IV and oral therapy should be 7 days**

Documented review at 72 hours

- Infection progress documented
  - Improving
  - Abscess drainage complete
  - No further scans planned

- Day of antibiotics
  - E.g. gentamicin IV day 2

- Antibiotic review outcome

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However .........

- All 72hr reviews were to continue

- Need to amend measurement tool to capture appropriateness
% with documented PO duration

1. documented indication
2. Duration documented on TPAR
3. Compliant with recommendations

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Test of Change

CHECK!

This patient started antibiotics on: ........../........./2022

Indication: ..................................................

Expected duration: ......................................

Review date: ........../........./.........

Tick to confirm review date added to prescription

*Sign once patient has completed course:

........................................

Checks:

This patient started antibiotics on: ........../........./2022

Indication: ACUTE CHOLECISTITIS

Expected duration: 7 DAYS

Review date: 29.06.22

Tick to confirm review date added to prescription

*Sign once patient has completed course: ........../........./.........
Implementation of AMS Link Nurse

- 24 nurses volunteered across surgical floor
- To raise awareness of antimicrobial stewardship at ward/department level
- To act as a link between the clinical team and the (AMT)
- To facilitate and assist with the delivery of education at ward level and ensure that all training activity is recorded
- Promote antimicrobial stewardship competency framework across MDT practice
- Promote national indicators at ward level

ANTIMICROBIAL STEWARDSHIP LINK NURSE

A NEW NURSING ROLE IS BEING TESTED IN YOUR AREA

The Purpose of the Role is:
- TO RAISE AWARENESS OF ANTIMICROBIAL STEWARDSHIP (AMS)
- LINK BETWEEN THE CLINICAL TEAM & THE ANTIMICROBIAL MANAGEMENT TEAM
- FACILITATE AND ASSIST WITH EDUCATION
- PROMOTE THE PRINCIPLES OF AMS
- PROMOTE NATIONAL INDICATORS

Your AMS Link Nurse Is:...........................................

For more information, discuss with your AMS Link Nurse or Contact the Advanced Nurse Practitioner - Antimicrobial Stewardship on: Bloop: 3298 or Ext: 36046
AMT further actions

Develop
- Develop computer-based surveillance to target antimicrobial interventions and prompt clinical decisions making process

Track
- Track resistance patterns, identify HAIs, adverse drug events and progress with change ideas

Implement
- Implement multi-professional collaboration between the clinical surgical team and AMT
Acknowledgements:
NHS Tayside AMT
NHS Tayside Surgical Teams
NHS Tayside Quality Improvement Team
Dr Busi Mooka